

**State of Iowa  
Energy Center Board  
Meeting Minutes of August 10, 2023  
at IEDA, 1963 Bell Avenue, Suite 200  
Mississippi River Conference Room  
Des Moines, Iowa  
Or Via Teams Webinar**

**Call to order 1:05 p.m.**

**Board Members Present**

Stuart Anderson, Board Chair  
Craig Just, Vice Chair  
Kelcey Brown  
Troy DeJoode\*  
Naomi DeWinter  
Debi Durham  
Erik Helland  
Anne Kimber  
Terry Kouba\*  
Dan Nickey  
Taaf Vermeulen  
Matt Washburn\*  
Lanny Zieman

**Iowa Economic Development Authority Staff Present**

Brian Selinger  
Amber Buckingham  
Stephanie Weisenbach  
Lisa Connell  
Deanna Triplett  
Jeff Geerts  
Abbie Christophersen\*  
Betty Hessing\*  
Michelle Cook  
Vicky Clinkscales  
Ryan Young  
Rob Christensen  
Staci Hupp Ballard  
Terry Roberson\*  
Kanan Kappelman\*  
Shelly Peterson\*  
Emily Hockins\*

**Iowa Finance Authority Staff Present**

Dave Powell\*  
Samantha Askland\*  
Tim Morlan\*

### **Others Present**

JD Davis, Iowa Association of Business and Industry  
Katie Larson, SSAB  
Sean Keenan, SSAB  
John Waldron, Shive-Hattery  
Kevin Bruxvoort, Shive-Hattery  
Tina Hoffman, MidAmerican  
Joe Collins, Iowa Department of Education  
David Huck, Canadian Pacific Kansas City  
Dusky Terry, ITC Midwest  
Ethan Hohenadel, Iowa Association of Electric Cooperatives  
Steve Falck, Environmental Law and Policy Center  
Nick Peterson, Alliant Energy  
Cheri Monahan, ITC Midwest  
Jim Reecy, Iowa State University  
Linc Kroeger, Knight Moves  
Emma Simmons, Iowa Department of Transportation  
Lori Foresman-Kirpes, Polk County Conservation  
Brenda Biddle, Iowa Utilities Board  
Linda Thrasher, Greenfield Nitrogen  
Natalie Merrill, Chevron Renewable Energy Group  
Rachel Geilenfeld, Chevron Renewable Energy Group  
Todd Cogdill, Iowa Department of Transportation  
Steve Lukan, Black Hills Energy  
Craig Erickson, Shive-Hattery  
Jeremy Caron, City of Des Moines  
Joe Liviero, Winnebago Industries  
Russ Gibson, Seneca Companies  
Jason Cortes, Tritium Technologies  
Lillie Brady, Iowa Governor's Office  
Adam Schwartz, Kwik Trip/Star  
Holly Schnur, Verbio  
Rich Iverson, City of Ames  
Chaz Allen, Iowa Utility Association  
Greg Northrup, Verbio  
Chad Reece, Winnebago Industries  
Kevin Kuhle, Iowa Farm Bureau Federation\*  
Bob Bird, Iowa Senate Republican Caucus\*  
Matt Gronewald, Iowa Farm Bureau Federation\*  
Evan Johnson, Legislative Services Agency\*  
Tamara Nicholson, Iowa Department of Transportation\*  
Natalie, Guest\*  
Shelby Ebel, Iowa Department of Transportation\*  
Jacob Maas, Kum and Go\*  
Mike Bahr, Turner Construction Company\*  
Jace Mikels, Iowa Senate Democratic Caucus\*

\*Participated via Teams

### **Welcome & Introductions by Board Chair Stuart Anderson**

Stuart Anderson welcomed everyone to the August 10<sup>th</sup> IEC Board meeting

**Roll Call**

Michelle Cook did roll call and a quorum was established.

**Consideration of June 6, 2023 IEC Board Meeting Minutes**

Motion by	Debi Durham
Motion	I move approval of the June 6, 2023 minutes as presented
Second	Craig Just
Voice Vote	All ayes in favor Motion approved

**Fiscal Update – Attachment A**

Terry Roberson explained there are about three weeks left and then we will put a wrap on State FY23 Both the Energy Center Grant Program and the Infrastructure Loan Program will have sufficient funds carried forward into State FY24 to carry out their responsibilities and tasks during the new fiscal year Terry Roberson stated he would be happy to answer any questions, but no questions were asked

**Competitive Grant Program Update**

Amber Buckingham gave an update on the competitive grant program and the current funding cycle There were 34 pre-applications this round The Grant Committee met to review the pre-applications and selected 11 to complete a full application Because the Grant Committee currently only has two members, funding decisions on those full applications have been delayed until we have a fuller Committee Hopefully after today we will have a four-person Committee and can resume review of those full applications If that happens, we will do our funding decisions at the October 3rd special meeting that Brian has previously emailed you about

**Loan Termination, Sievers Family Farm LLC 21-AEL-001 – Attachment B**

Stephanie Weisenbach gave an update on the Alternate Energy Revolving Loan Program that was inherited when IEDA assumed responsibilities for the Energy Center IEDA received a request to terminate Sievers Family Farm loan agreement This was awarded in 2021 and the borrower recipient has requested to terminate the loan agreement due to other priorities on their farm related to energy They've made that request and according to our procedures, it is the responsibility of the Board to decide on that termination for IEDA to complete in that legal process

Motion by	Debi Durham
Motion	I move to approve IEDA Execution of a Termination Agreement with Sievers Family Farms, LLC
Second	Dan Nickey
Roll Call	Yes 13 Abstain 0 Motion approved

**Energy Infrastructure Revolving Loan Program Loan Application Request – City of Kimballton – Attachment C**

Stephanie Weisenbach shared there is a quarterly cycle for the Energy Infrastructure Revolving Loan Program Each quarter, IEDA and Iowa Finance

Authority staff review applications. The one application received this quarter was from the City of Kimballton. They are eligible under the program.

They seek to complete improvements to its substation and distribution system, including underground lines and enabling the ability to monitor and control the load on the system. The total project cost is \$3,072,500. The applicant is requesting almost \$2.3 million for a 15-year loan term. The applicant did not demonstrate the ability to repay the loan. We would recommend and plan on suggesting other funding options and resources to assist them with their goals for infrastructure.

Stephanie Weisenbach stated the recommendation from the Loan Committee is to deny this application. Brian Selinger expressed appreciation to Stephanie and the team working to find other options for the City.

Motion by Craig Just  
Motion I move to deny the application  
Second Lanny Zieman  
Roll Call Yes 12 Abstain 1 (DeJoode)  
Motion approved

#### **Appointment to Committees – Attachment D**

Lisa Connell shared appointments to the Grant Committee and Loan Committee. There are currently two members on the Grant Committee due to changing of membership of the board. There is a vacancy on the Loan Committee. The term would start today and go through April of next year.

#### **Appointments to Grant Committee**

Motion by Dan Nickey  
Motion I move to appoint Anne Kimber and Taaf Vermeulen to a four-person Grant Committee for a term from August 10, 2023 to April 30, 2024  
Second Stuart Anderson  
Voice Vote All ayes in favor. Motion approved

#### **Appointments to Loan Committee**

Motion by Erik Helland  
Motion I move to appoint Lanny Zieman to a five-person Loan Committee for a term from August 10, 2023 to April 30, 2024  
Second Debi Durham  
Roll Call All ayes in favor. Motion approved

#### **CPKC Hydrogen Locomotive Program – Attachment E**

David Huck with Canadian Pacific Kansas City, made a presentation on CPKC Hydrogen Locomotive Program.

#### **Biodiesel in Iowa – Attachment F**

Natalie Merrill with Chevron Renewable Energy Group, made a presentation on Biodiesel in Iowa.

**Destination Net Zero – Attachment G**

Kelcey Brown with MidAmerican Energy, made a presentation on Destination Net Zero

**Zero-CO2 Emissions Steel – Attachment H**

Katie Larson with SSAB, made a presentation on Zero-CO2 Emissions Steel

**Advancing Renewables – Attachment I**

Greg Northrup with Verbio, made a presentation on Advancing Renewables

**e-RV2 Overview – Attachment J**

Chad Reece with Winnebago Industries, made a presentation on e-RV2 Overview

**Update on Iowa’s Implementation of the National Electric Vehicle Infrastructure Program – Attachment K**

Stuart Anderson with Iowa Department of Transportation, made a presentation on Update on Iowa’s Implementation of the National Electric Vehicle Infrastructure Program

**Other Business**

Stuart Anderson turned it over to Brian Selinger to give Energy Office updates

**Energy Center Office Updates**

Brian Selinger expressed appreciation to colleagues, Board, presenters and guests IEDA has a new website for the two residential energy efficiency and electrification programs, rebate programs <https://www.iowaeda.com/iowa-residential-energy-efficiency-programs/?preview=yes>

There is significant funding coming to the State Energy Office/IEDA, \$120 million Federal guidance was just released Update information will be posted on the web page Individuals can sign up for information and updates These programs are going to be complicated and complex We want to do this thoughtfully and in a managed way Rebates will not be showing until 2024

October 3<sup>rd</sup> is a special board meeting The meeting is expected to primarily be a virtual meeting to approve grants now that we have a full team on board to review those full applications The next quarterly meeting will be November 16<sup>th</sup>

**Public Comment Period**                      No public comments

Chairperson Anderson adjourned the meeting

**Adjournment**                                      3 03 p m

Respectfully Submitted,  
Michelle Cook, IEC Board Administrator

# ATTACHMENT A

INFO
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**REPORT**  
**IOWA ENERGY CENTER BOARD**  
**AUGUST 2023**

From: IEDA Administration

Subject: Financial Information SFY23

Attached is the financial information for the IEC programs thru 7-31-23

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<b>Proposed</b>	<b>No Action Required</b>
<b>Motion:</b>	

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Submitted By: Terry Roberson

Attachments: Financial Reports

IEDA				
Financial Report				
Iowa Energy Center				
Fiscal Year 2023				
July 31, 2023				
		<b>IEC MAIN ACCT</b>		
				<b>Total</b>
		Admin	Projects	Fund
<u>Revenue</u>				
Cash Balance Forward		275,000	18,561,590	18,836,590
FY21 IUB Transfer		0	0	0
Principal Repayments YTD		0	0	0
Interest Revenue		0	467,002	467,002
Other Revenue YTD		0	0	0
Deappropriations		0	0	0
Transfers		0	0	0
Total Revenue YTD		275,000	19,028,592	19,303,592
<u>Expenses</u>				
Administration YTD		(140,695)	0	(140,695)
Project Payouts YTD		0	(2,137,560)	(2,137,560)
Leg Auth Transfers (18 Acts Ch 1172 Sec 91)				0
Total Expense YTD		(140,695)	(2,137,560)	(2,278,255)
<u>Obligations</u>				
Obligations C/F		0	6,346,261	6,346,261
Current Year Obligations		0	1,051,872	1,051,872
Current Year Rescissions			(141,122)	(141,122)
Current Year Payouts			(2,137,560)	(2,137,560)
Balance of Current Year Admin		134,305	0	134,305
Net Obligations YTD		134,305	5,119,451	5,253,756
<u>Balance Available</u>		0	11,771,581	11,771,581

IEDA				
Financial Report				
Iowa Energy Center				
Fiscal Year 2023				
July 31, 2023				
	<b>ENERGY INFRASTRUCTURE REVOLVING LOAN PROGRAM</b>			
				Total
	Admin	Projects		Fund
<u>Revenue</u>				
Cash Balance Forward	250,000	14,157,520		14,407,520
FY21 IUB Transfer	0	0		0
Principal Repayments YTD	0	6,001		6,001
Interest Revenue	0	377,786		377,786
Other Revenue YTD	0	0		0
Deappropriations	0	0		0
Transfers	0	1,174,000		1,174,000
Total Revenue YTD	250,000	15,715,307		15,965,307
<u>Expenses</u>				
Administration YTD	(29,452)	0		(29,452)
Project Payouts YTD	0	(397,150)		(397,150)
Leg Auth Transfers (18 Acts Ch 1172 Sec 91)				0
Total Expense YTD	(29,452)	(397,150)		(426,602)
<u>Obligations</u>				
Obligations C/F	0	236,250		236,250
Current Year Obligations	0	3,753,900		3,753,900
Current Year Rescissions				0
Current Year Payouts	0	(397,150)		(397,150)
Balance of Current Year Admin	220,548	0		220,548
Net Obligations YTD	220,548	3,593,000		3,813,548
<u>Balance Available</u>	0	11,725,157		11,725,157



IEDA						
Financial Report						
Iowa Energy Center						
Fiscal Year 2023						
July 31, 2023						
<u>OLD</u>						
<u>IEC/AEL LOAN ACCT</u>						
				Total		
		Projects	Fund		IEDA	OCT 1 2017
					<u>NOTES REC</u>	<u>NOTES REC</u>
<u>Revenue</u>						
Cash Balance Forward	0	1,174,610	1,174,610		1,044,667	718,354
FY21 IUB Transfer	0	0	0			0
Principal Repayments YTD	0	479,925	479,925		(196,286)	(283,639)
Interest Revenue	0	26,123	26,123			0
Other Revenue YTD	0	0	0			0
Deappropriations	0		0			0
Transfers	0	(1,174,000)	(1,174,000)			0
<b>Total Revenue YTD</b>	<b>0</b>	<b>506,658</b>	<b>506,658</b>		<b>848,381</b>	<b>434,715</b>
<u>Expenses</u>						
Administration YTD	0	0	0			
Project Payouts YTD	0	0	0			
Leg Auth Transfers (18 Acts Ch 1172 Sec 91)			0			
<b>Total Expense YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>			
<u>Obligations</u>						
Obligations C/F	0	348,810	348,810			
Current Year Obligations	0	0	0			
Current Year Rescissions		0	0			
Current Year Payouts	0	0	0			
Balance of Current Year Admin	0	0	0			
<b>Net Obligations YTD</b>	<b>0</b>	<b>348,810</b>	<b>348,810</b>			
<b>Balance Available</b>	<b>0</b>	<b>157,848</b>	<b>157,848</b>			





# ATTACHMENT B

ACTION

**REPORT  
IOWA ENERGY CENTER BOARD  
AUGUST 2023**

From: Iowa Energy Center

Subject: Sievers Family Farms, LLC – Request for Termination

Agreement Number: 21-AEL-001

Project Type: 155 kW solar project

Award Date: May 13, 2021

Loan Amount: \$149,200

Loan Term: 48 months

Agreement Executed Date: August 3, 2021

Sievers Family Farms requests to terminate the loan agreement with IEDA and the Iowa Energy Center due to competing priorities.

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**Proposed Motion:** Approve IEDA Execution of a Termination Agreement with Sievers Family Farms, LLC

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Submitted By: Stephanie Weisenbach

Attachments: Email from Brian Sievers

## ATTACHMENT

From Bryan Sievers <bryan.sievers@gmail.com>  
Sent Friday, June 16, 2023 8:03 AM  
To: Stephanie Weisenbach <Stephanie.Weisenbach@iowaeda.com>  
Cc: Lisa G. Sievers <lsievers.lisa@gmail.com>, Brian Selinger <Brian.Selinger@iowaeda.com>  
Subject: Re: AERLP Loan

Stephanie,

I apologize for not responding sooner. Lisa and I have wanted to move forward with this opportunity. However, it just doesn't seem to be working out for us. With the changing nature of the solar industry and its battle over tariffs, inflation, the new incentives available under the Inflation Reduction Act, and our ongoing expansion of our anaerobic digester facility, the solar project never seems to be able to climb into the top tier of our priorities.

We are requesting that the IEDA terminate the loan agreement. If you have any additional questions, please don't hesitate to contact us.

Sincerely,

*Bryan J. Sievers*

*Director, Horizon II Partnership for Climate-Smart Commodities Grant Program*

*Director, Government Relations for Roeslein Alternative Energy*

*Chief Operating Officer, AgriReNew, Glenora Feed Yard, and Sievers Family Farms*

*Vice Chair of the American Biogas Council Board of Directors*

*Co-Chair of Iowa Smart Agriculture*

*26618 20th Avenue*

*Stockton, IA 52769*

*Email: [bryan.sievers@gmail.com](mailto:bryan.sievers@gmail.com)*

*[bsievers@roesleinae.com](mailto:bsievers@roesleinae.com)*

*Facebook: <https://www.facebook.com/AgriReNew/>*

*Phone: 563-340-6541 (Cell)*

# IOWA ENERGY CENTER LOANS PROJECT REPORT

**Applicant:** City of Kimballton  
Loan Request \$2,296,000 for a 15-year term  
Recommendation Deny  
Board Decision August 10, 2023

## ATTACHMENT C

### Summary

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The city of Kimballton, a municipal electric utility, seeks to complete improvements to its substation and distribution system, including undergrounding lines and enabling the ability to monitor and control the load on the system. The total project cost is \$3,072,500. The applicant's financial documentation did not demonstrate sufficient resources for providing match, making the monthly payments on the loan, or having adequate revenue to pledge as collateral. IEDA staff will suggest other funding options and resources for the city to consider that could help them with their infrastructure project.

### Funding Sources

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Source	Form	Amount
City	Cash	\$776,500

### Program Purpose and Eligibility

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The Energy Infrastructure Revolving Loan Program (EIRLP) requires projects to fulfill at least one of the program purposes in Iowa code. This project most aligns with purposes of the electric distribution and electric grid modernization.

The program also requires projects to fulfill at least one of three evaluation criteria. The project fulfills the criteria below, which is required for loans over \$1 million.

- **Broad-reaching benefits to the state, local community and/or utility ratepayers.** This project will address the most critical electrical equipment in the City of Kimballton. It will prevent failure of equipment which would negatively affect the residents. It would also provide distribution infrastructure compatible with future electric vehicle charging or distributed generation.

### Collateral

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Utility revenues are the pledged security for the loan. Municipalities have limited security available for debt service based on Iowa Code.

### Project Timeline

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Award Decision Date August 10, 2023  
Estimated Completion September 2025

# ATTACHMENT D

REPORT  
IOWA ENERGY CENTER BOARD  
August 2023

<b>ACTION</b>
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From: IEDA Legal

Subject: Appointments to Committees

1. Appointments to Grant Committee

261 *IAC* 403.3(6)(a)(1) provides that, each year, the Board determines the size of the Grant Committee and appoints members to the committee.

**Proposed Motion:**

Appoint Anne Kimber and Taaf Vermeulen to a four-person Grant Committee for a term from August 10, 2023 to April 30, 2024.

2. Appointments to Loan Committee

261 *IAC* 403.3(6)(b)(1) provides that, each year, the Board determines the size of the Loan Committee and appoints members to the committee.

**Proposed Motion:**

Appoint Lanny Zieman to a five-person Loan Committee for a term from August 10, 2023 to April 30, 2024.

Submitted By: Lisa Connell, Legal Counsel

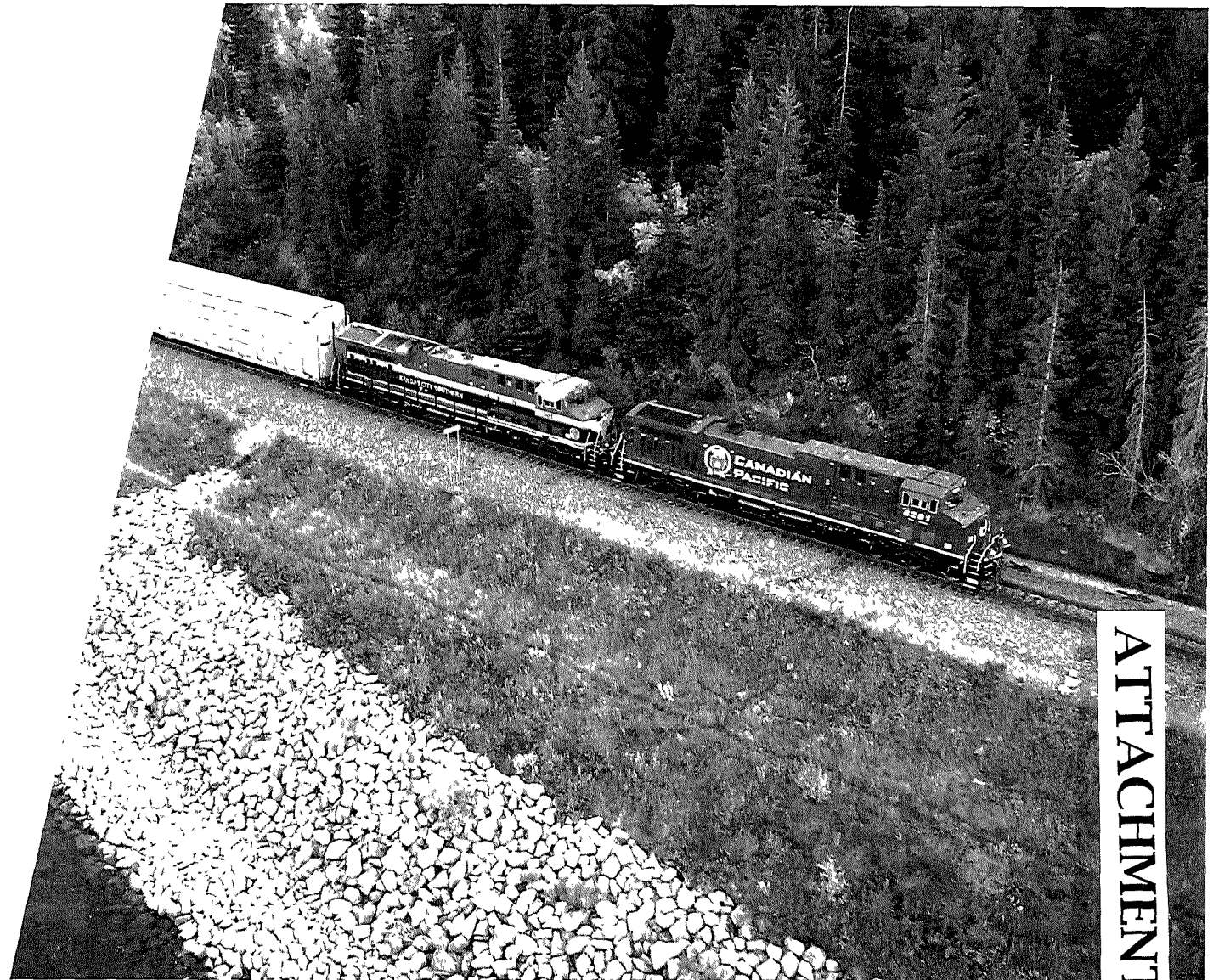


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# HYDROGEN LOCOMOTIVE PROGRAM

Iowa Energy Center Board Meeting

Aug 10, 2023  
Des Moines, Iowa

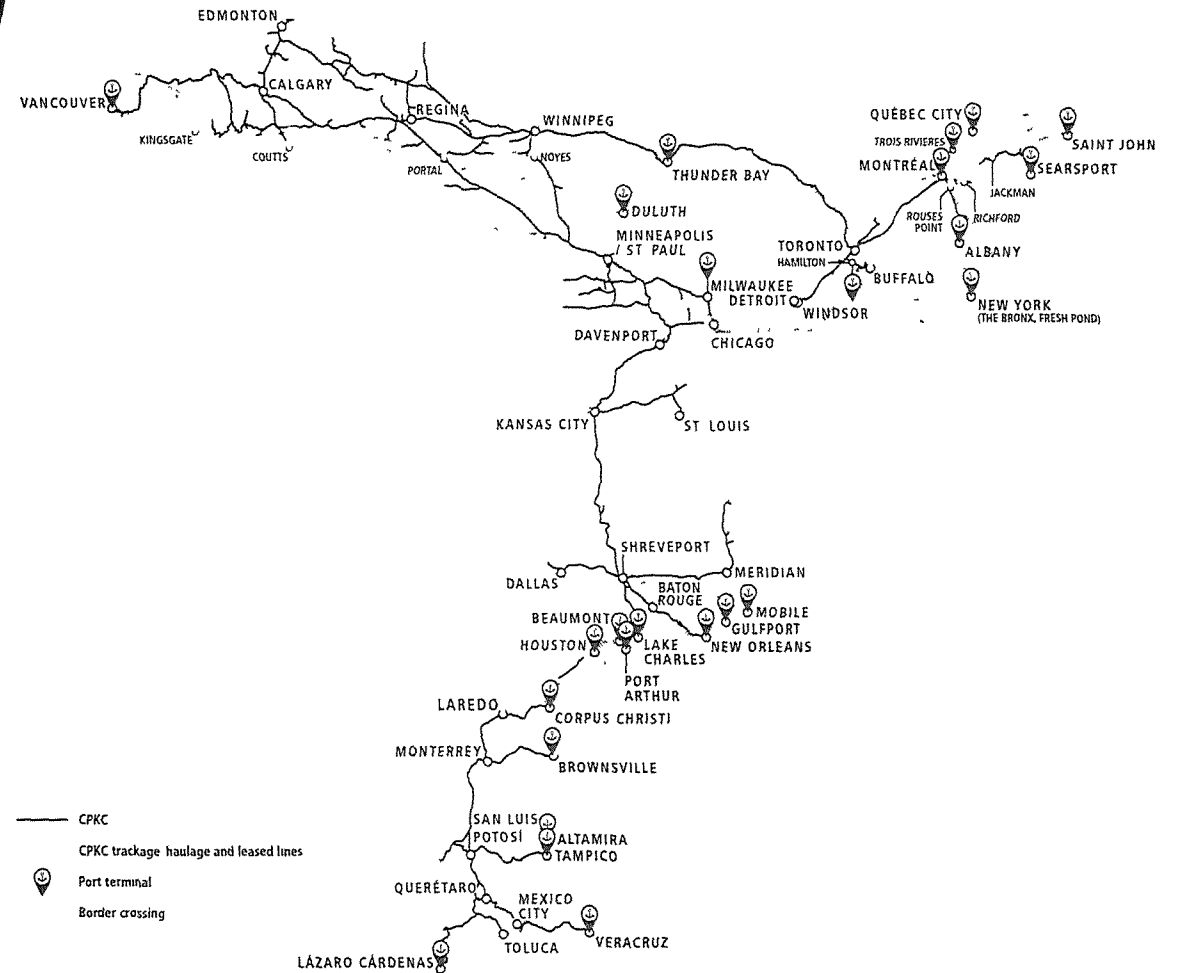


ATTACHMENT E



# CONNECTING A CONTINENT

Transforming the future of freight rail by creating the **safest, most reliable and relevant** railroad in North America, serving as the backbone for commerce and economic growth.



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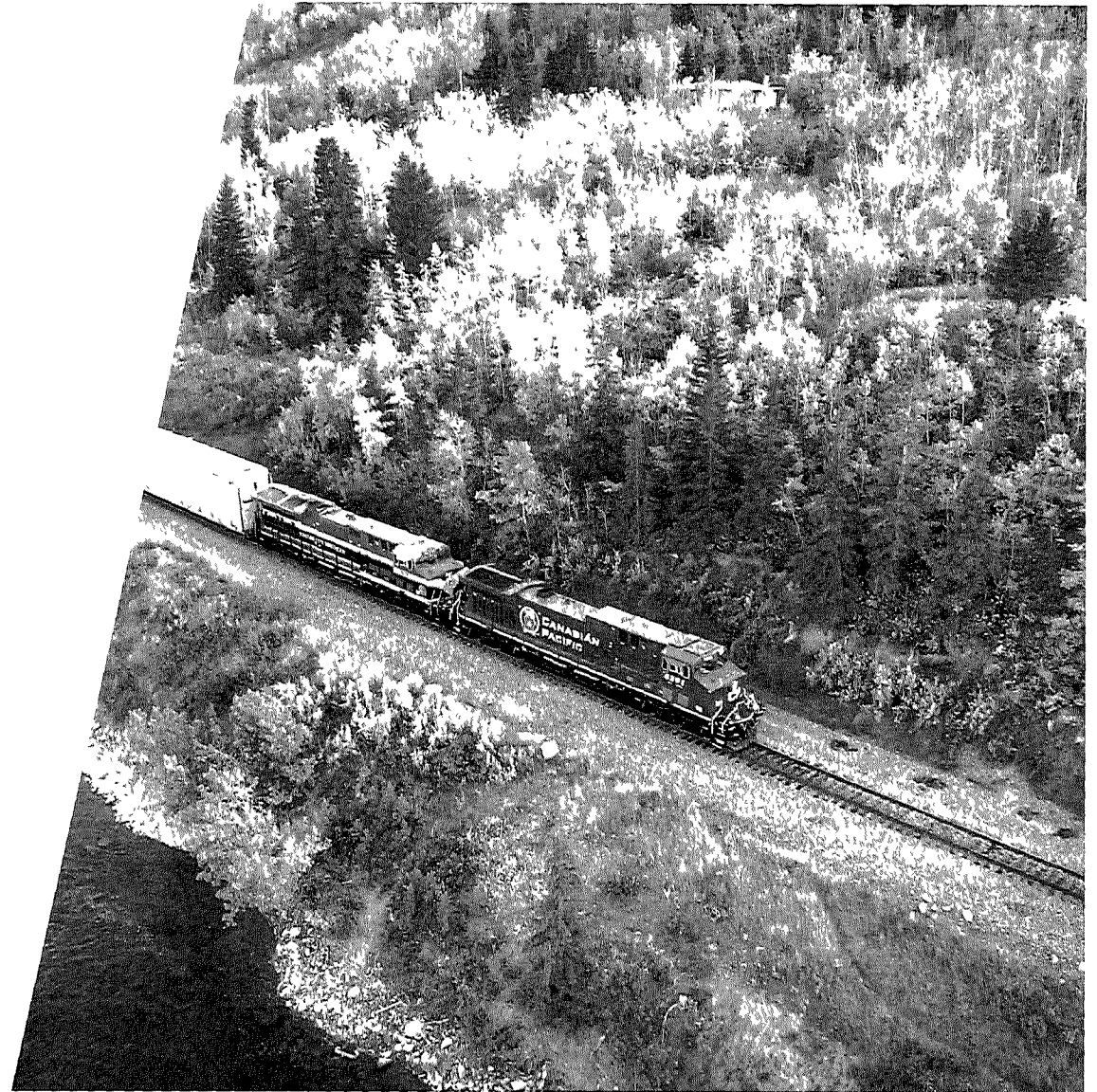
# SUSTAINABLY DRIVEN

## Approach to sustainability

Operating sustainably is imperative to CPKC's future growth and long-term success in connecting vital markets to the North American and global economies

As we merge organizations, we remain sustainably driven and focused on delivering value to all our stakeholders

CPKC is focused on integrating our related sustainability principles and practices into our business as we move forward to move goods and commodities that society relies on



# COMMITTED TO THE LONG HAUL

Conduct our operations in a manner that is sustainably driven and that aims to minimize adverse impacts on the environment and the communities in which we operate.



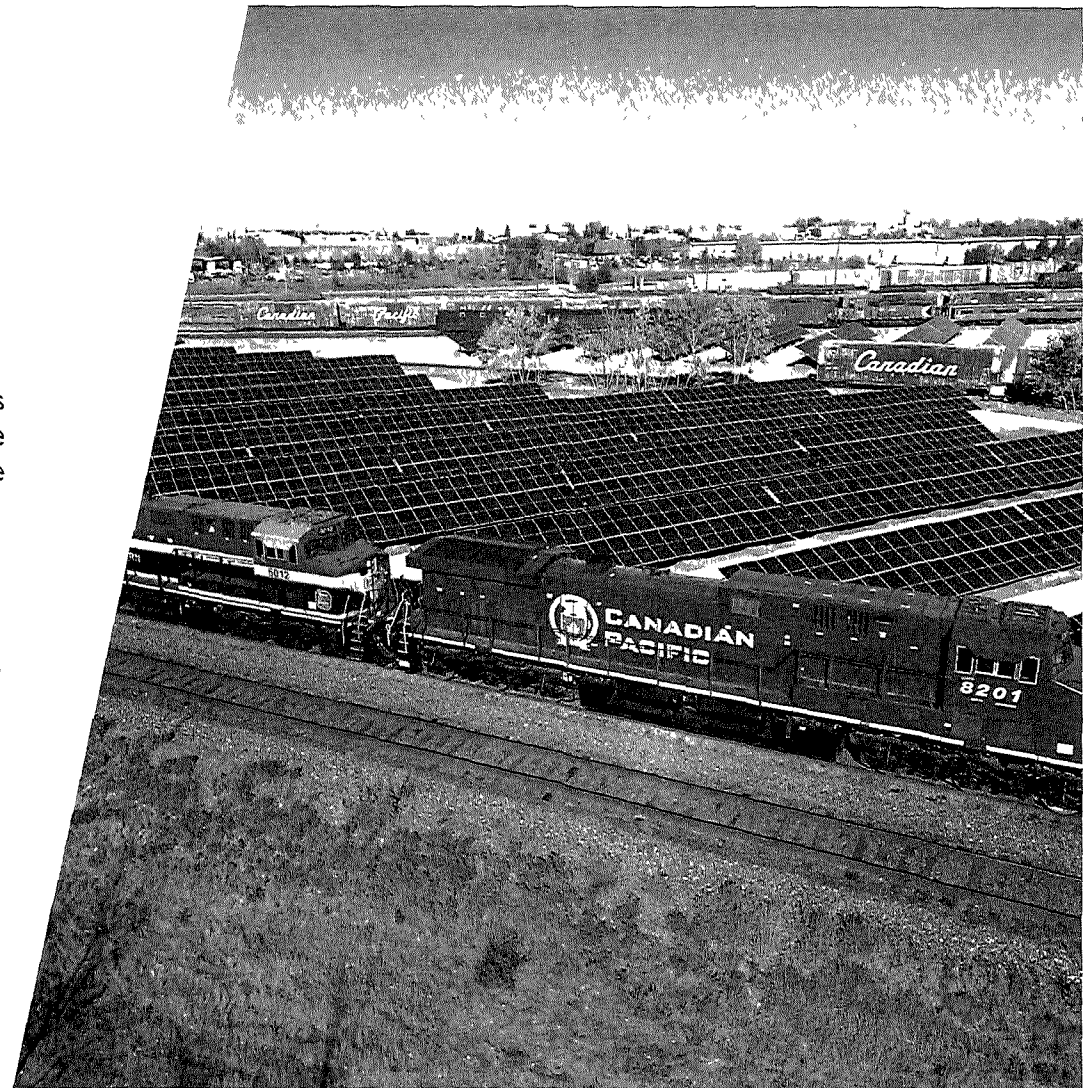
SOCIAL

Committed to being a responsible corporate citizen and a meaningful contributor to society



GOVERNANCE

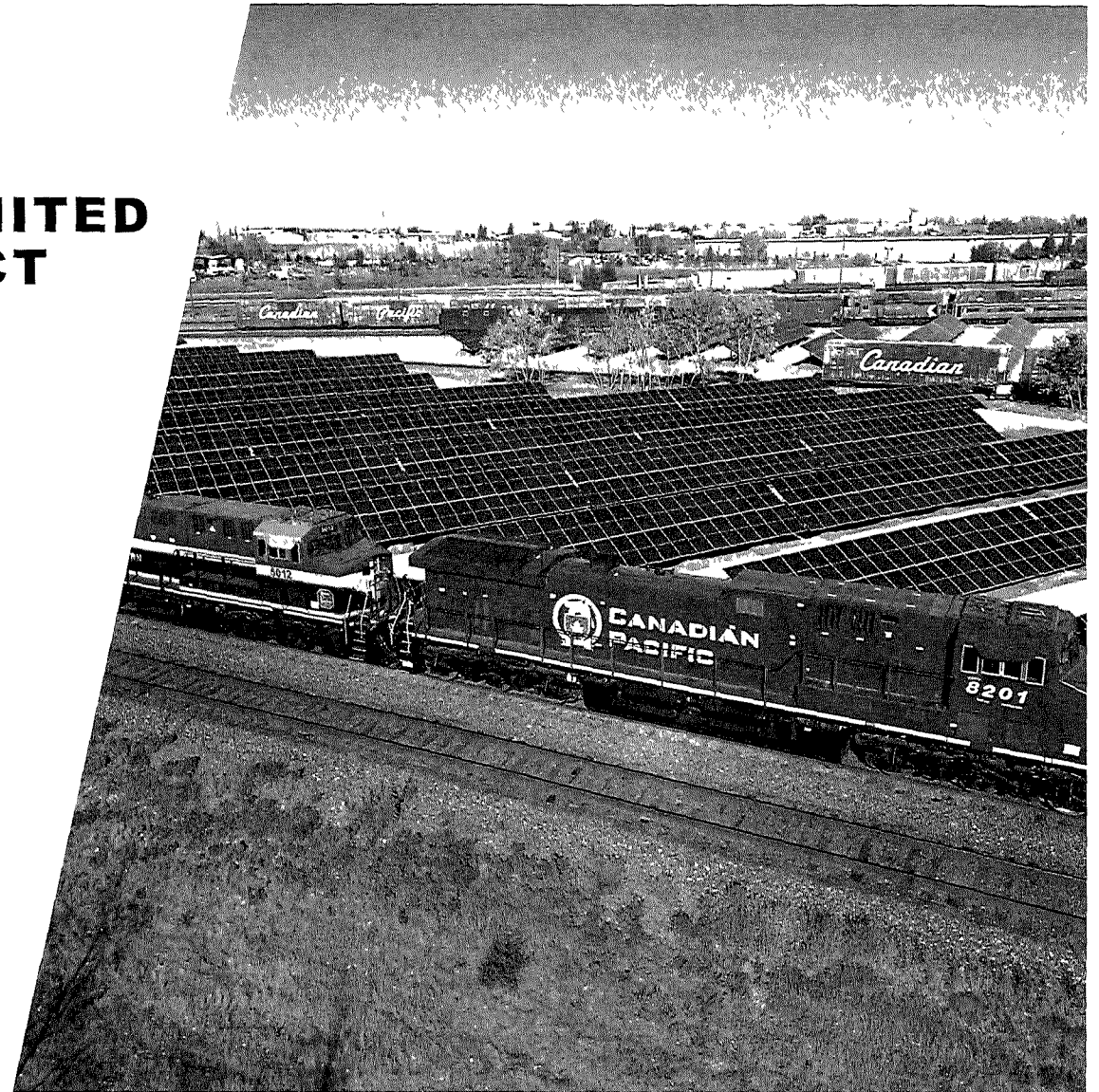
Strong corporate governance practices are essential to effective management, the protection of our organization and to earning the trust of our stakeholders.



# PARTICIPATION IN THE UNITED NATIONS GLOBAL COMPACT

In 2022, CP became the first freight rail company in North America to participate in the UNGC, a voluntary initiative encouraging businesses around the world to adopt responsible business practices

CPKC remains committed to participation in the UNGC and upholding and annually reporting progress on 10 Principles in the areas of human rights, environment, labour and anti-corruption, and to acting on the United Nations Sustainable Development Goals

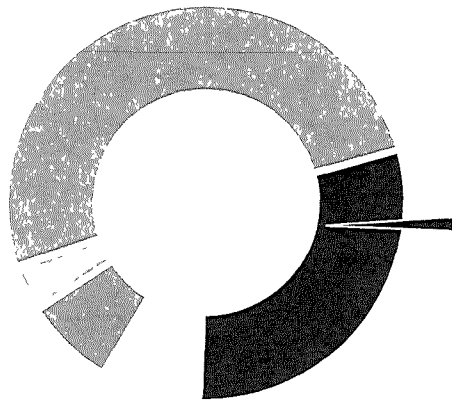


# CLIMATE BENEFITS OF SHIPPING FREIGHT BY RAIL

Transportation by rail is one of the most economical and environmentally responsible methods of moving freight

The transportation sector was responsible for about 28% of North America's (NA's) annual GHG emissions, with the rail industry contributing only 0.6% of the region's total annual GHG emissions (1)

**North America GHG emissions by industrial sector** (1,2,3)  
% of North America greenhouse gas (GHG) emissions

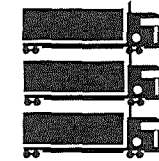


- Energy (except transportation) 53.4%
- Transportation 27.5%
- Agriculture 9.8%
- Industrial processes 6.3%
- Waste 3.1%
- Rail Transportation 0.6%**

## RAIL VS. TRUCKING(4)

A SINGLE UNIT TRAIN KEEPS MORE THAN

**300**



TRUCKS OFF OF PUBLIC ROADS



**4x**

MORE FUEL-EFFICIENT

**75%**



(1) Environment and Climate Change Canada (2023) National Inventory Report 1990 – 2021 Greenhouse Gas Sources and Sinks in Canada Retrieved from [https://publications.gc.ca/collections/collection\\_2023/eccc/En81-4-2021-1-eng.pdf](https://publications.gc.ca/collections/collection_2023/eccc/En81-4-2021-1-eng.pdf)

(2) EPA (2023) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021 U.S. Environmental Protection Agency, EPA 430-R-23-002 <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021>

(3) INCC (2018) Inventario Nacional de Emisiones de Gases y Compuestos de Efecto Invernadero (1990-2015) Retrieved from [Mexico-NC6-BUR2-1-NIR\\_INEGYCEI\\_1990 a 2015 A\\_0.pdf \(unfccc.int\)](https://www.incc.org.mx/medios/mexico-NC6-BUR2-1-NIR_INEGYCEI_1990_a_2015_A_0.pdf)

(4) Association of American Railroads (2020) The Positive Environmental Effects of Increased Freight by Rail Movements in America Retrieved from <https://www.aar.org/wp-content/uploads/2020/06/AAR-Positive-Environmental-Effects-of-Freight-Rail-White-Paper-62020.pdf>

# BIG MOVES. LOWER EMISSIONS

## Carbon Emissions Calculator

### Carbon Emissions Calculator

Explore how shipping freight with CPKC could reduce greenhouse gas emissions within your supply chain.

Use this tool to calculate the estimated GHG emissions\* of shipping your freight by rail with CPKC. As this tool uses data from only CPKC's rail network, it may not be illustrative of your potential emissions on other rail networks (including interchanges to or from other North American rail networks). For improved results, consider using origin and destination locations on CPKC's rail network.

#### Commodity

Chemicals

#### Total Load



Number of Trucks

27

OR

U.S. Tons 521

#### Frequency

Monthly



include empty returns

include drayage trucking

Advanced Options

#### Origin

Calgary, AB, CAN

Drop a Pin

#### Destination

Kansas, USA

Drop a Pin

Calculate Carbon Emissions

### Well-to-Wheels<sup>3</sup> GHG Emissions Details Analysis

#### Rail + Drayage Shipment

##### Tank-To-Wheels Emissions Metric Tons CO<sub>2</sub>e / Year

Locomotive Scope 3 Emissions 131

Drayage Truck Scope 1 & 2 Emissions 130

##### Well-To-Tank Emissions Metric Tons CO<sub>2</sub>e / Year

Locomotive Scope 3 Emissions 53

Drayage Scope 3 Emissions 39

Total Well-To-Wheels Rail + Drayage CO<sub>2</sub>e Emissions 413

#### Long-Haul Trucking Shipment

##### Tank-To-Wheels Emissions Metric Tons CO<sub>2</sub>e / Year

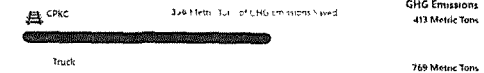
Long-Haul Truck Scope 1 & 2 Emissions 531

##### Well-to-Tank Emissions Metric Tons CO<sub>2</sub>e / Year

Long-Haul Truck Scope 3 Emissions 178

Total Well-to-Wheels Truck CO<sub>2</sub>e Emissions 769

### The Results.



### We Have Good News!

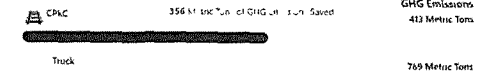
Shipping your freight with CPKC has the potential to reduce carbon emissions by

**46%**

over long-haul trucking alternatives



### The Results.



### We Have Good News!

Shipping your freight with CPKC has the potential to reduce carbon emissions by

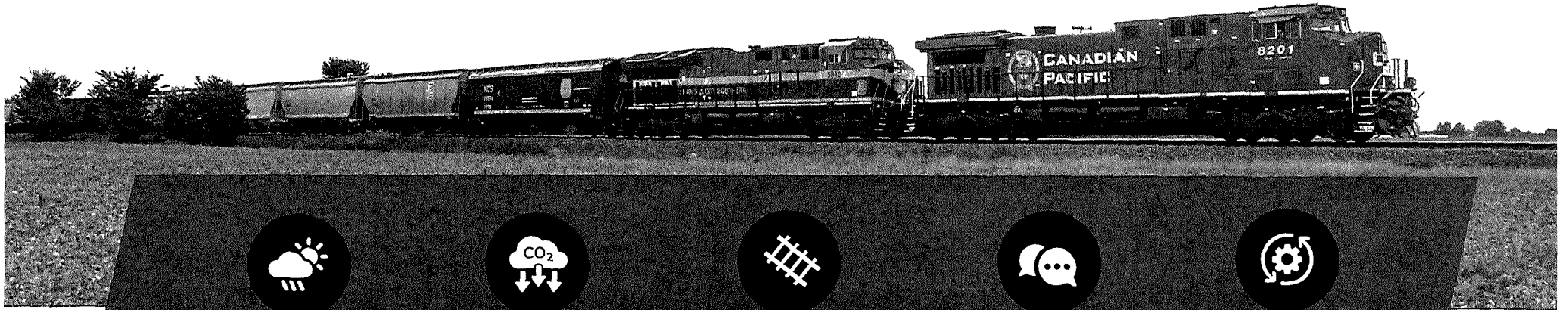
**46%**

over long-haul trucking alternatives



<https://www.cpkcr.com/en/sustainability/cpkc-carbon-calculator>

# CLIMATE COMMITMENTS



Understanding climate-related risk and opportunities



Reducing carbon footprint



Addressing the physical risks of climate change



Integrating climate factors across the business



Engaging with stakeholders

# SCIENCE-BASED EMISSIONS REDUCTION TARGETS

## Reducing our carbon footprint

CPKC has joined the Science Based Targets initiative's (SBTi) Business Ambition for 1.5°C global campaign and is committed to developing a CPKC emissions reduction target aligned with a 1.5°C future within the next two years

**Consolidated Target** CPKC will reduce our well-to-wheel (WTW) locomotive emissions by 36.9% per gross ton-mile by 2030 from a 2020 base year



### Historical GHG Emissions Reduction Targets



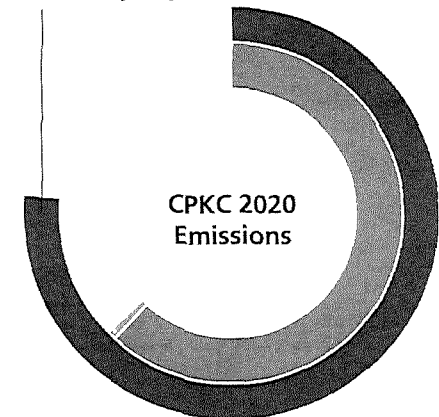
CP will reduce our well-to-wheel GHG emissions intensity (grams per revenue ton-mile) from locomotive operations by 38.3% by 2030



KCS commits to reduce scope 1 and 2 GHG emissions by 42% per million gross ton-miles by 2034 from a 2019 base year

### CPKC Emissions Reduction Target

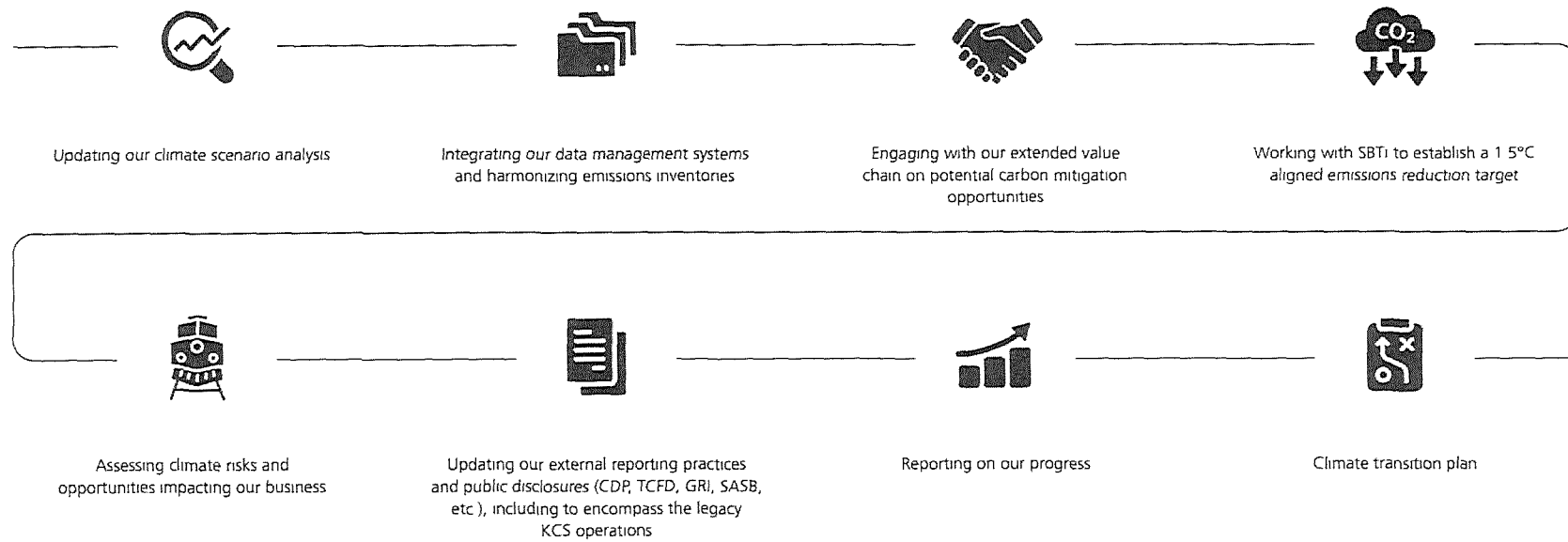
**76%**  
Of GHG Emissions Covered By Target



Scope 1	62%
Scope 2 - Electricity	1%
Scope 3 - Value Chain	37%



# THE PATH FORWARD



# **HYDROGEN LOCOMOTIVE PROGRAM**

**CPKC's Hydrogen Locomotive Program aims to develop North America's first line-haul hydrogen-powered freight locomotive.**

CPKC has initiated a program to convert three different types of diesel-electric locomotives into zero-emissions hydrogen-powered locomotives using fuel cells and batteries to power electric traction motors. The program has the potential to significantly reduce greenhouse gas emissions from locomotive operations, supporting CPKC's Climate Change Commitments and the transition to a low-carbon future in the freight rail sector.



# LOW CARBON CONCEPTS

## Why hydrogen hybrid design?

- Zero emissions
- Similar refueling times to diesel possible + DTL fueling
- Locomotive can operate independently and recharge its own batteries – no wayside charger, genset or diesel-electric consist or fixed recharge location required
- Hydrogen energy density higher than batteries
- Batteries can recapture energy from dynamic braking – saving hydrogen and extending range

	Battery-Electric	Battery-Hydrogen
Recharge/Refuel vs Diesel	14+ hours	No change
Recharge/Refuel Options	Fixed-point	Fixed-point or direct to locomotive
Range vs Diesel	Up to 8%	Up to 30%



- Available from Tier 1 passenger suppliers
- Hydrogen fuel cells and batteries
- Duty cycle different from freight service
- Commercialization in process – Europe, Asia and North America



- Both Tier 1 locomotive suppliers are working on 100% BEL
- Wabtec 2 4 MWh road demonstrator up to 7 MWh
- Progress Rail – Up to 14 5 MWh in various applications

# CPKC HYDROGEN LOCOMOTIVE PROGRAM

## Locomotive fueling options

### On-Site Delivery

- Delivered from trailer direct to locomotive
- On-Site liquid or gaseous storage and dispensing

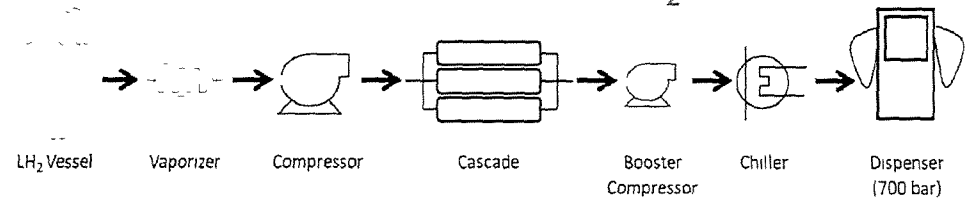
### On-Site Storage/Production

- Electrolyzer or steam-methane reformer
- Continuous supply from solar power, natural gas or electrical grid

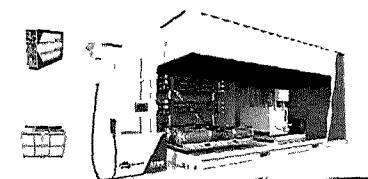
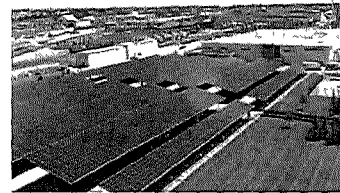
*Options provide flexibility to fuel the locomotive without requiring fixed point charging locations essentially enabling the same operating conditions we have today*



Direct to locomotive from H<sub>2</sub> trailer



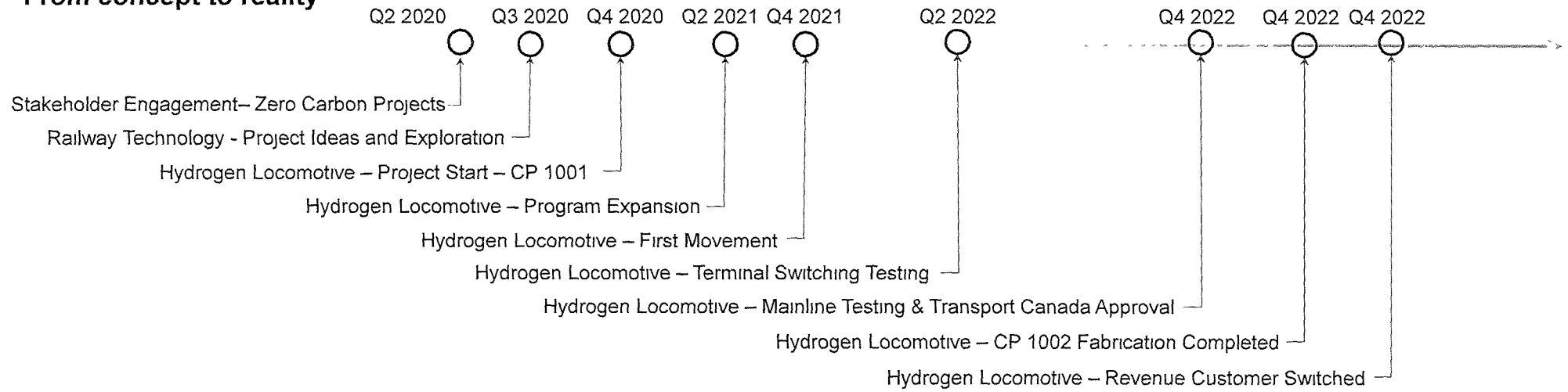
Liquified or gaseous H<sub>2</sub> storage to dispensing



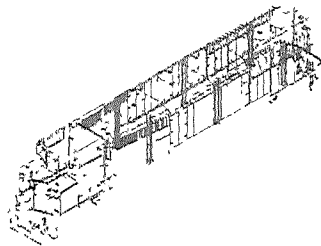
Green H<sub>2</sub> from on-site solar capability and an electrolyzer

# CPKC HYDROGEN LOCOMOTIVE PROGRAM

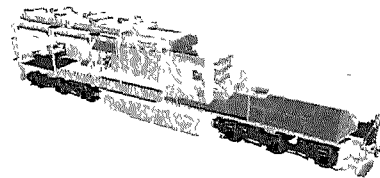
From concept to reality



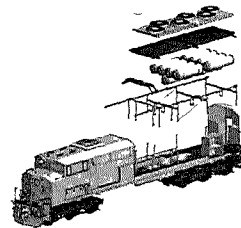
24 Months



Design



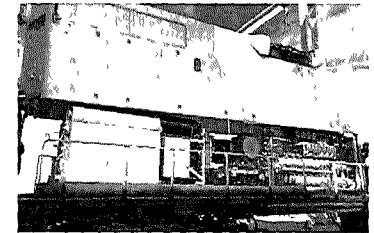
Manufacturing



Assembly



Testing

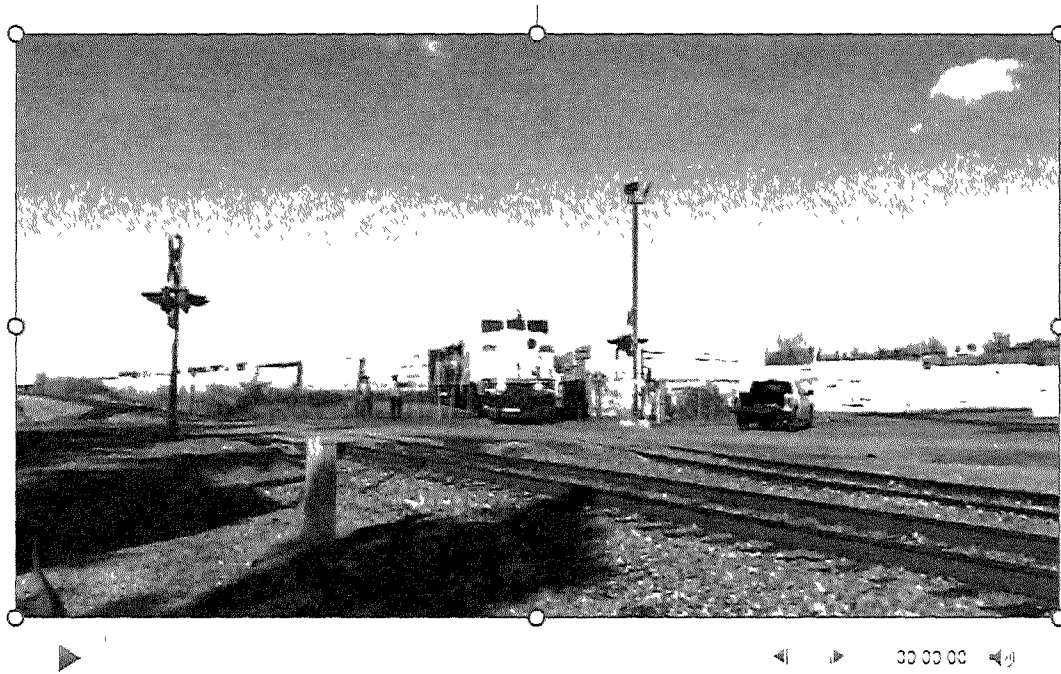


Pre-Production

---

# PHASE 1 – FIRST ZERO EMISSIONS CUSTOMER LIFT

Hydrogen DC demonstrator



# PHASE 1 – MAINLINE EXTENDED LOAD TESTING

## Testing summary

- ✓ Over 850 zero emission mainline miles achieved across 9 mainline tests
- ✓ Weekly testing in trains carrying over 20,000 tons shoving at 2350 HP
- ✓ Operation up to 50 MPH on mainline
- ✓ Revenue customer switched from North Calgary to Alyth
- ✓ Operation in extreme cold
- ✓ Draft against air brakes, "kicking" cars



# PHASE 2 – EXPANDED PROGRAM SCOPE

## Additional models

CP 1001 – SD40-2 6-Axle DC



*Fabrication complete  
field trials Jan 2022*



Government of Canada / Gouvernement du Canada  
Low Carbon Economy Fund

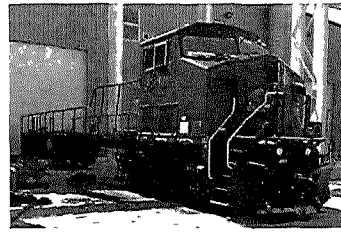
*Expanded program  
funding 2021*

CP 1002 – GP38-2 4-Axle DC



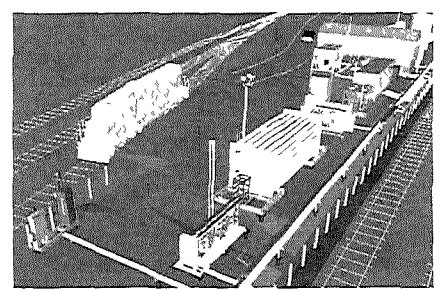
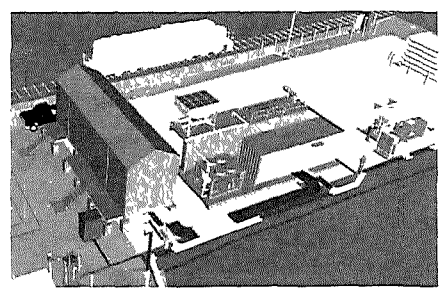
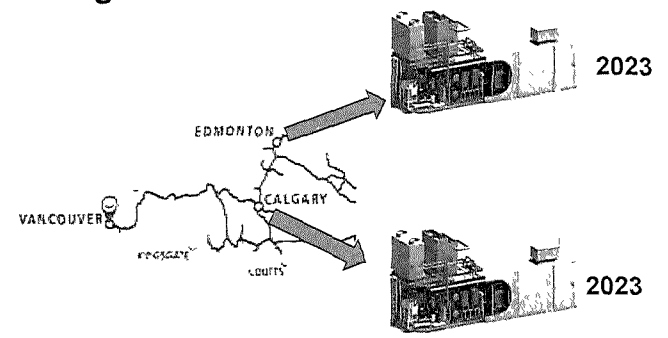
*Fabrication complete  
first movement Mar 2023*

CP 1003 – AC4400CW AC



*Fabrication in-progress*

## Fueling facilities



*Construction in-progress*



# PARTNERING FOR AN INDUSTRY SOLUTION

Industry and stakeholder engagement

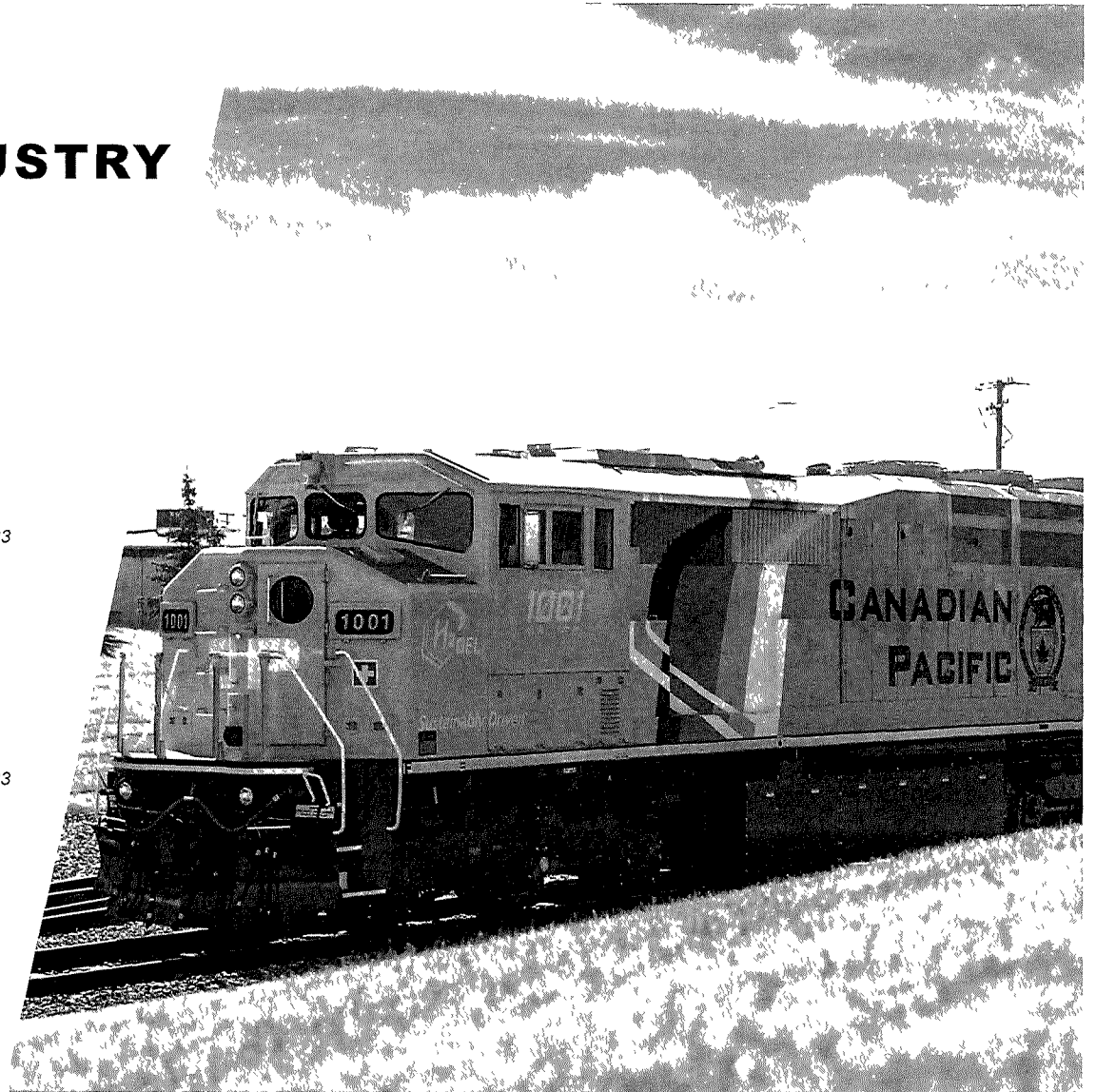
CPKC to partner with U.S. railway CSX on hydrogen locomotives

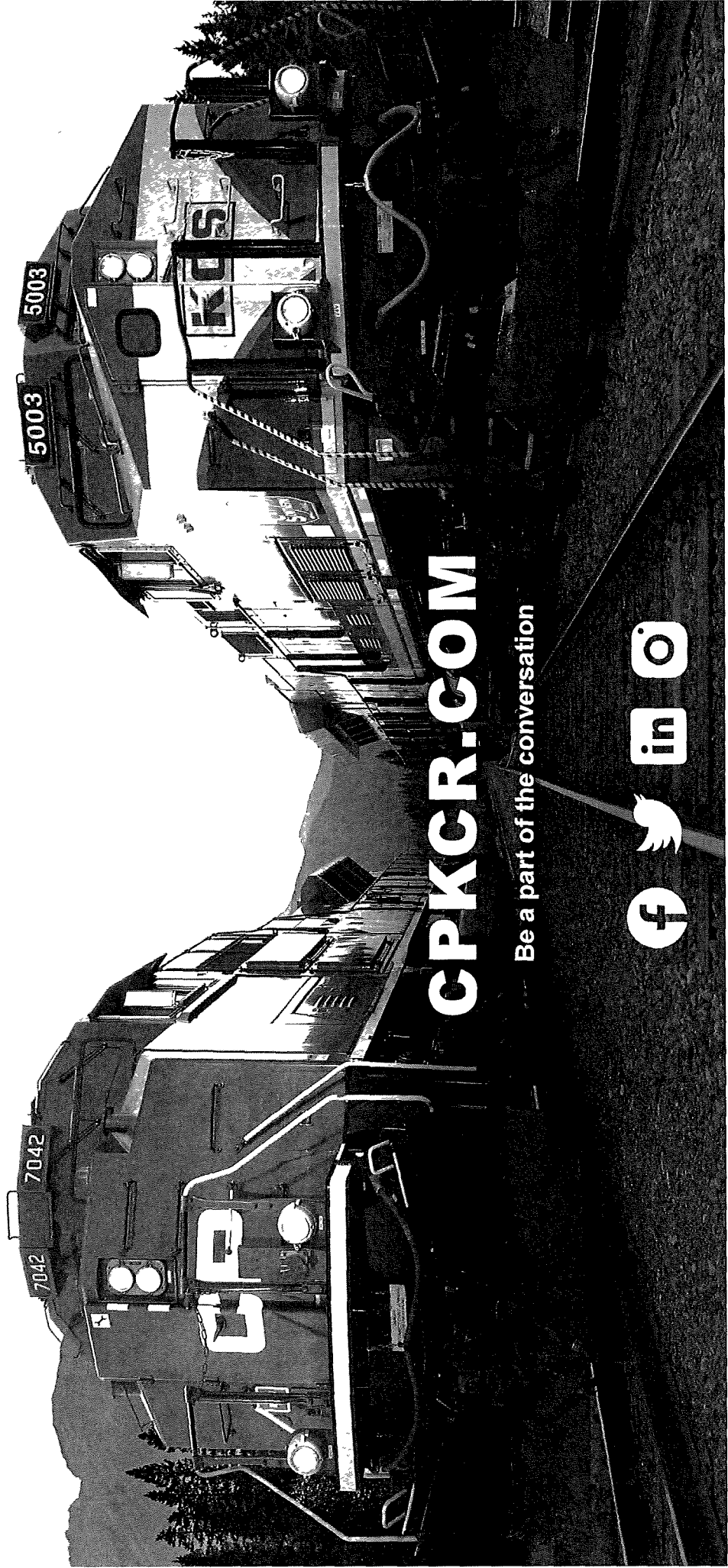
*CSX will convert one of its diesel locomotives using a hydrogen conversion kit developed by CPKC*

*Financial Post Jun 22, 2023*

CPKC, Teck Resources pilot program to use hydrogen locomotives in coal train service

*Trains.com May 2, 2023*

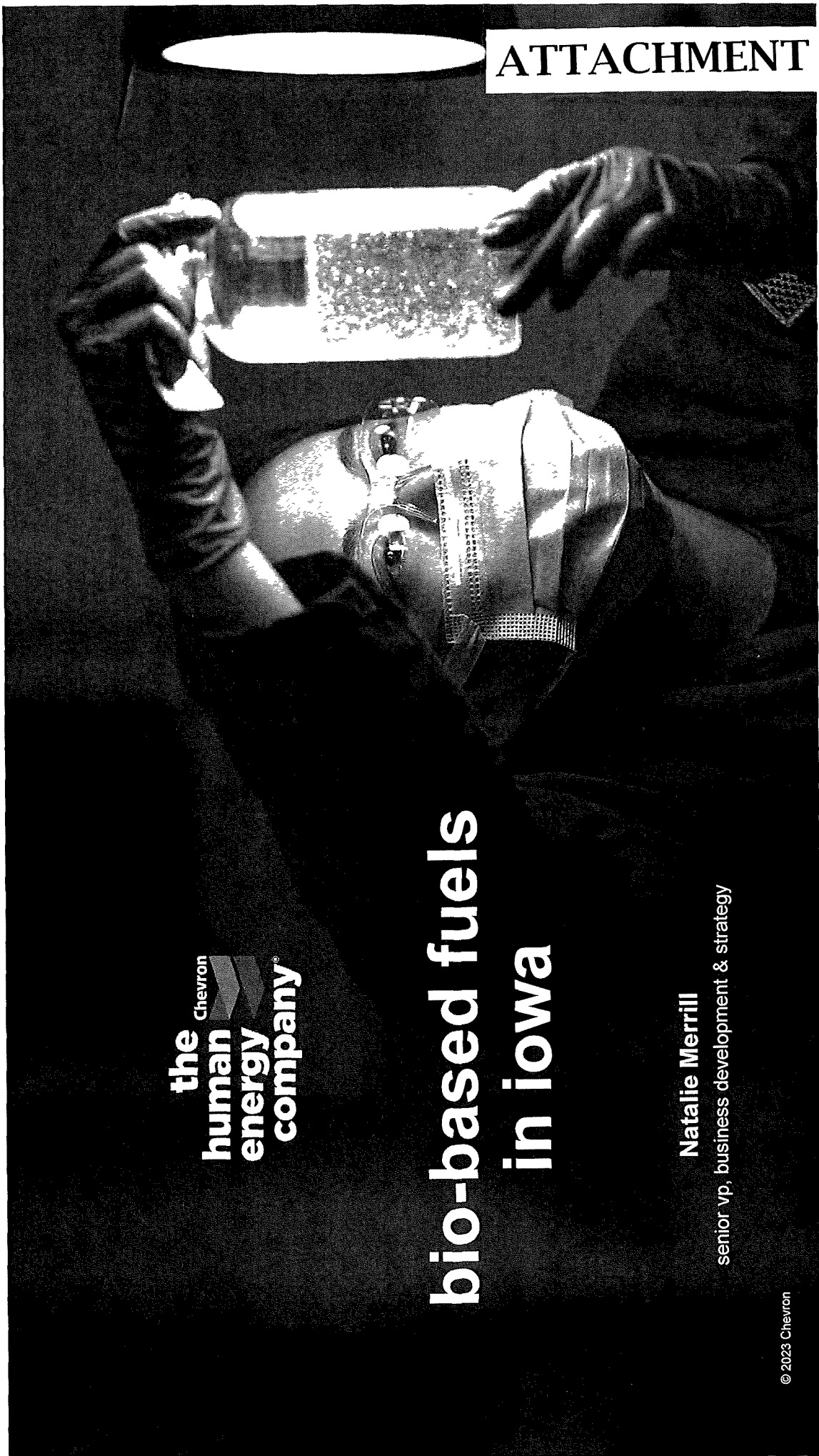




**CPKCR.COM**

Be a part of the conversation





**the** Chevron  
**human  
energy  
company**

# bio-based fuels in iowa

**Natalie Merrill**  
senior vp, business development & strategy


# about chevron renewable energy group



a business unit with a strong purpose

**fueling the energy transition  
by delivering lower carbon  
fuels today and innovating  
for tomorrow.**



 *Renewable Energy Group*

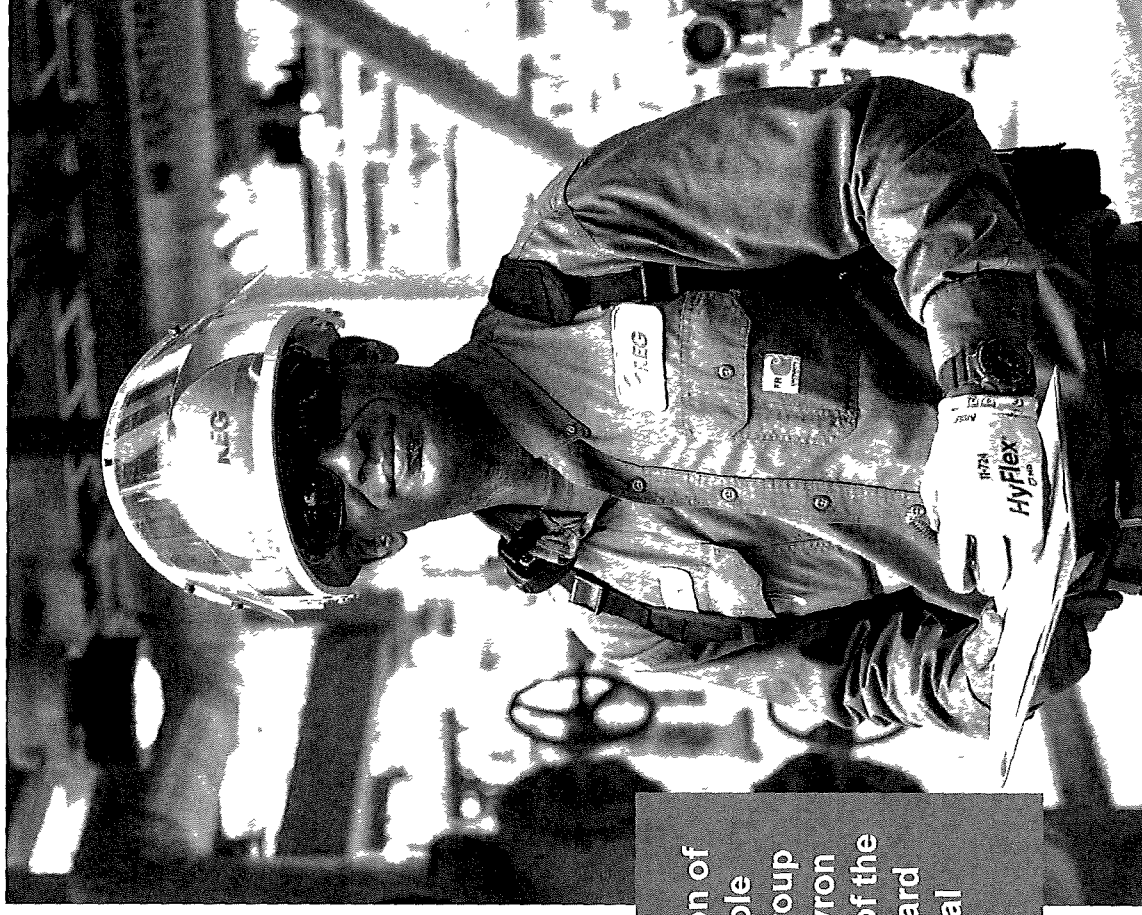


# chevron and renewable energy group are working toward a lower carbon future

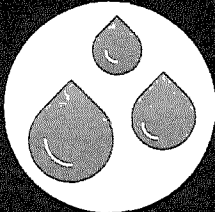
we believe  
the future of  
energy is  
lower carbon

we have a goal  
to have the  
capacity to  
produce  
100,000  
barrels/day of  
renewable  
fuels by 2030


acquisition of  
renewable  
energy group  
gets chevron  
one-third of the  
way toward  
that goal



# our story told in numbers

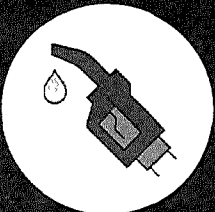


**470**  
**MMGY**  
nameplate  
production capacity

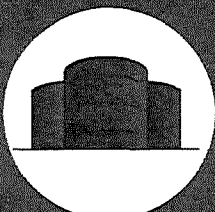


**10**  
biodiesel  
production facilities

**1**  
renewable  
diesel facility



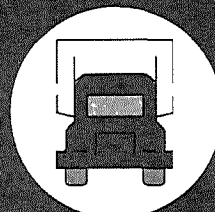
**732 mm**  
gallons sold in 2022



**12**  
terminals in California

**57**  
fuel terminals across U.S.


**7**  
international terminals



**89,000+**  
truckloads in 2022

**200+**  
water movements in 2022

**12,000+**  
railcars loaded in 2022



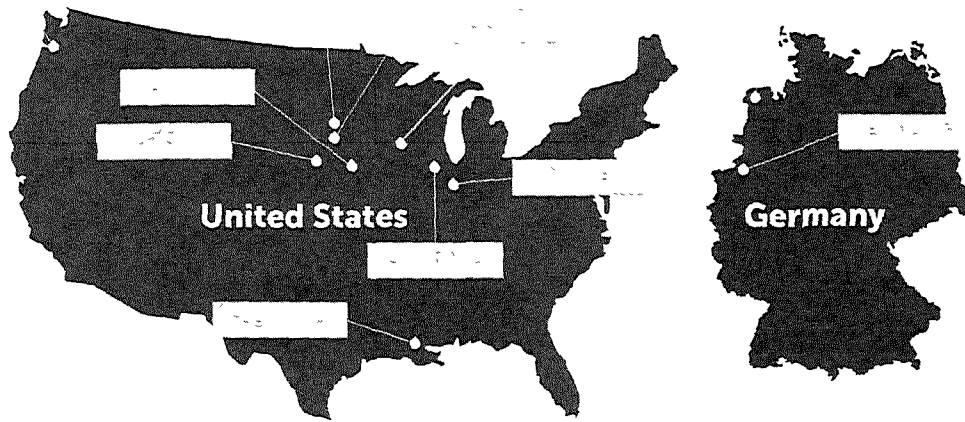
**16**  
countries product  
was sold to in 2022

**42**  
fuel states product  
was sold to in 2022

All metrics represent global business unless noted



# our energy footprint



millions of gallons sold in 2022

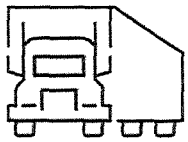
biodiesel	<b>395</b>
renewable diesel	<b>158</b>
petroleum diesel + other petroleum products	<b>179</b>
<hr/>	
total fuel sold	<b>732</b>





# industries we serve

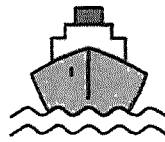
Our renewable fuel products and solutions serve a variety of industries offering high quality bio-based diesel that can help reduce carbon emissions now, without compromising performance or requiring substantial investment.



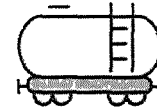
Fleets: on-road (carriers, shippers, private fleets) and municipalities



Mining



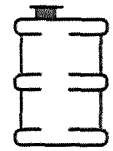
Marine



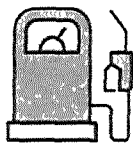
Rail



Construction



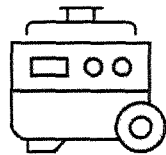
Heating Oil



Retail



Chemicals



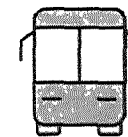
Power Generators



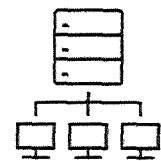
Agriculture



Emergency Services



Institutional Bus



Data Centers



# helping iowa customers reach lower carbon targets\*



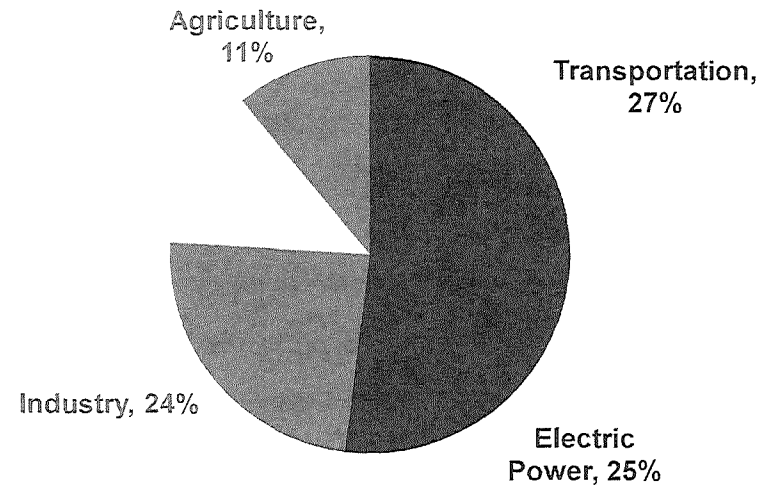
# bio-based diesel overview





# transportation is a major emitter of greenhouse gas emissions

total u.s. greenhouse gas emissions by economic sector in 2020



Source: U.S. Environmental Protection Agency (2022). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020

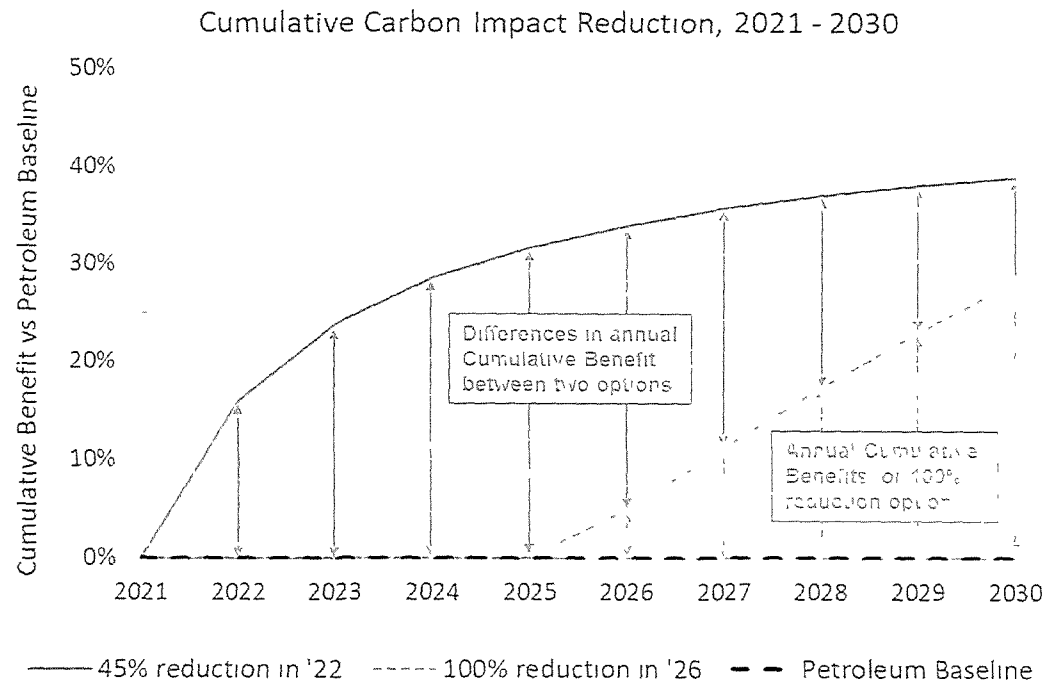
# cumulative carbon impact accounting

## cumulative benefit comparison example

**Takeaways**

Carbon impact occurs every year, not just the emission year

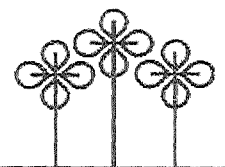
Cumulative benefit can be estimated for each year



# we have a robust portfolio of feedstocks

A stylized icon of a soybean, showing a rounded seed with a grid pattern on top and a solid dark shape on the bottom.

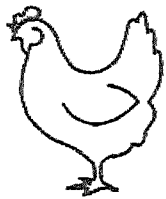
soybean oil

A stylized icon of a corn cob, showing a grid pattern on top and a solid dark shape on the bottom.

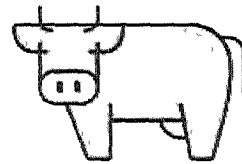
inedible corn oil

A stylized icon of a canola plant, showing three flowers on stems.

canola oil



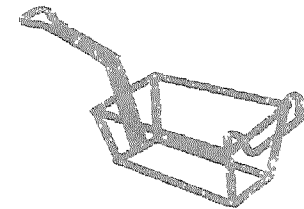
poultry fat



beef tallow



pork lard



used cooking oil

# cover crops

seed



cultivation



harvesting



processing



lipid feedstock

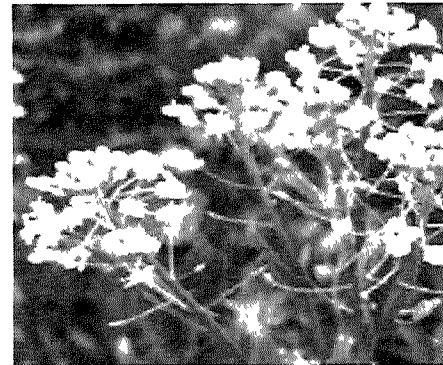


BUNGE

CORTEVA  
agriscience



Renewable Energy Group



BUNGE

CoverCress



Renewable Energy Group



# benefits of bio-based diesel fuels

## renewable diesel - paraffinic fuel

### reduced engine emissions

- NOx, carbon monoxide, particulate matter,
- contains virtually no sulfur

### can be blended at virtually any level with diesel and BD

- some equipment manufacturers have a 50% maximum RD inclusion currently
- effectiveness of blending in biodiesel helps mitigate the loss of additive compatibility, elastomer compatibility, density and freezing point that straight RD is known for

### exceptional combustion quality

- cetane number is greater than 65 (Federal diesel spec limit is 40)

### desirable cloud point

- cloud point typically less than -10 °C, winter pipeline spec limits for diesel are around -10 °C

## biodiesel - oxygenated fuel

### reduced engine emissions

- sulfur, carbon monoxide, hydrocarbons and particulates
- oxygen in fuel molecules helps the engine burn fuel more completely; less exhaust as hydrocarbons or soot

### can be blended at virtually any level with diesel and RD

- 20% is a common blend level
- Higher quality BD performs better in blends with RD

### enhanced lubricity

- Excellent for ULSD and renewable diesel
- No lubricity additives needed with B2 or higher blends

### safety requirements for transport and handling of B100 are comparable to vegetable oil



# iowa policy



## current policy overview

- Iowa is the #1 state in biodiesel production, and #2 in soybean production
- In May 2022, Iowa Governor Kim Reynolds signed the “Governor’s Biofuels Access Bill” which expanded access to biofuels and created the first B30 incentive in the nation

## biodiesel incentives

- Doubles biodiesel production tax credit to \$0.04/gal, increases cap to \$1 million per facility, sunsets 2027
- Changes fuel tax differential from B11 to B20, sunsets 7/1/2030
- Codifies requirement that state of Iowa procure B20-compliant diesel fleet vehicles (from 2019 Governor’s executive order)
- New biodiesel tax structure.
  - B5-B10 \$0.035/gal, sunsets Dec 31, 2023
  - B11+ \$0.05/gal, sunsets Dec 31, 2027
  - B20 \$0.07/gal, sunsets Dec 31, 2027
  - B30 \$0.10/gal, sunsets Dec 31, 2027 (first in the U S )

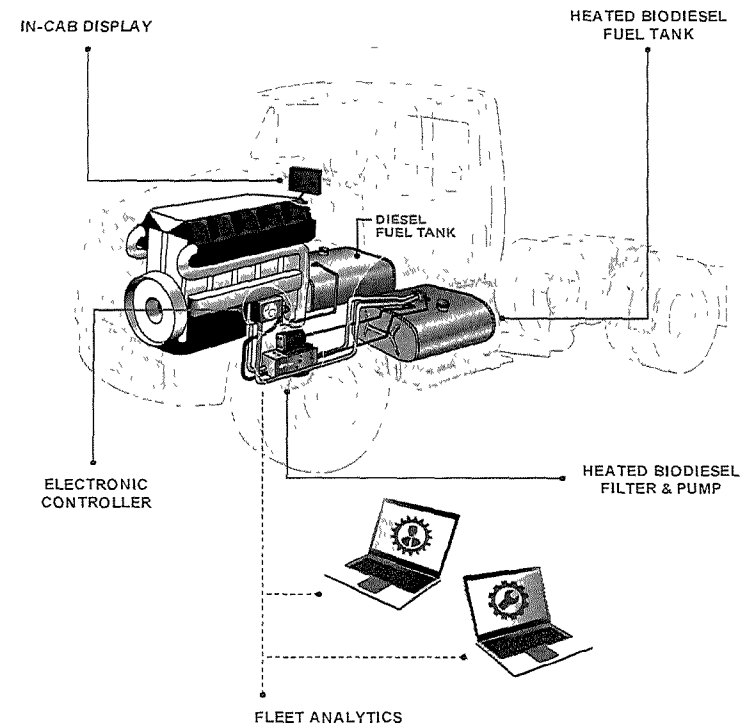
# optimus b100 technical overview

Optimus System enables virtually any existing diesel engine to operate on 100% biodiesel, including DPF- and SCR-equipped engines.

system includes a second heated fuel tank and an in-cab display

startup and shutdown always occurs on diesel

available as retrofit for existing engines



# national impact of chevron renewable energy group's iowa plants

Iowa locations support approximately



in this state

## 2022 NATIONAL IMPACT:

Over

# 700M

POUNDS OF  
FEEDSTOCK USED IN  
IOWA PLANTS

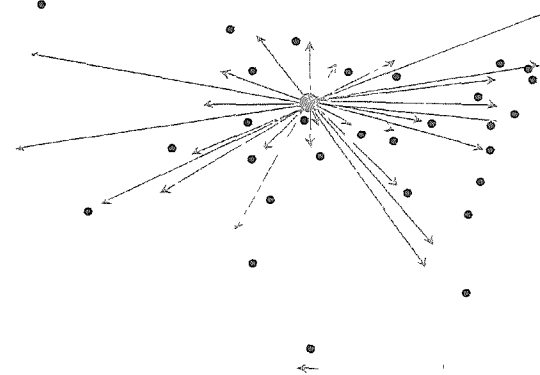
Purchased from nearly 230  
locations resulting in over  
\$522 million of added value  
to the nation's economy

Over

# 84M

GALLONS OF  
BIODIESEL  
PRODUCED

Delivered to nearly 445  
locations nationwide



In 2022, **24,804**  & **2,958**  went through plants in Iowa.

**questions?**



**thank you.**

Natalie Merrill, Senior VP – Business Development & Strategy

phone 515.567 0232    [Natalie.Merrill@chevron.com](mailto:Natalie.Merrill@chevron.com)

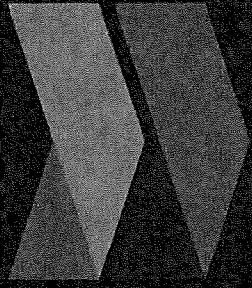
[www.regi.com](http://www.regi.com)

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**the  
human  
energy  
company<sup>®</sup>**

**Chevron**



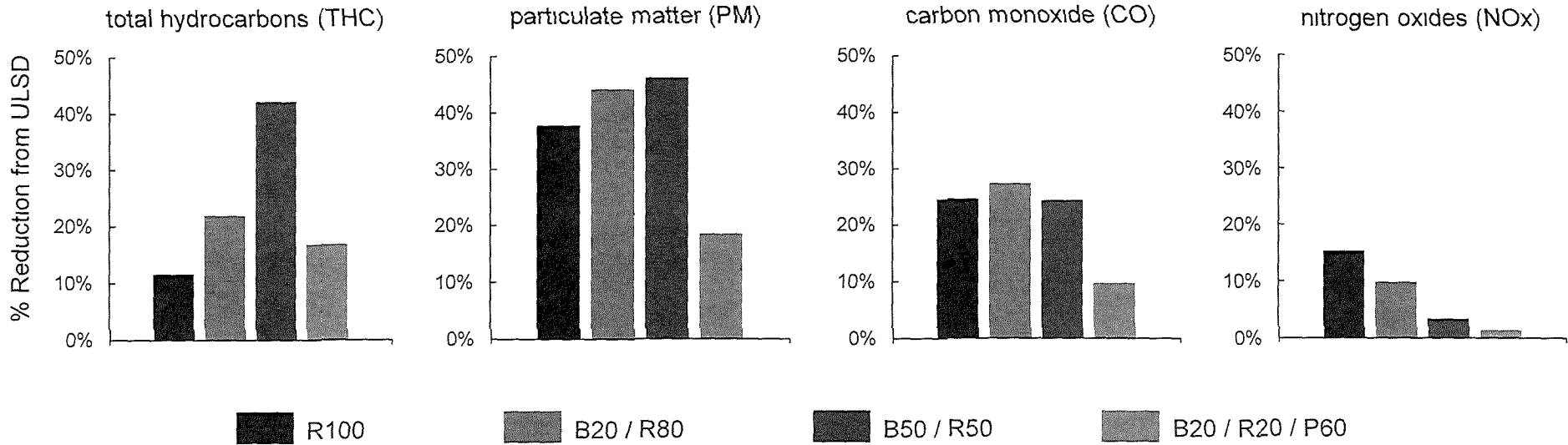
<sup>®</sup>

## renewable diesel production samples

left: crude feedstock  
middle: hydrocarbons  
after hydrotreating  
right: finished (isomerized)  
renewable diesel



# engine emissions reductions (CARB data)



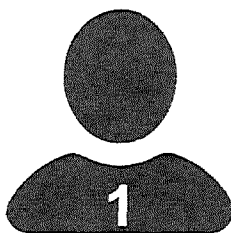
Source: Chevron Renewable Energy Group charts based on California Air Resources Board assessments compared to federal ULSD





# consumer choice for maximum fossil carbon reductions

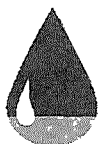
CUSTOMER



WANTS:

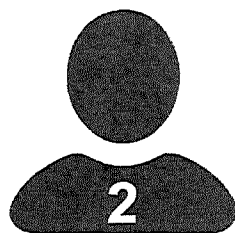
100% renewable;  
lower Cloud Point

SOLUTION:



R80  
B20

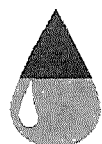
CUSTOMER



WANTS:

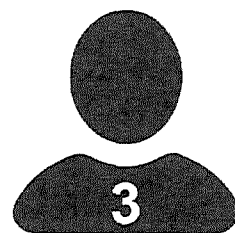
100% renewable,  
better economics  
& supply

SOLUTION:



R50  
B50

CUSTOMER



WANTS:

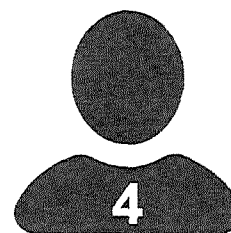
40% renewable,  
good economics;  
lowest Cloud Point

SOLUTION:



P60  
R20  
B20

CUSTOMER



WANTS:

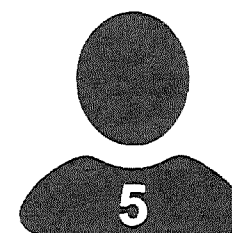
100% renewable,  
best economics

SOLUTION:



B100

CUSTOMER



WANTS:

≥ 20% renewable;  
good economics &  
supply

SOLUTION:



P80  
B20+

# Enoura Fuels™

## Infini

### Biodiesel

- Oxygenated fuel with lower CI than petroleum diesel
- Can improve combustion quality and reduce engine emissions

## Puri

### Ultra Biodiesel

- Exceed ASTM, CEN and CGSB biodiesel quality requirements
- Cold flow properties that enable similar operation as petroleum diesel

## Veloci

### Renewable Diesel

- Ultra-high Cetane number hydrocarbon renewable fuel that can serve as a direct replacement to petroleum diesel

## UltraClean Blend

### Renewable Diesel + Biodiesel

- Combination of VelociD™ and PuriD™
- One of the lowest overall engine emissions

## Beyond

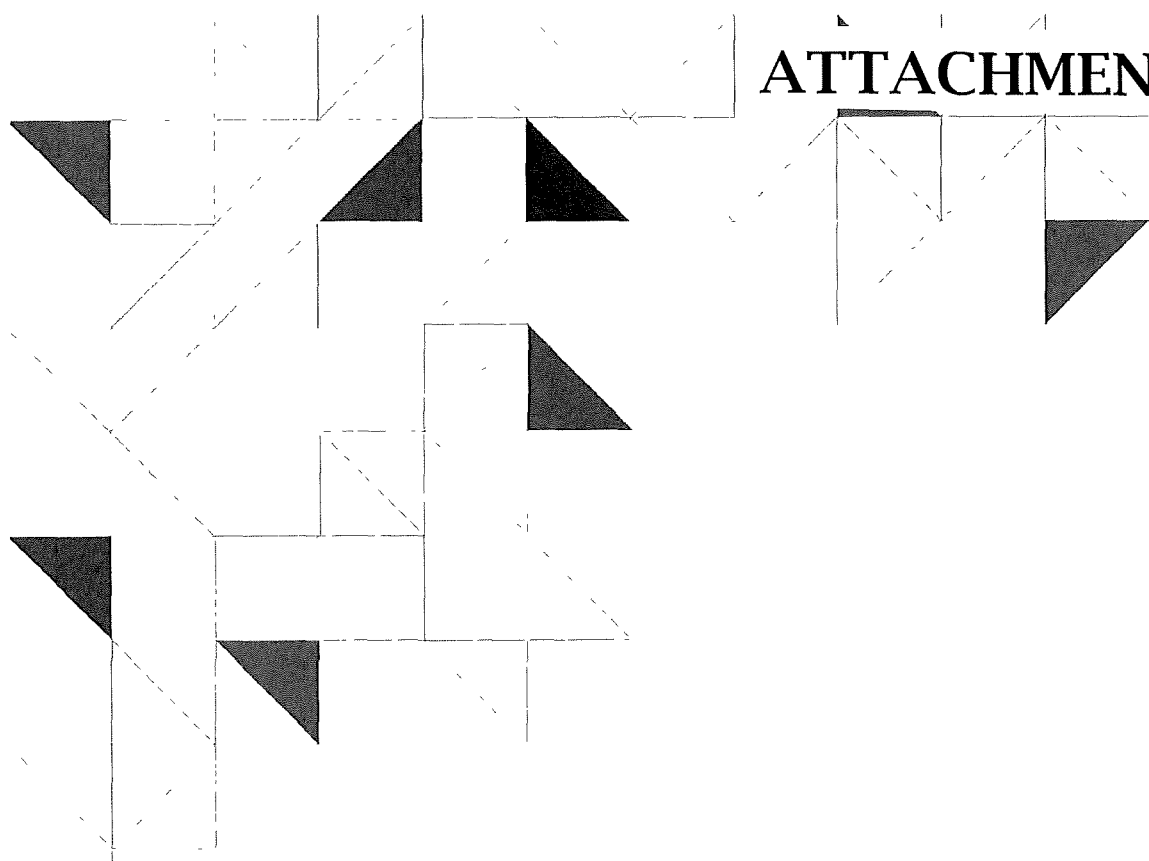
### Sustainable Aviation Fuel

- Produced with no fossil carbon, allowing notable reductions in direct aircraft fossil carbon emissions on a lifecycle basis<sup>1</sup>

LGO

**A complete line of fuel solutions to help companies work toward lower carbon targets**





# Iowa Energy Center Board

**Kelcey Brown**

President and CEO



# Our Commitment to You

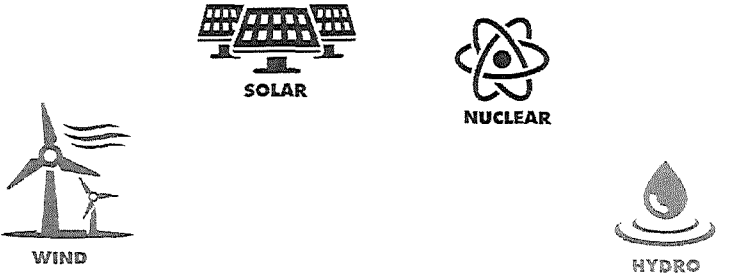
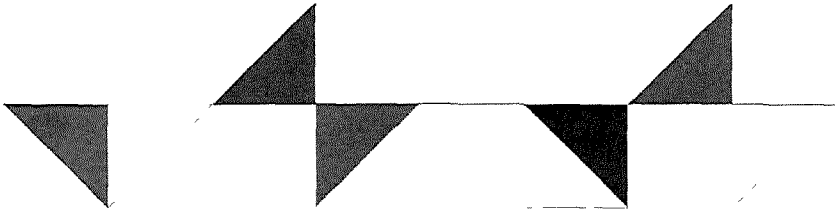
**Destination Net Zero**



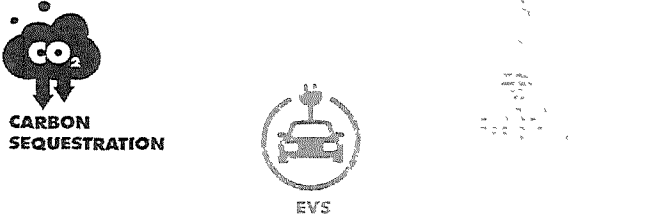
**Reliable**

**Sustainable**

**Affordable**



ALL OF THE **ABOVE**

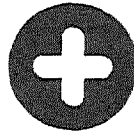


# Renewable Equation

MIDAMERICAN'S RENEWABLE ENERGY  
**EQUATION**

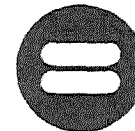
**TODAY**

**7,300 MW**  
Renewable Energy



**WIND PRIME**

**2,092 MW**  
Renewable Energy



100% renewable energy  
delivered to customers



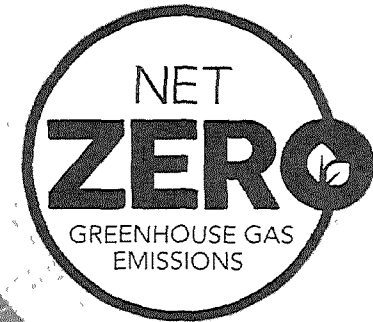
Reduction in carbon emissions

Rate stability

Keeping rates low

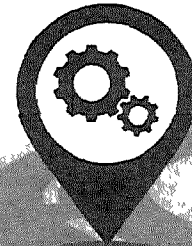
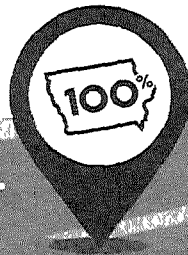
# DESTINATION **NET ZERO**

**New Technologies  
and Innovations**



**100% Renewable Energy Vision**

**2021 GreenAdvantage ~ 88.5%**

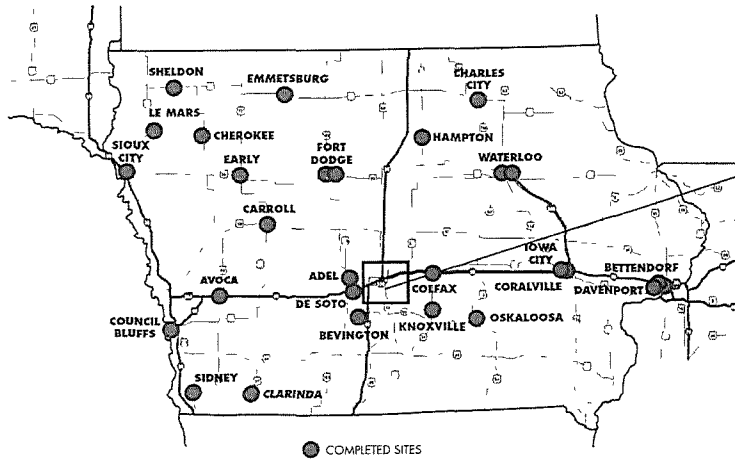
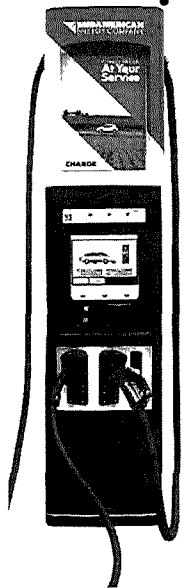


**Transmission Infrastructure**

# Leading the Charge

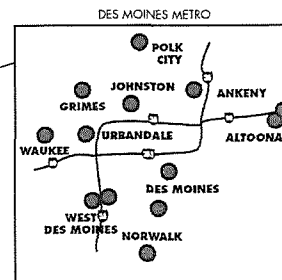
## Statewide Charging Network

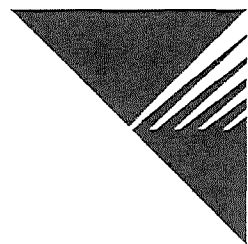
- Created a charging network around Iowa to support EV growth
  - 41 chargers are available around the state with 9 more under development
  - Each charger can generally charge an EV in 20-45 minutes
  - Charging costs are determined by site hosts



## MidAmerican's Electric Fleet

- Three EV bucket trucks just placed in service
  - Can drive up to 135 miles on a full charge and operate hydraulic equipment for a full day's range of work
  - The truck's aerial lift and bucket lifts crews up to 55 feet
  - Separate battery sources for vehicle and lift mechanisms
- The fleet includes more than 130+ vehicles that are partially or totally electrified





# MIDAMERICAN ENERGY COMPANY

Obsessively, Relentlessly **At Your Service**<sup>®</sup>







**SSAB**

*A stronger,  
lighter and more  
sustainable world*

Prepared for the Iowa Energy Center Board

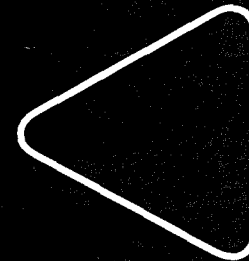
August 10, 2023

**ATTACHMENT H**

**SSAB**



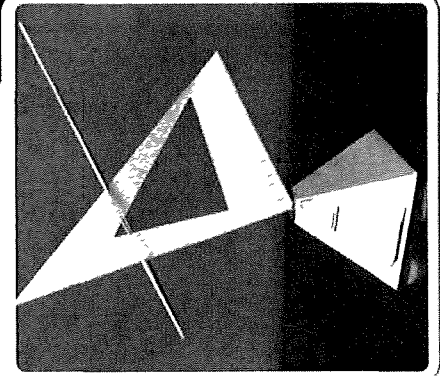
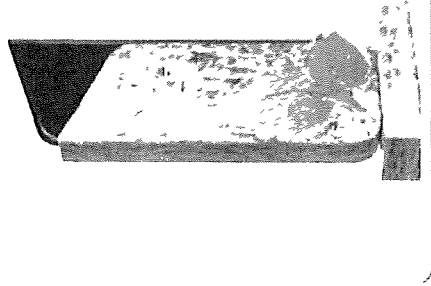
# SSAB leads industry in North America



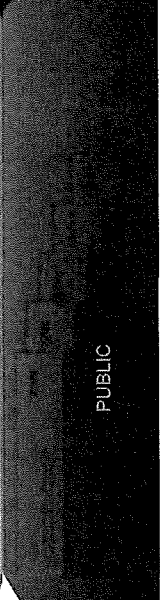
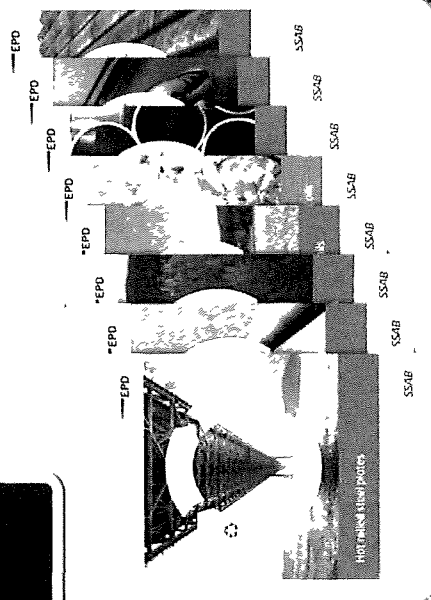
Market-leading North American producer of quality steel plate and coil

**SSAB**

PUBLIC



# Delivering on the SSAB Sustainability Advantage





# Delivering on Iowa's Sustainability Advantage

SSAB's activities to eliminate emissions related to fossil fuels

- 1 ENERGY EFFICIENCY:**  
The first step is to improve energy efficiency across our operations in order to reduce the amount of energy needed.
- 2 USE OF ELECTRICAL ENERGY:**  
SSAB strives to enhance energy efficiency, including transition from fossil fuel energy to electrical energy. The benefit in CO<sub>2</sub>e reduction depends on the use of renewable electrical energy, of which SSAB is focused on achieving a significant share.
- 3 ALTERNATIVE FUEL USE:**  
Investigate the utilization of Renewable Natural Gas (RNG) or biogas as a fuel supplement and/or replacement for natural gas.
- 4 REPLACE OTHER FOSSIL BASED RAW MATERIALS:**  
Introducing alternate raw materials to further reduce CO<sub>2</sub>e directly at the source.

PUBLIC

**SSAB**



**Countdown to Zero™**  
**SSAB Zero™ is now here!**

PUBLIC

**SSAB**

10

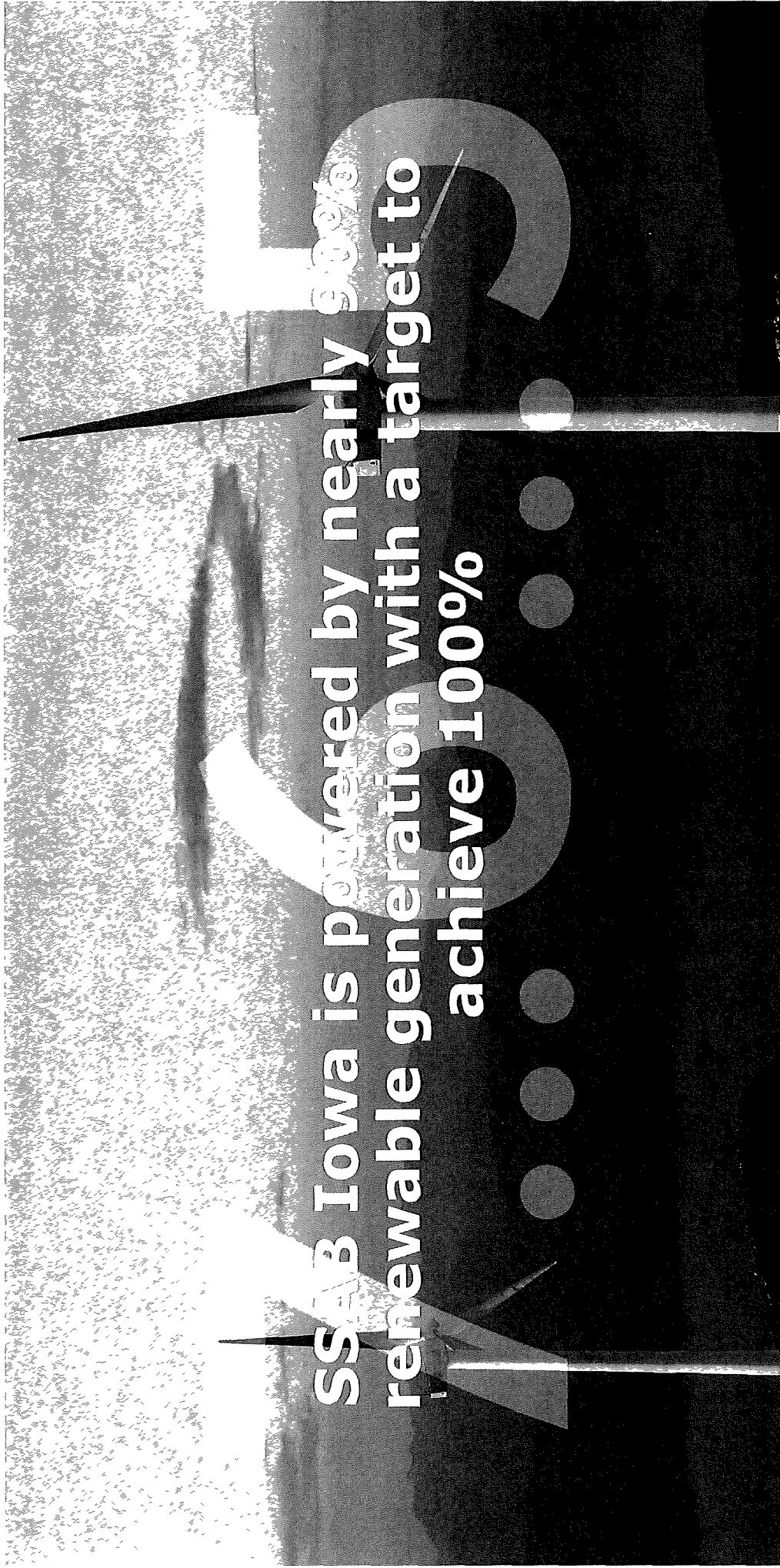
Steel made from 97% recycled content

SSAB scrap recovery program

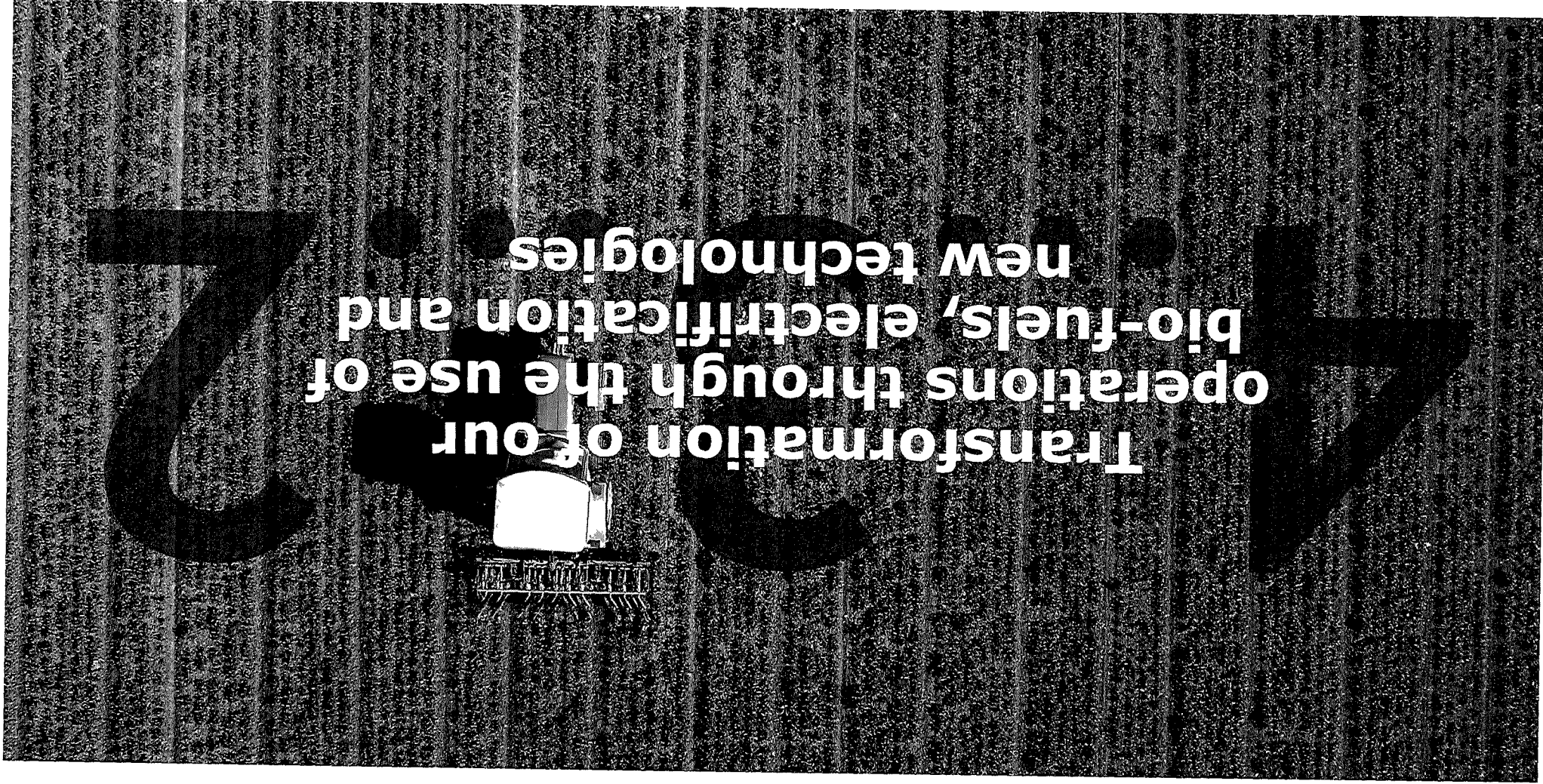
8

SSAB

Public



**SSAB Iowa is powered by nearly 90%  
renewable generation with a target to  
achieve 100%**



**Transformation of our  
operations through the use of  
bio-fuels, electrification and  
new technologies**







**SSAB Zero™ steel in your  
products**

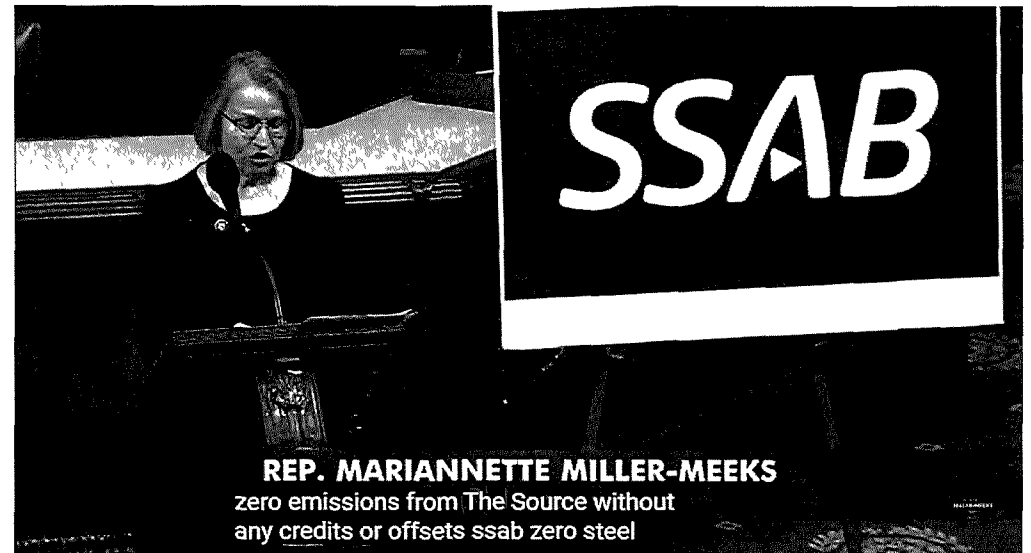
# SSAB Zero™: Made in Iowa

“SSAB shows what it looks like to operate on the cutting edge of this industry, and Iowa could not be prouder to play host and be a part of that.”  
-Governor Kim Reynolds



“We are proud to have such an innovative company pursuing climate neutral solutions in Iowa; and we wish them the very best as they continue to lead the steel industry.”

- Congresswoman Mariannette Miller-Meeks



Rep. Miller-Meeks Recognizes SSAB Steel on the House Floor

PUBLIC

**SSAB**

**We're already  
leading the industry...**

**SSAB demonstrates  
fossil free steel at  
pilot level**

**2016**

**SSAB debut's  
world's first zero  
emissions steel**

**2023**

**?**

**2026**

**...and there is a lot  
more to come!**

**SSAB**

Public

SSAB  
**ZERO**<sup>®</sup>  
STEEL

SSAB

PUBLIC

***verbio***

*Biofuel and Technology*

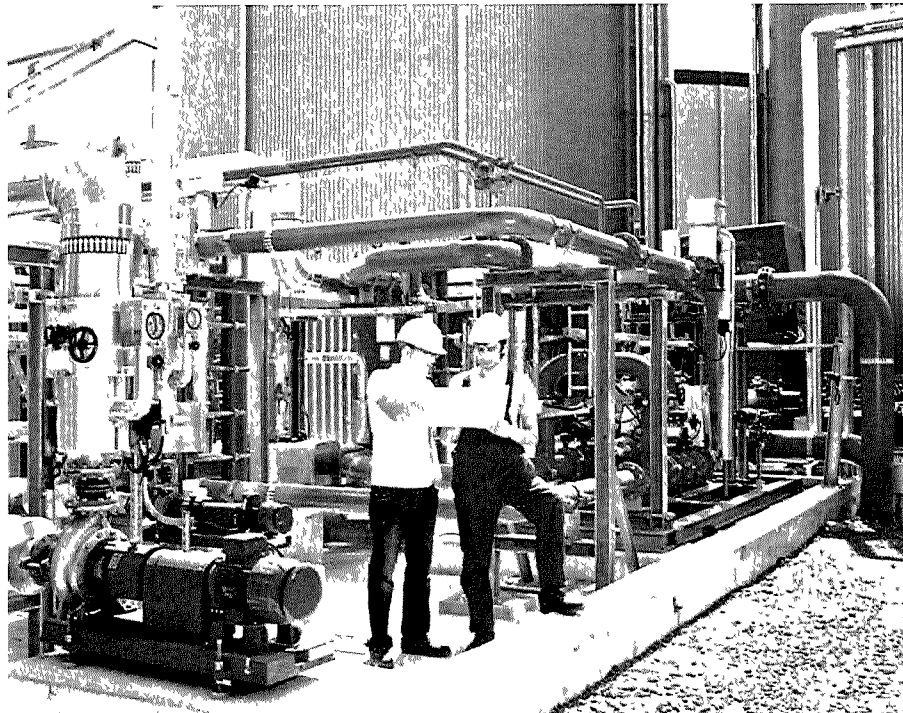
**ATTACHMENT I**

**Iowa Energy Center  
Advancing Renewables  
Greg Northrup**

**August 10, 2023**

VERBIO is a leading independent bioenergy producer in Europe. VERBIO manufactures biofuels, feed, bio-fertilizers as well as high-quality ingredients for the pharmaceutical, cosmetics and foodstuffs industries.

Furthermore, VERBIO operates affiliate companies in Poland, Hungary, India, USA and Canada.



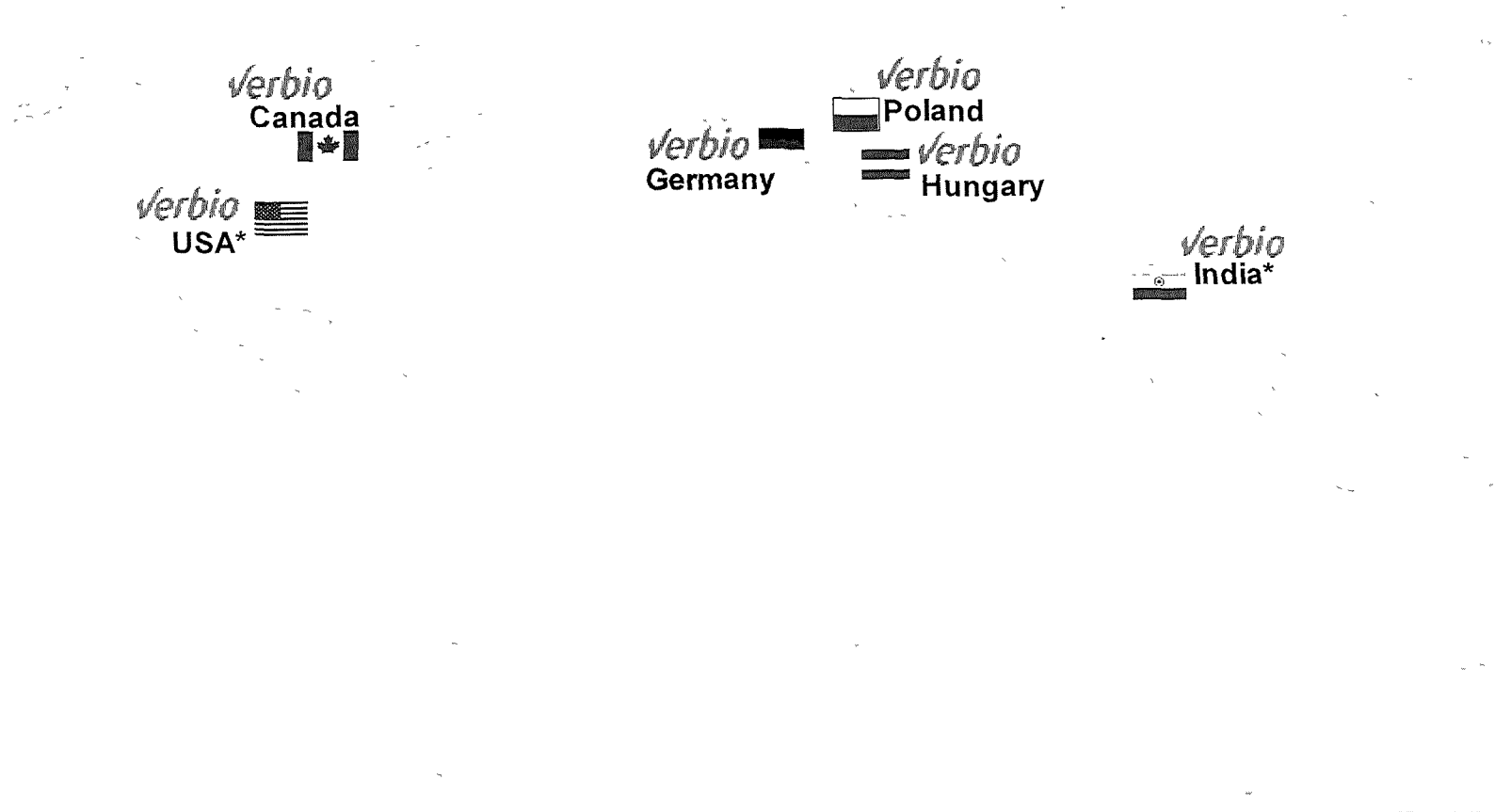
## Facts & Figures

- 2006: Foundation and IPO
- Turnover FY 2021/22: \$1.65 billion
- EBITDA FY 2020/21: \$200 million
- EBITDA FY 2021/22: \$500 million
- Employees: 900+
- World's largest biomethane producer
- Biomethane from 100% crop residues and agricultural wastes

## Installed capacities (per year)

<i>verbiodiesel</i>	200,000,000 gal
<i>verbioethanol</i>	87,000,000 gal
<i>verbioogas</i>	3,000,000 MMBtu

## VERBIO goes global

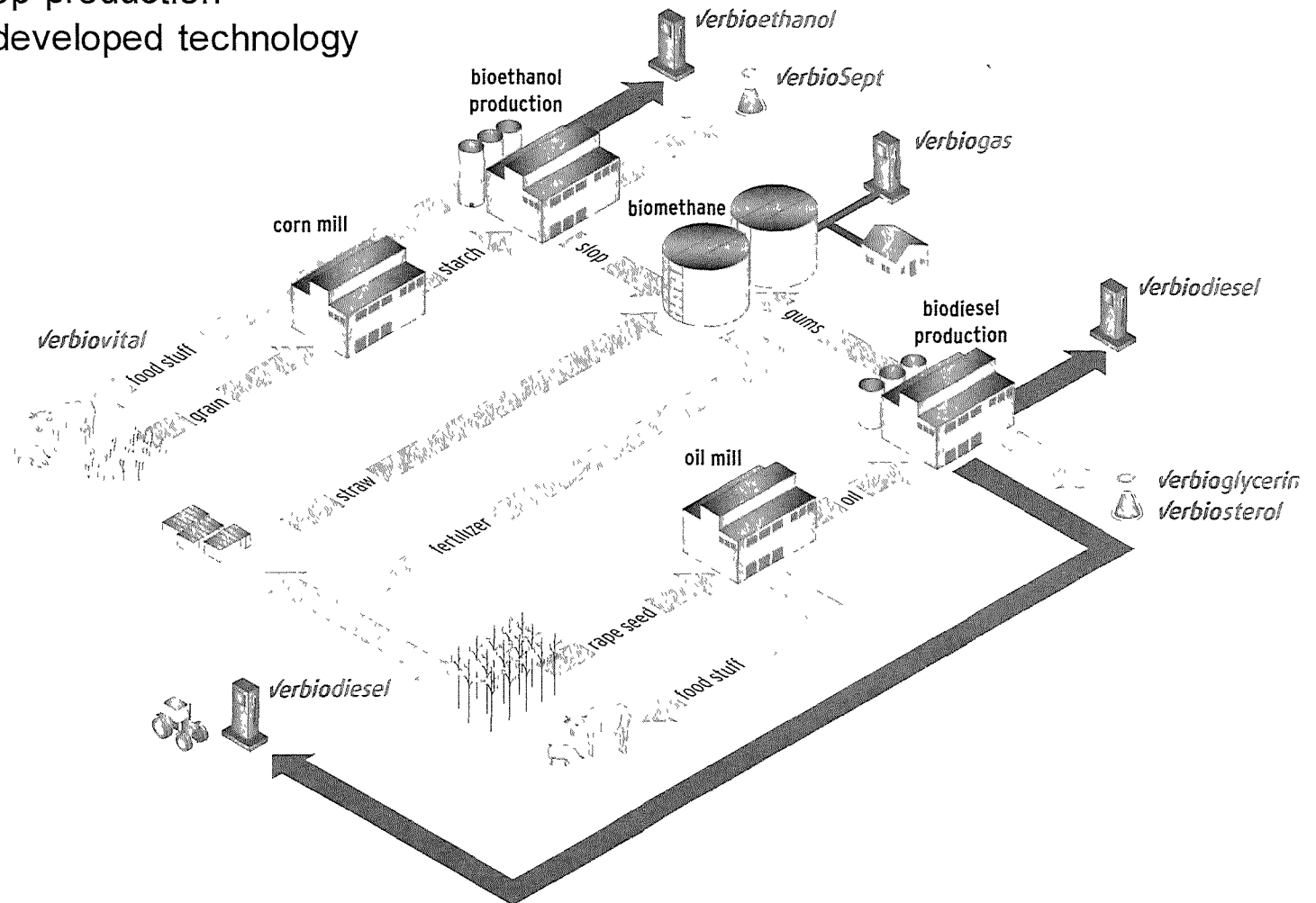


\* production facilities under construction



## Unique VERBIO production layout

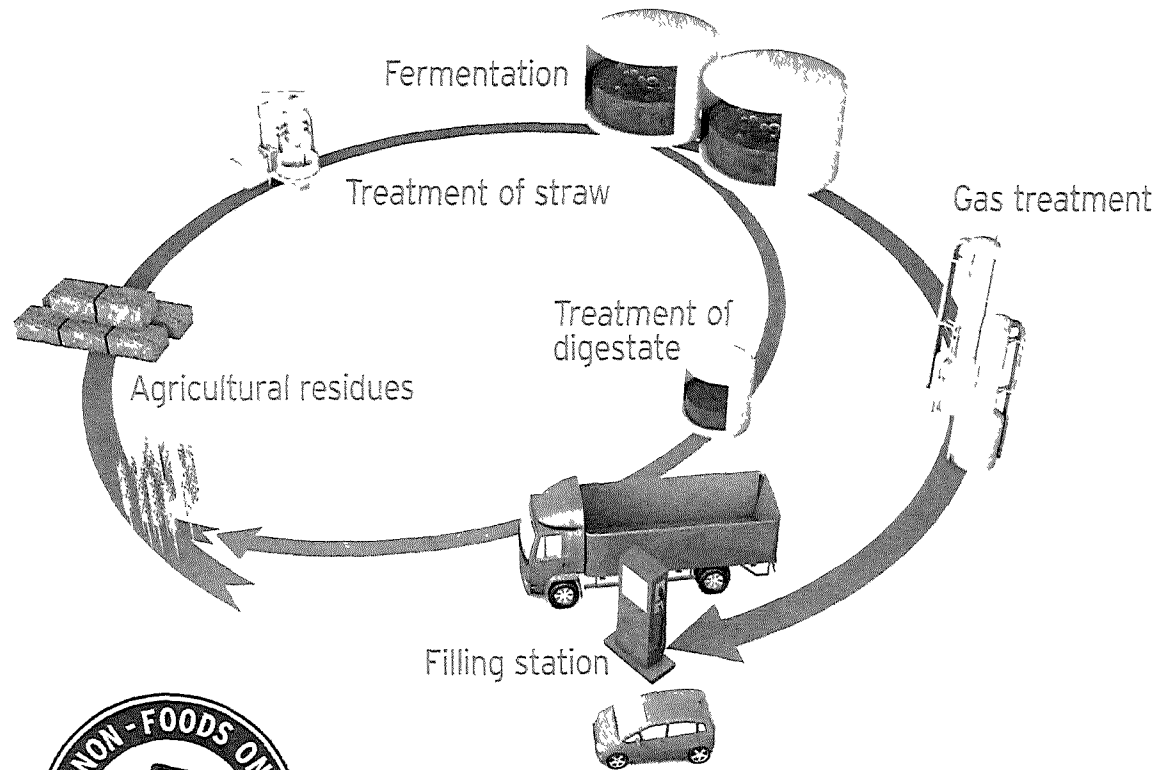
- Closed-loop production
- In-house developed technology



# Verbiogas from straw/stover

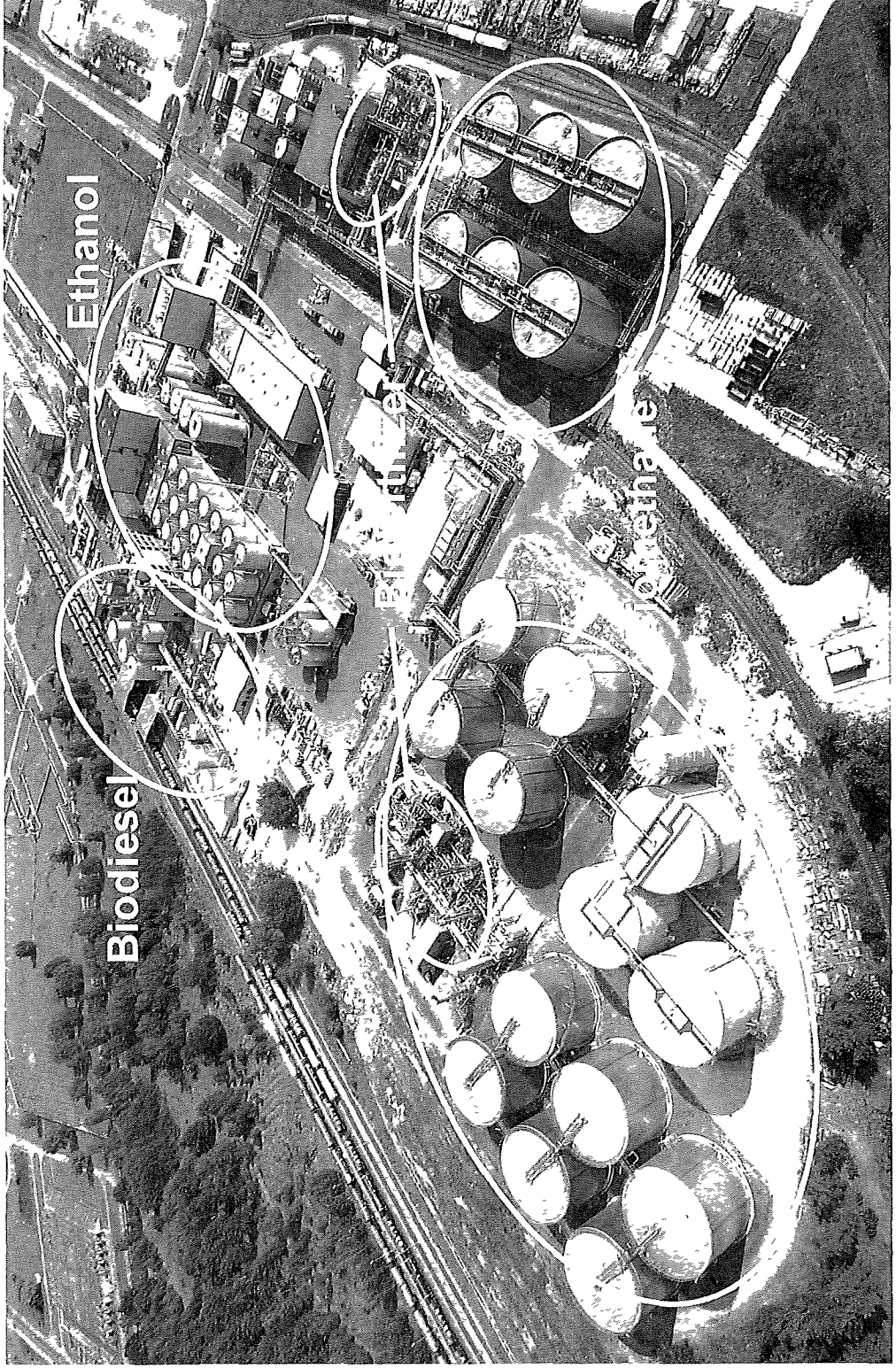
**Verbio**  
Biofuel and Technology

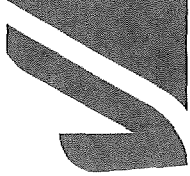
First worldwide and large scale technology developed by VERBIO



Co-funded by the NER 300 programme of the European Union

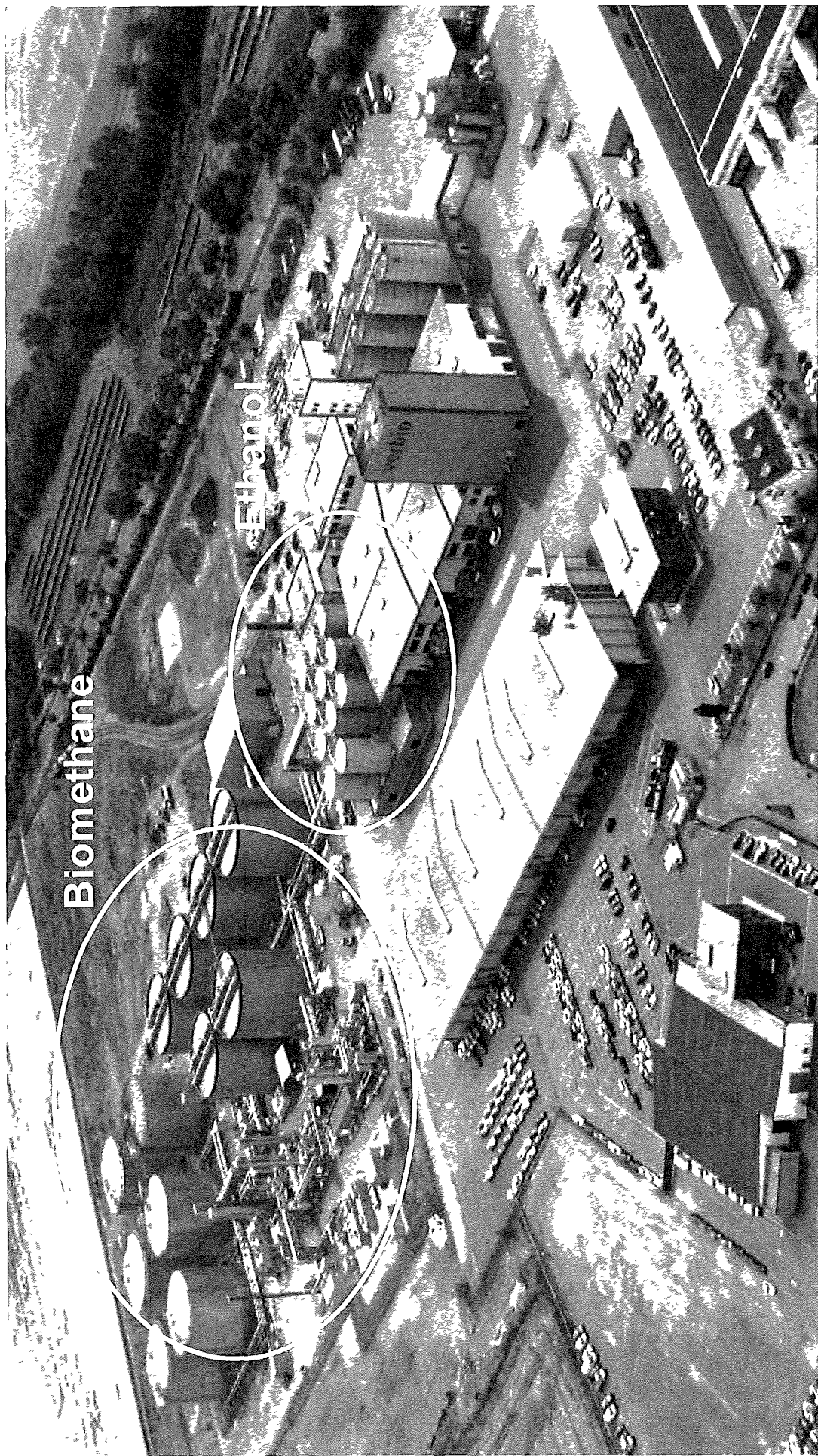
**World's largest biorefinery!**

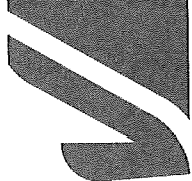




# VERBIO Zoerbig (Germany)

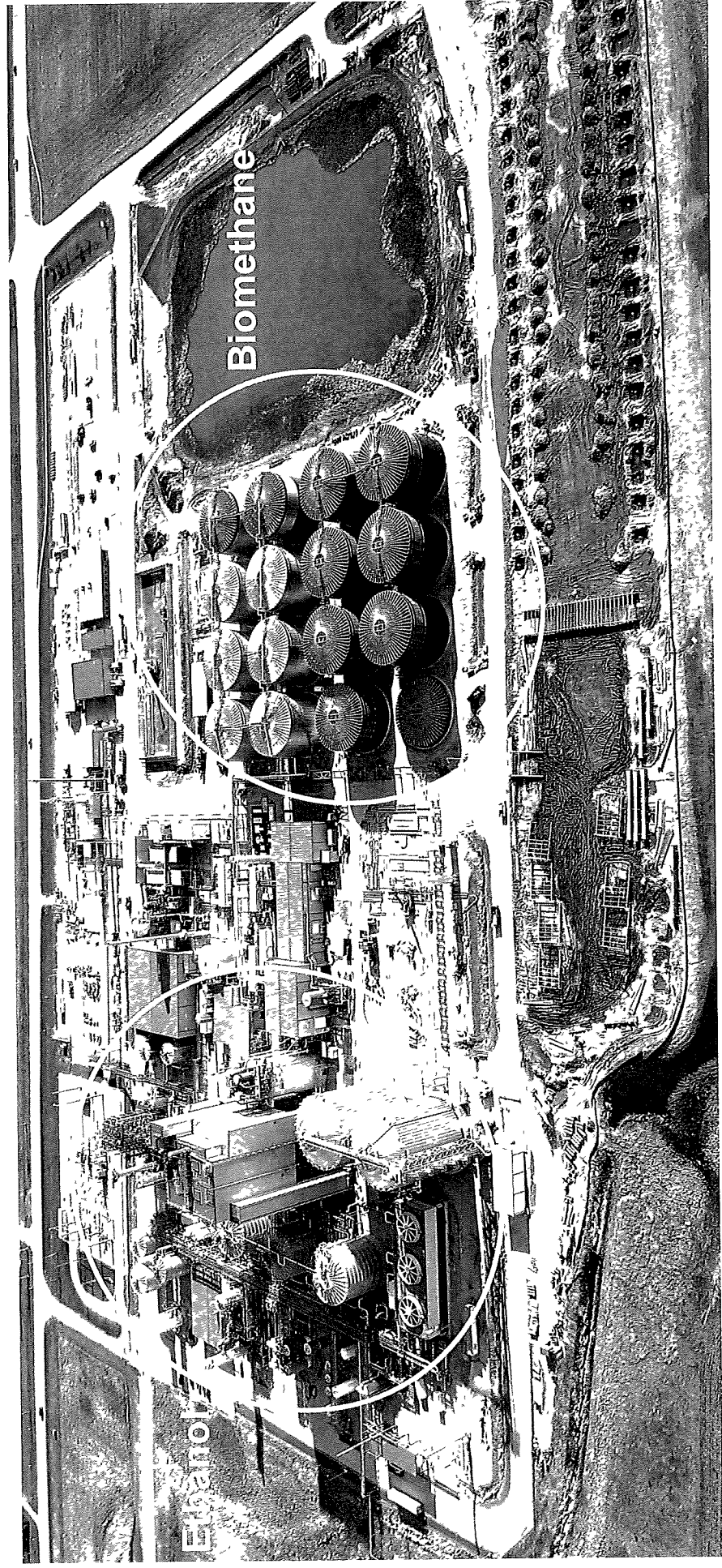
**Verbio**  
Biofuel and Technology





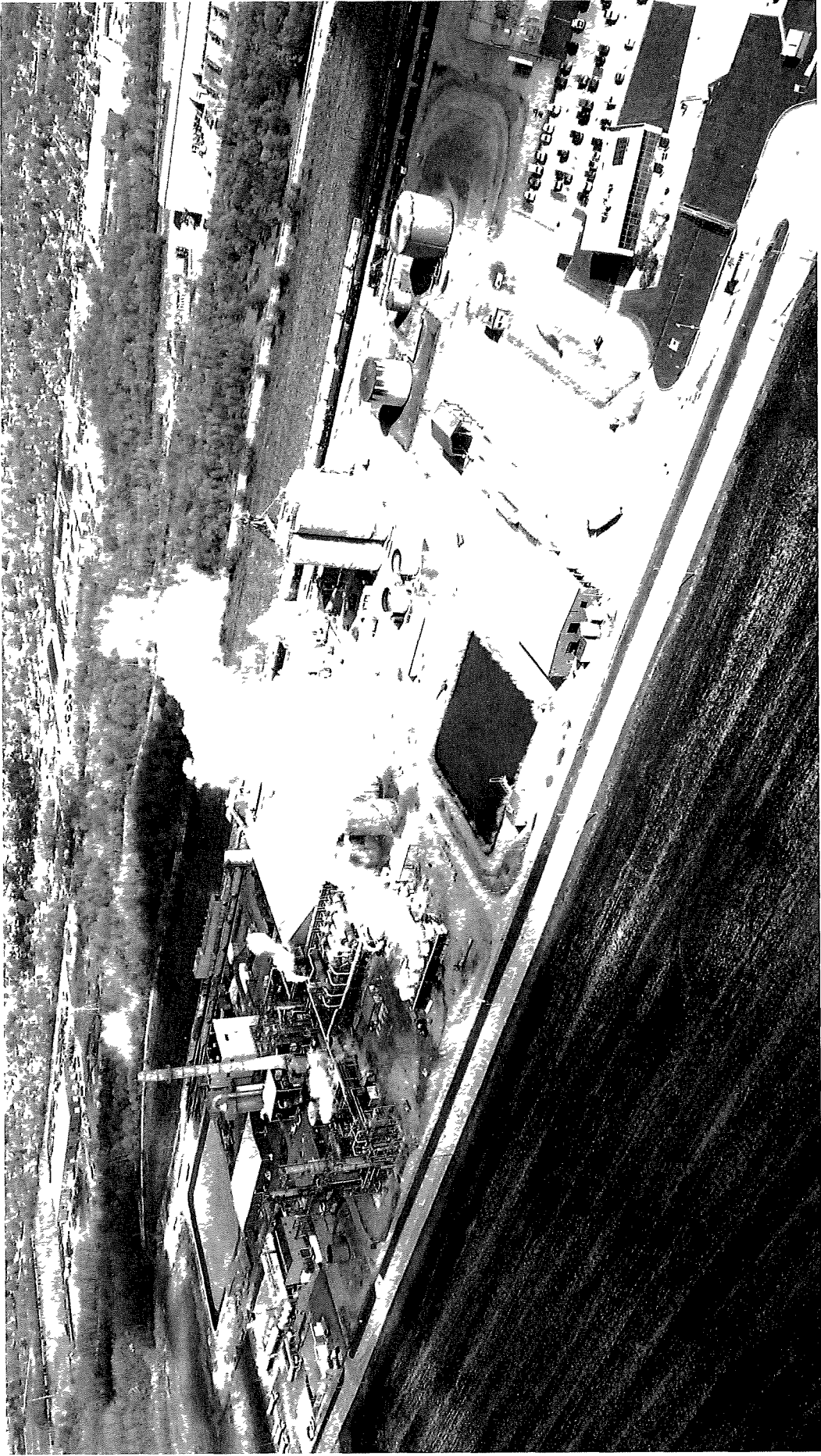
# VERBIO Nevada Biorefinery (Iowa)

**Verbio**  
Biofuel and Technology



# VERBIO South Bend Biorefinery (Indiana)

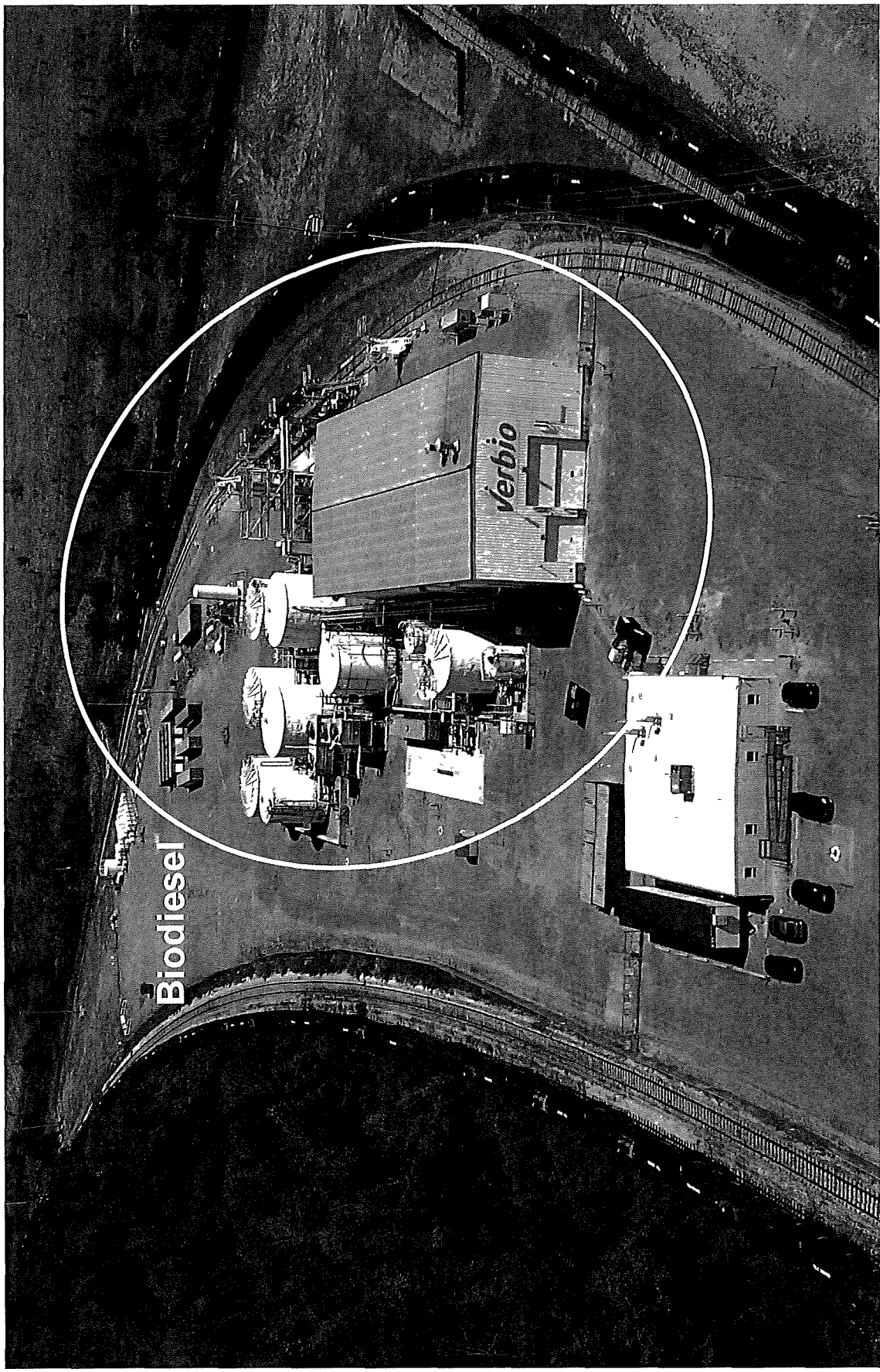
**Verbio**  
Biofuel and Technology





# VERBIO Diesel Canada (Ontario)

**verbio**  
Biofuel and Technology



Biodiesel

**WINNEBAGO**

**ATTACHMENT J**

**WINNEBAGO ERV2 OVERVIEW**

August 10, 2023





## PRODUCT SUMMARY

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The eRV2 is a pioneering product that will reveal the impact of electrification on how owners will live, work, and play in a BEV Class B RV.

1. 100% electric design. eRV2 does not carry any fossil fuels or similar combustible fuels on board.
2. Chassis-agnostic electrical system allows for energy transfer between house and chassis
3. High speed shore power charging
4. Modern “Japandi” interior styling to usher in Winnebago’s advanced technology in a sophisticated tasteful manner
5. Full *Winnebago Connect*™ implementation



*848EC is a sustainable electric van;  
helping protect nature so users can be  
great, outdoors.*



**eRV2**

**W**

IS THIS THE DAWN OF #eVanLife?  
WINNEBAGO IS A LEADER IN  
THE RV SPACE FOR A REASON  
THEY KNOW WHAT THEIR  
CUSTOMERS WANT...



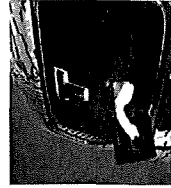
...THE LEGACY BRAND  
FORESIGHT TO EXPLORE  
WHICH ELECTRIC  
VEHICLES CAN BECOME A REALITY  
AND WE'VE PLANNED THAT

**electric** eRV2 PROTOTYPE REVEAL 01.18.23

THE WORLD IS  
GOING ELECTRIC  
AND IT WILL  
GET THERE  
AN EMISSION-  
FREE RV.

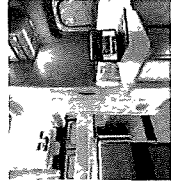
**ELECTRIC**

Built around the Ford E-Transit  
platform, the eRV2 features a  
high-capacity battery system, the  
all-electric platform provides zero  
emission power to both the drivetrain  
and the house, with up to 7 days of  
battery capacity



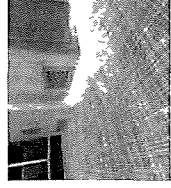
**HUMAN-CENTRIC**

Years of research, user data and  
insight led to the creation of a  
human-centric RV we've never  
created. A modern vehicle with  
intuitive technology and simple,  
yet sophisticated design, offers  
optimal performance of traveling  
in an RV.



**SUSTAINABLE**

From the tech, flooring to  
interior design, we've  
employed sustainable and recycled  
materials throughout the van to  
further reduce your impact on the  
environment.



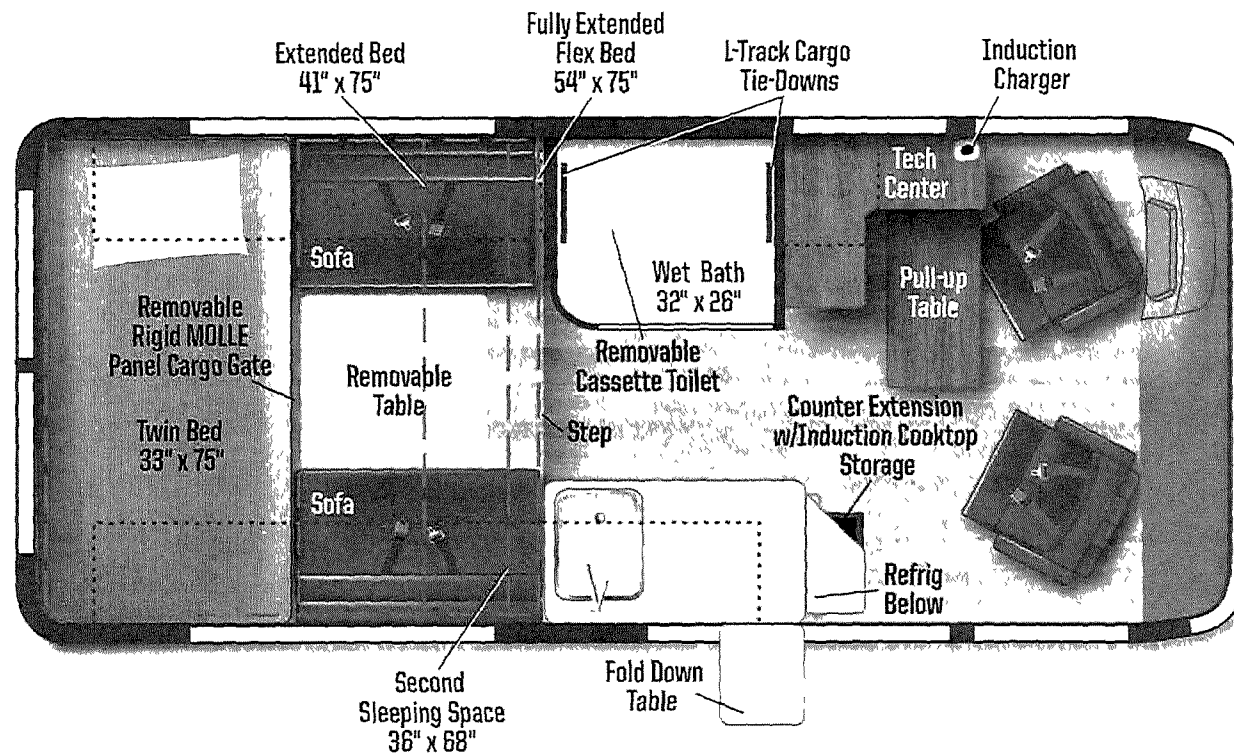
**CONNECTED**

Our new Winnebago Connect™ system  
enables you with location, status,  
intuitive, reliable and powerful  
to deliver automatic energy  
management and smart RV control  
features all in a connected app-  
based experience.



**W**

# eRV2 Floorplan



eRV2 layout supports #evanlife, remote work, and social interaction

# Winnebago Motorhome Go-to-Market Progression of eRV

## **eRV1**

(Project Tahoe)  
Proof-of-Concept Project



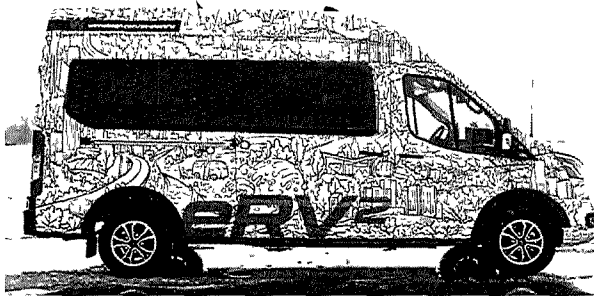
**Goal.** Develop Electric RV Proof-of-Concept Prototype to obtain technical understanding of integrating BEV Chassis with All Electric House Functionality

**Timing.** Jan 2022

**Lead.** Winnebago Industries - Advanced Technology Group (ATG)

## **eRV2 Prototype**

Pre-Production Prototype  
User Experience Fleet



**Goal.** Deliver a Production Ready Fleet of (12) Electric RVs via Winnebago Production Process That Meet Customer Usage Models and Obtain Significant User Experience Feedback Prior to Production Release

**Timing:** Jan 2023

**Lead.** Winnebago Brand Team

## **eRV2**

1<sup>st</sup> All Electric Production RV  
In North America



**Goal.** Deliver 1<sup>st</sup> mass-produced All Electric RV in North America that incorporates feedback from 12 field tested units with Real Customer User Experience Testing

**Timing** 2024 (dependent on Ford Gen 2 Chassis

**Lead.** Winnebago Brand Team

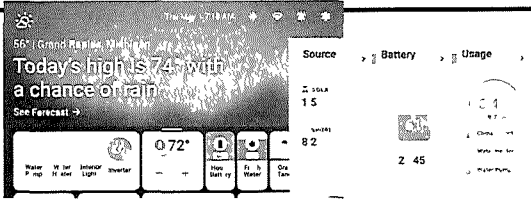
# Technical Progression of Winnebago Electric RV Program

# eRV2 KEY ELECTRICAL SYSTEM INNOVATIONS

## New To WGO



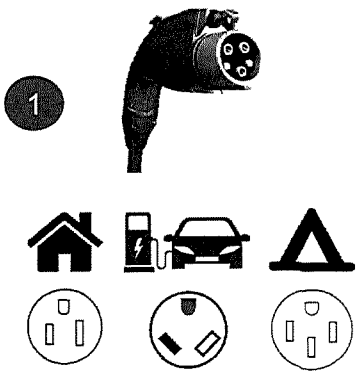
**Winnebago Engineered 48V System**  
 Fast battery charging and high-efficient A/C usage



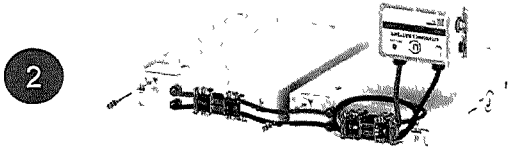
**Winnebago Connect™ Energy Management**  
 Provide consumer confidence and control to extend off-grid capability



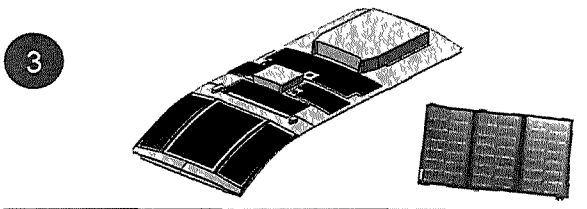
## New To WGO & RV Industry (Patentable)



**Flexible Charging Sources**  
 Peace of mind to charge house system at any locations (campgrounds, homes, or EV stations)



**Unique Proprietary Flat Battery**  
 Superior driving experience with low center of gravity



**Best-in-Class 900W Solar Capability**  
 Optimize energy generation and enable 7-day Boondocking

## eRV2 Media Feedback

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**Winnebago's New  
Electric Camper Van RV  
Concept Can Stay Off-  
Grid for 7 Days**

BUSINESS  
INSIDER

**Winnebago Introduces  
eRV2 to Wedge into  
Electric-RV Future**

Forbes

**Why the Electric  
Winnebago is  
Promising, Even with  
the 108-Mile Range**

InsideHook

**Winnebago's New EV  
Camper Concept Shows  
that All-Electric #VanLife  
is Coming Soon**

Robb Report

**Winnebago Debuts  
Electric RV Prototype  
for New Generation  
of Explorers**

 FUTURRIDE

**Winnebago Kicks  
of eVanlife with All-  
Electric eRV2**

 TheVerge



## eRV2 Pilot Learnings

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*“So it’s kind of a difference between using GasBuddy and PlugShare – so it’s not so different? ... Every van has its quirks, it’s all about resource management and using what you have, and that’s the same [with our van] versus the eRV2. The main difference was the less spontaneous aspect.*

*Ultimately, van life is van life, RV life is RV life, and everyone has their own tendencies and practices. And I think we learned a different way, maybe even a better way, to do it in the eRV2.”*

### **Primary drivers of eRV consideration include:**

- 1. Sustainability**
- 2. Being ‘part of the future’**
- 3. Simplicity of all-electric and ease of maintenance**

### **Behavioral traits that correspond with enjoyment of eRV travel styles includes:**

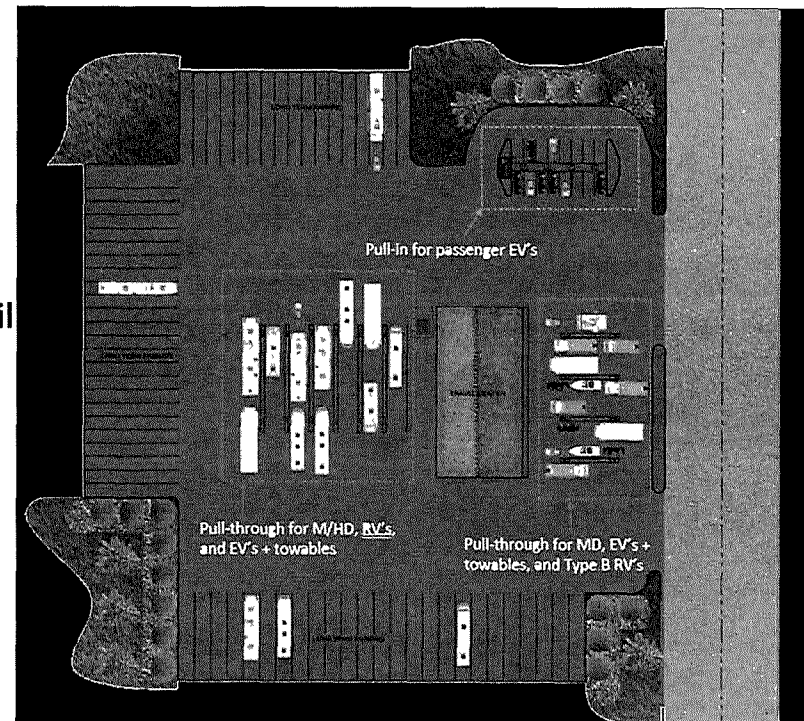
- 1. Slow travel of only 100-200 miles per day**
- 2. Desire to plan trips via apps and ability to toggle between multiple apps to create one plan**

## Accommodating Electric RV's

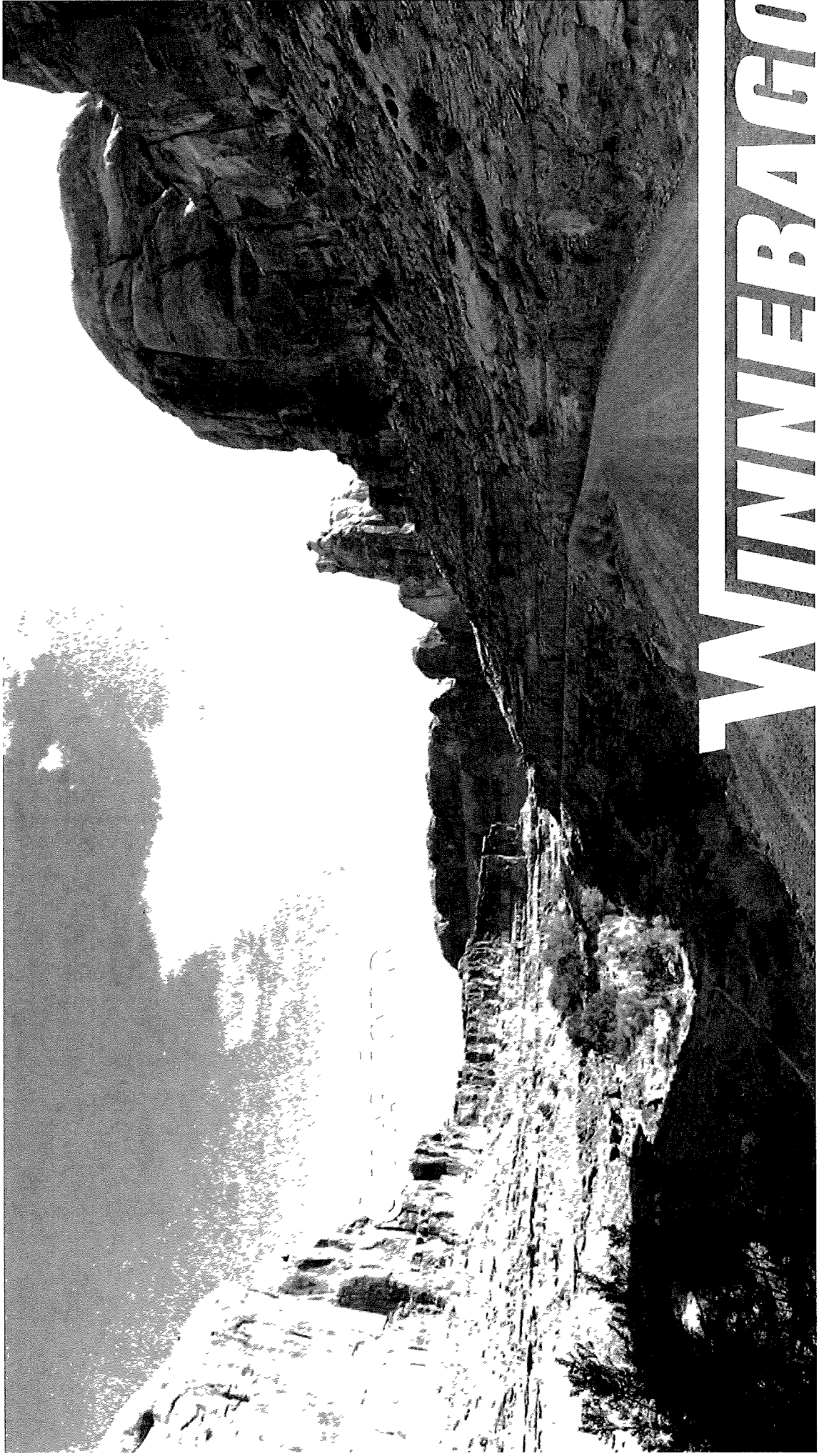
Consumers will need Pull-Through Charging.

The types of EV consumers that will rely on a nationwide public network of pull-through DCFC stations include RVs (towable and motorized), vehicles towing recreational (e.g., boats, ATVs) or commercial (e.g., agriculture, landscaping) trailers, moving trucks (e.g., U-Haul), and other M/HD commercial vehicles. Key characteristics of consumers that will utilize pull-through sites include, but are not limited to, the following:

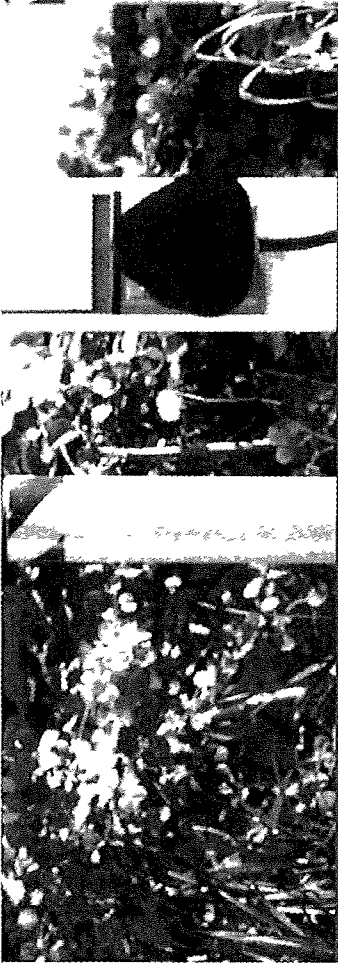
- Travel long distances.
- Tow trailers.
- Lower kilowatt-hour per mile (kWh/mile) efficiencies.
- Larger than standard vehicle lengths (with or without trailer).







# WINNEBAGO



# National Electric Vehicle Infrastructure Funding Update

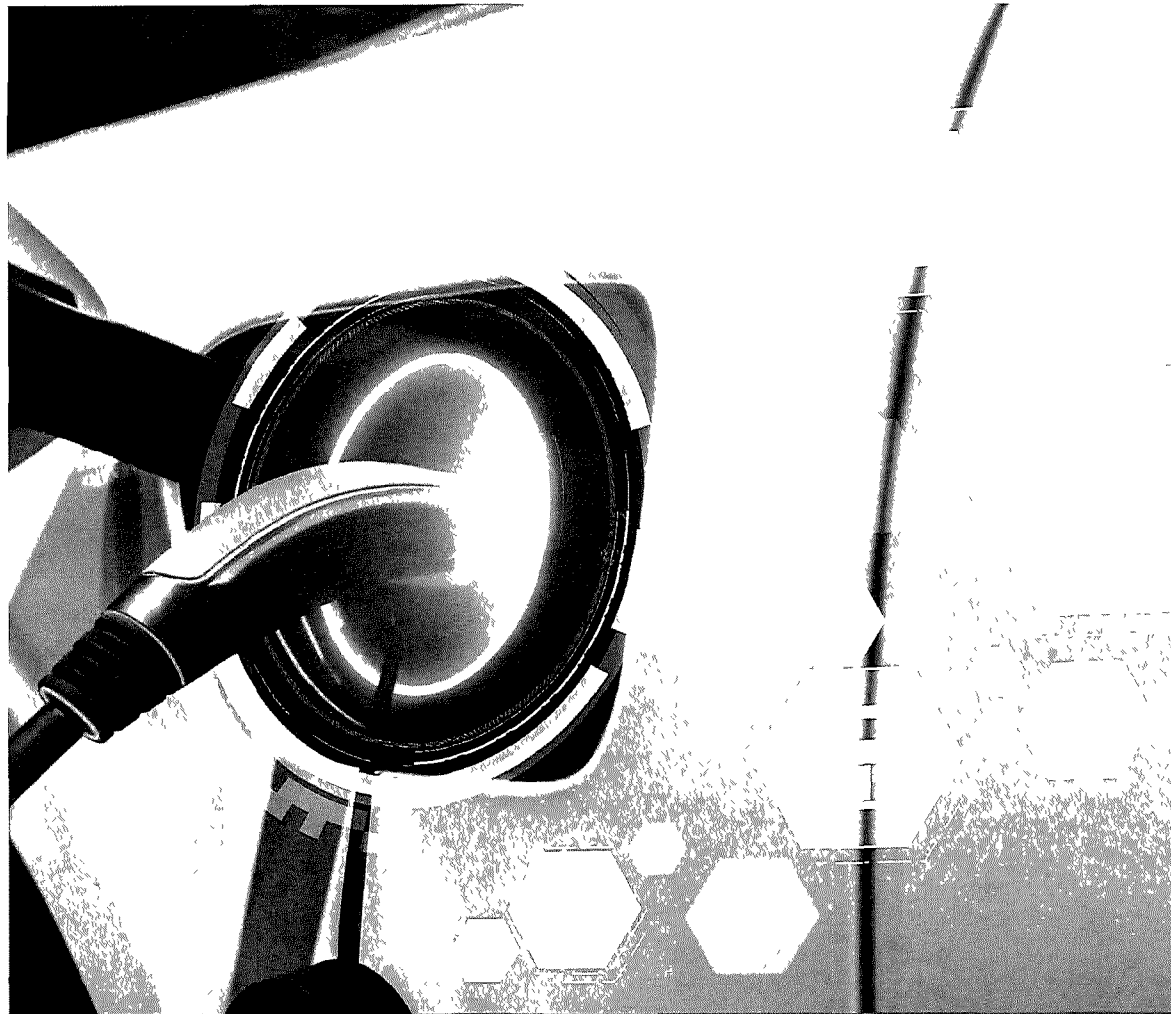


ATTACHMENT K

Iowa Energy Center Board  
August 10, 2023  
Stu Anderson, Iowa DOT



Electric Vehicle Infrastructure Deployment



## Agenda

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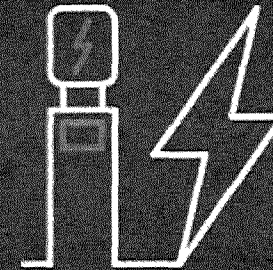
- Iowa EV Registrations
- National Electric Vehicle Infrastructure (NEVI) Program
- What's Next?



# EVs in Iowa Today

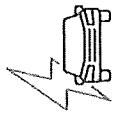


With statewide growing adoption, 12,805 EVs and hybrid vehicles were registered in Iowa as of June 2023— at least one was registered in every county.

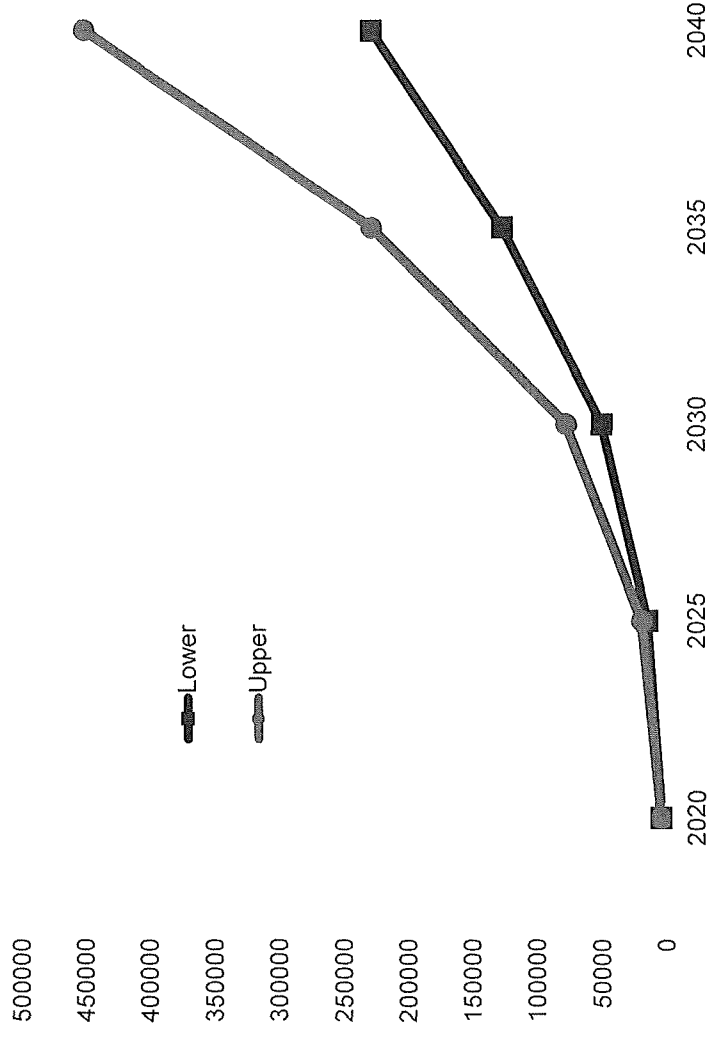


To support this growth, Iowa has 297 EV charging locations (Level 2 and 3) across the state for public use. 68 EV charging locations are Level 3 (non-Tesla)

	Battery Electric Vehicles	Plug-In Hybrid Electric Vehicles
April 2017	400	
June 2018	700	1,750
June 2019	1,340	2,400
June 2021	3,200	3,180
June 2022	5,740	4,610
December 2022	5,990	4,720
June 2023	7,120	5,685



# Projected EVs on the Road in Iowa



Electric Vehicle Infrastructure Deployment

# National Electrical Vehicle Infrastructure (NEVI) Funding



- NEVI Requirements
- Alternative Fuel Corridors



Electric Vehicle Infrastructure Deployment

# Program Background

Iowa DOT Electric Vehicle Infrastructure Deployment Plan

Approved September 2022

2023 Update submitted August 2023

Iowa DOT now establishing an EV Charging Grant Program

In compliance with federal regulations

## NEVI Formula Funds and Matching Funds (Millions)

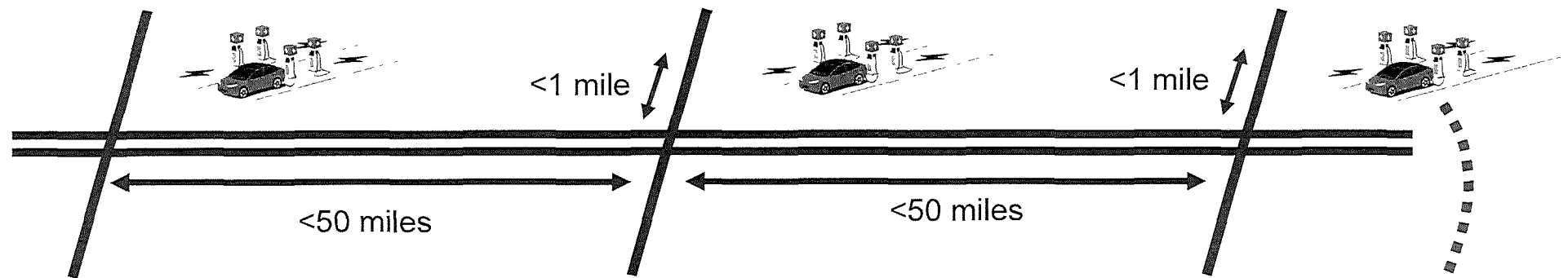
FEDERAL FISCAL YEAR	FORECASTED NEVI FUNDS (80%)	MINIMUM NON-FEDERAL MATCH FUNDS (MIN. 20%)	TOTAL (100%)
2022	\$7.6 M	\$1.9 M	\$9.5 M
2023	\$10.95 M	\$2.75 M	\$13.7 M
2024	\$10.95 M	\$2.75 M	\$13.7 M
2025	\$10.95 M	\$2.75 M	\$13.7 M
2026	\$10.95 M	\$2.75 M	\$13.7 M
<b>Total (5 Year)</b>	<b>\$51.4 M</b>	<b>\$12.9 M</b>	<b>\$64.3 M</b>



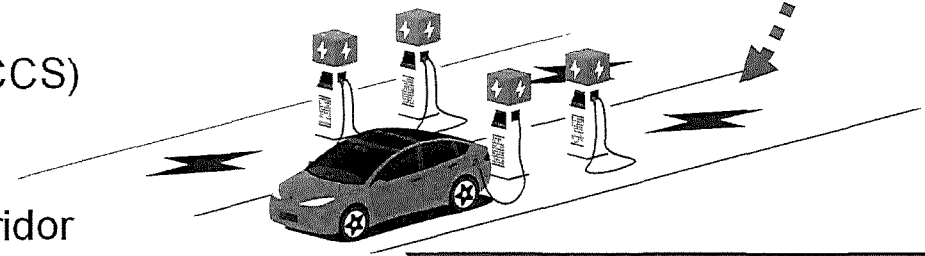
Electric Vehicle Infrastructure Deployment



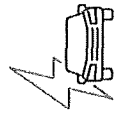
# NEVI Requirements for Charging Stations



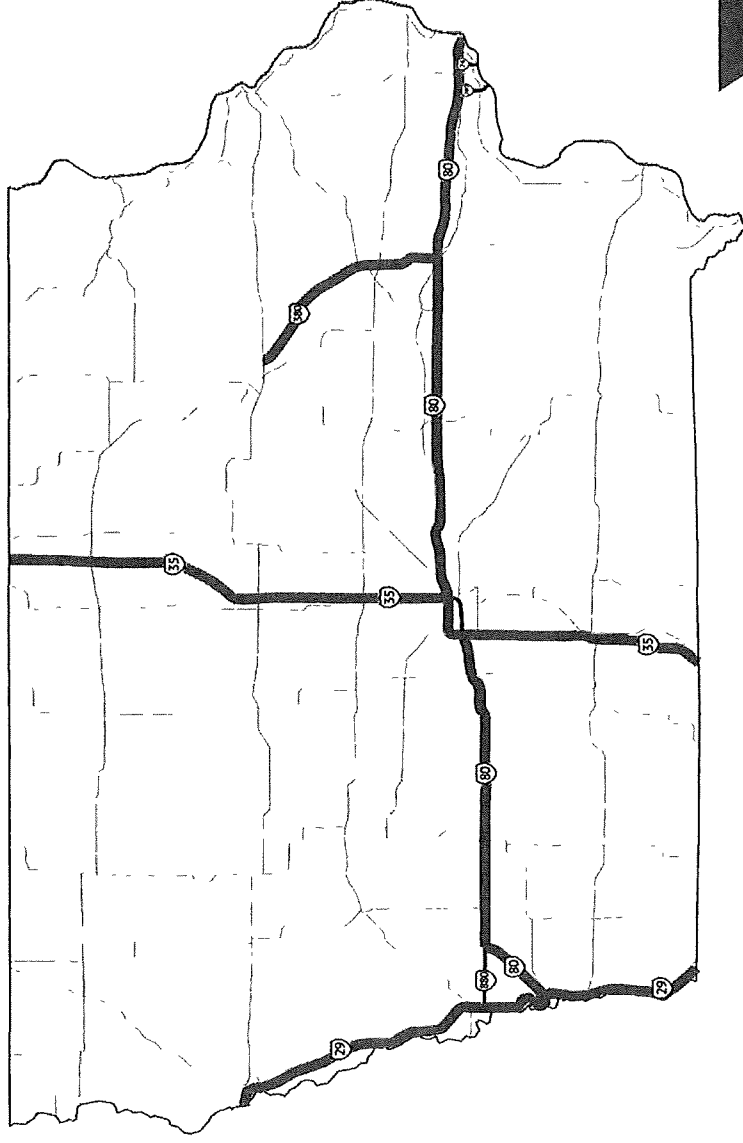
- ✓ Along Alternative Fuel Corridors
  - <50 mile spacing; <1 mile away
- ✓ At least four 150 kW DC Fast Charging ports (CCS)
- ✓ Open to general public (not proprietary)
- ✓ Need to build out corridors before going off-corridor



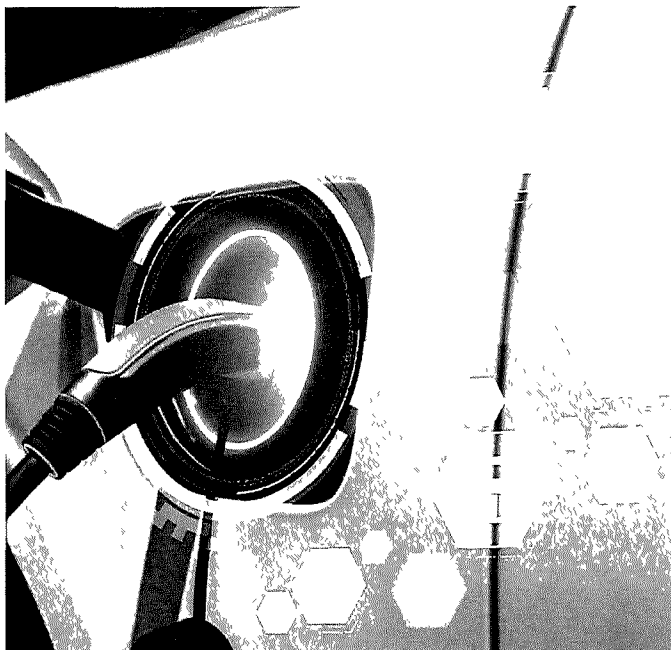




# Iowa's EV Alternative Fuel Corridors



Electric Vehicle Infrastructure Deployment



## Implementation Challenges

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- Using Federal Highway Funding
- Procurement/Contracting Process
- Evolving landscape (e.g. rapid shift to NACS)

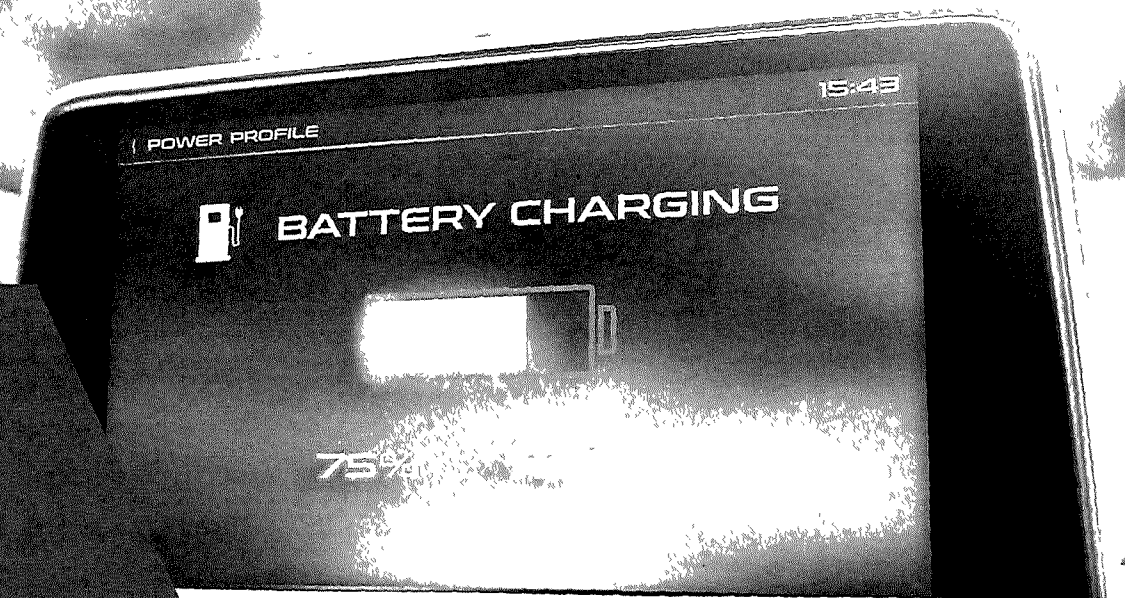


## Priorities for Program Development

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- Transparent
- Collaborative
- Thoughtful
- Equitable

# What's Next?



- Schedule
- Stay Informed



EV INFRASTRUCTURE DEPLOYMENT PLAN

## Schedule

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- Ongoing: Finalizing Notice of Funding Opportunity material
  - Will include stakeholder review of draft material
- Fall 2023: Release Notice of Funding Opportunity
- Winter 2023: Proposals due
- First Half of 2024: Award funds



# Stay Informed —

- Visit the website:  
[iowadot.gov/lowaEVPlan](http://iowadot.gov/lowaEVPlan)
- Understand the grant cycle and when funding is expected to be available
- Continue to participate in the dialogue
- This is just the beginning of a five-year process
- [Iowa.EvPlan@iowadot.us](mailto:Iowa.EvPlan@iowadot.us)