



# BUILDING THE ENERGY FUTURE

100% RENEWABLE ELECTRICITY WEBINAR

Jack Ihle

Kerry Klemm

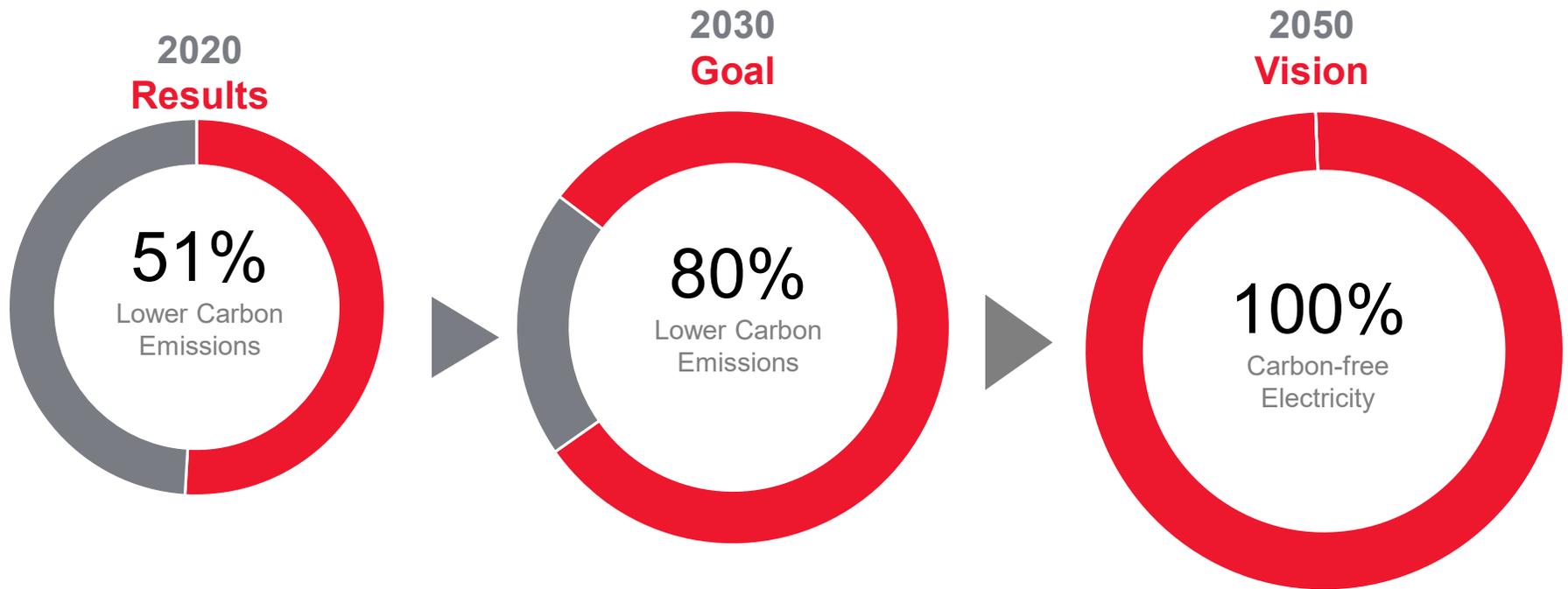
Neil Cowan

1/24/2022



# LEADING THE CLEAN ENERGY TRANSITION

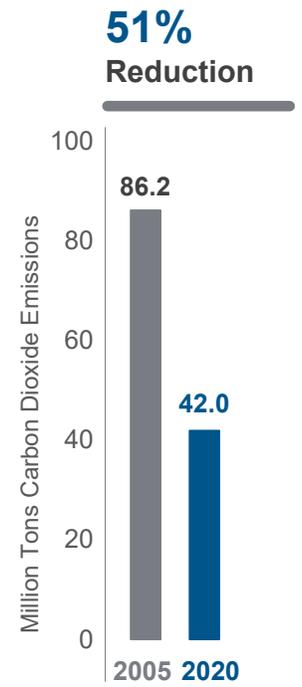
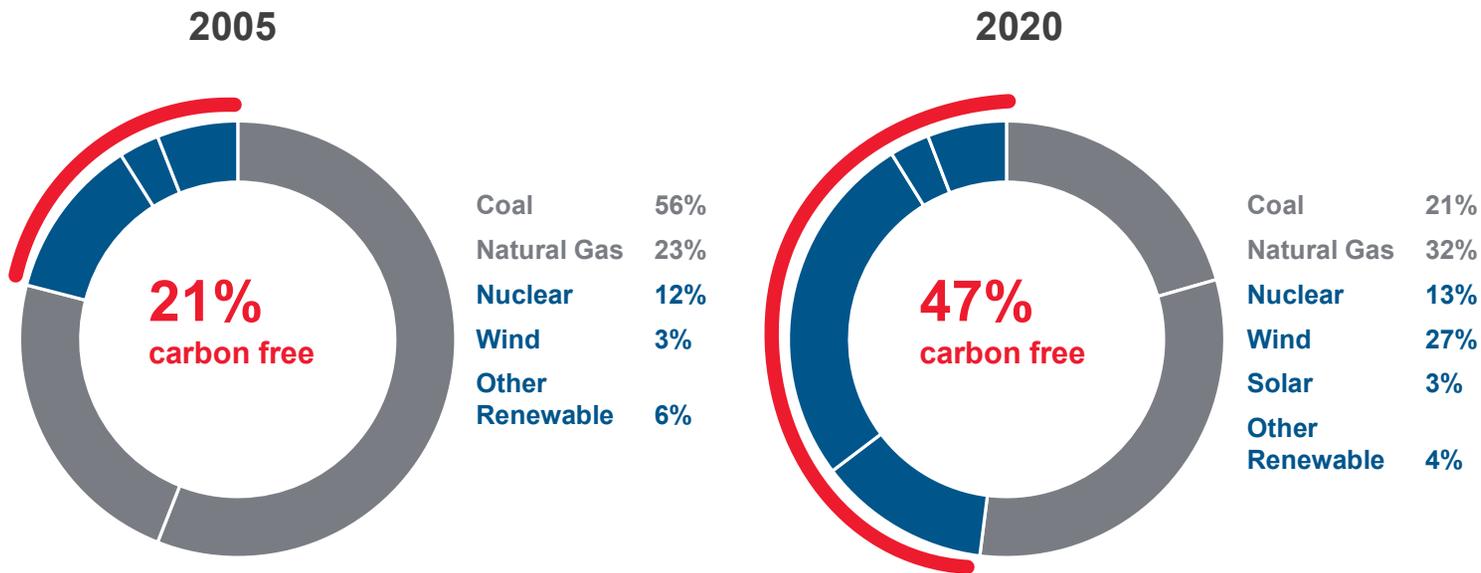
# A Bold Vision for a Carbon-free Future



2020 National Climate Leadership Award for Organizational Leadership

# Our Changing Energy Mix and Emissions Reductions

## Xcel Energy



Note: 2020 carbon emissions reductions are considered preliminary until they are third-party verified

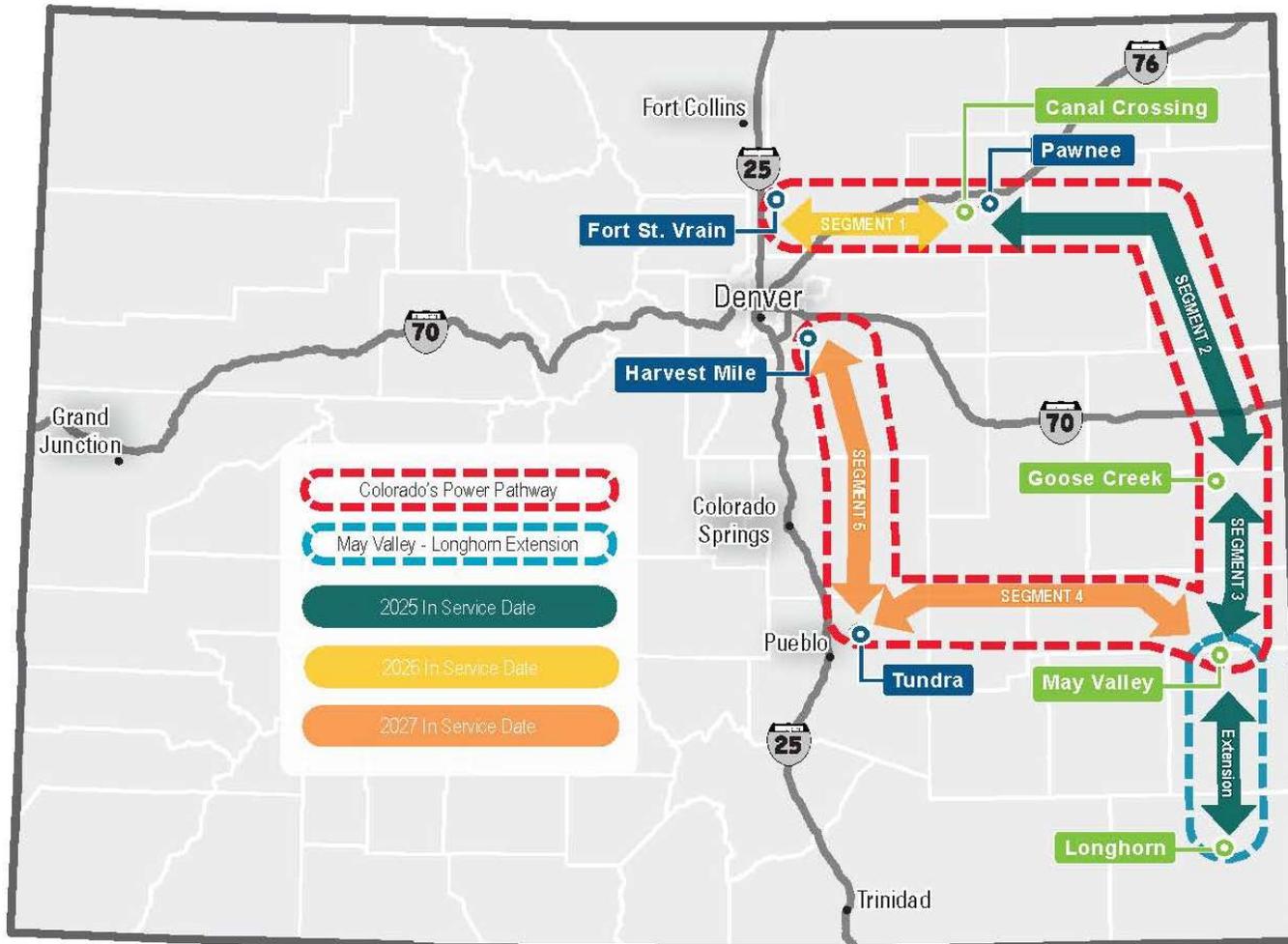
# Clean Energy Plan: Three Key Components

Colorado's Power Pathway:  
groundbreaking new transmission investment

Coal Transition Plan + Just Transition Elements:  
steps to lower emissions

New Clean Energy:  
adding clean energy and jobs to Colorado's energy system

# Colorado's Power Pathway



## Pathway Benefits:

- 560 miles, new 345 kV double circuit transmission line
- Five segments, plus an optional additional segment
- Increases geographic diversity of renewables
- \$1.7B in investment: rural economic development in eastern Colorado
- Unlocks thousands of MWs of high-quality wind and solar resources, unleashing further economic development for Colorado
- Potential partnerships enabling utilities to meet aggressive clean energy targets that in turn support Colorado's GHG targets

# Coal Transition Plan

- Announced plant retirements
  - Hayden 2 in 2027
  - Hayden 1 in 2028
  - Craig 1 in 2025\*
  - Craig 2 in 2028\*
- Other actions through CEP
  - Pawnee conversion to natural gas by 2026
  - Comanche 3 to retire by 2034
- Workforce transition and community assistance plans for host communities



\* Public Service has a 9.8% ownership share in both Craig 1 and 2

\*\*Comanche 1 to retire in 2022 and Comanche 2 in 2025 per the Colorado Energy Plan

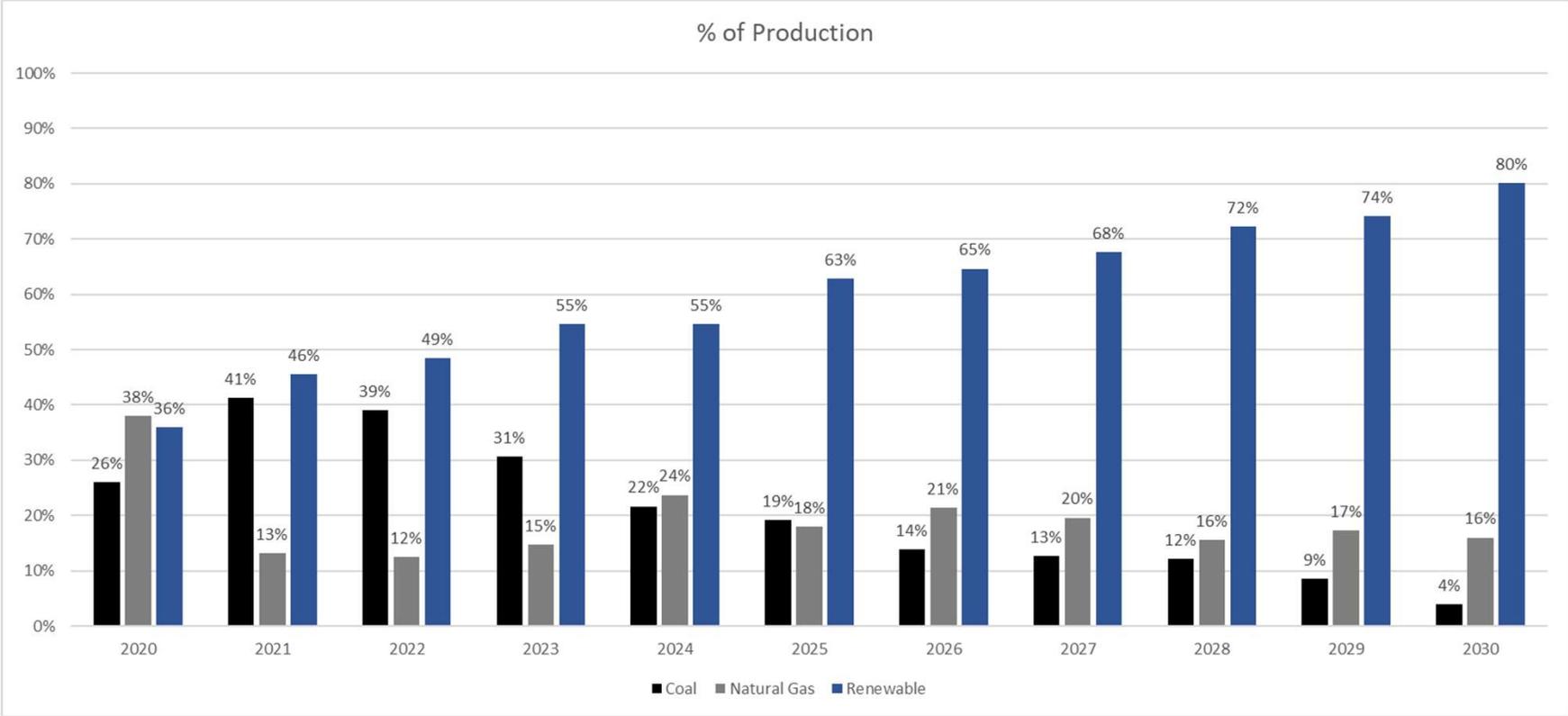
# Anticipated New Resource Acquisitions

- 2030 Resource Acquisition and CEP
  - Significant investment in clean energy resources
  - Dispatchable capacity still needed to support the transition
  - Expect to recontract some existing resources
  - **All outcomes subject to actual bids!**

Resource Type	Capacity (MW)
Wind	2,300
Utility-Scale Solar*	1,600
Storage	400
Dispatchable Resources	1,300
Total	5,600

\*Plus 1300 MW of distributed solar (onsite + solar gardens) outside of ERP

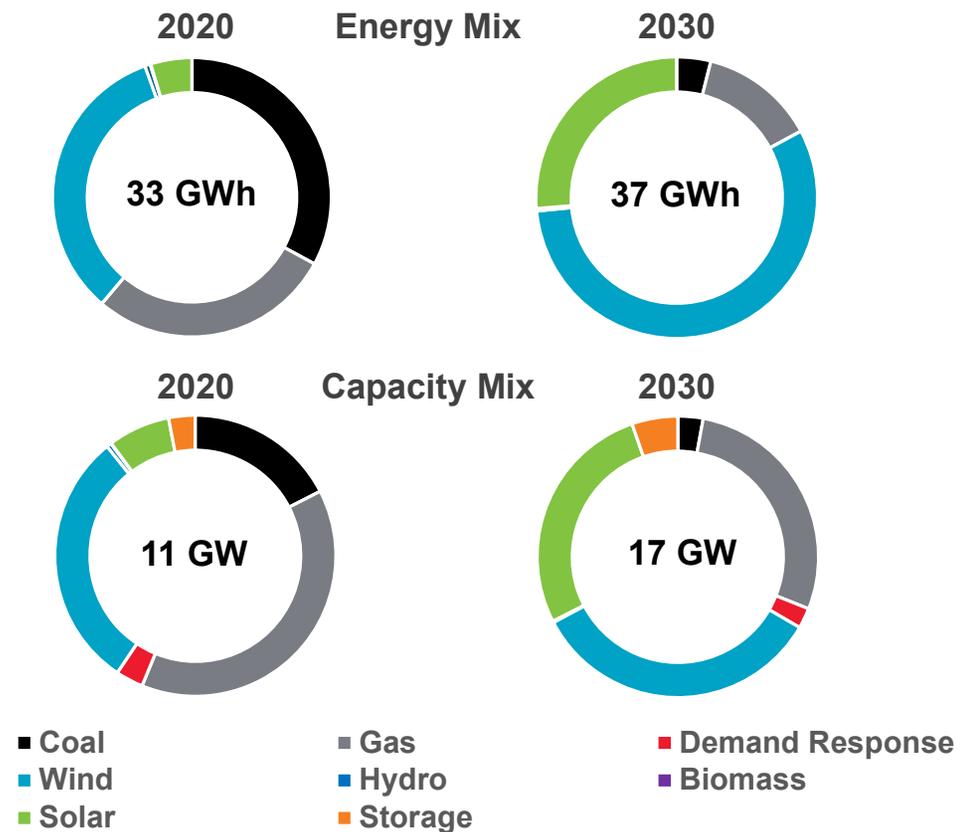
# Colorado Transition to Clean Energy: 2020 to 2030



# Colorado Clean Energy Plan Transition Outcomes

## Preferred Plan Exceeds State GHG Goals

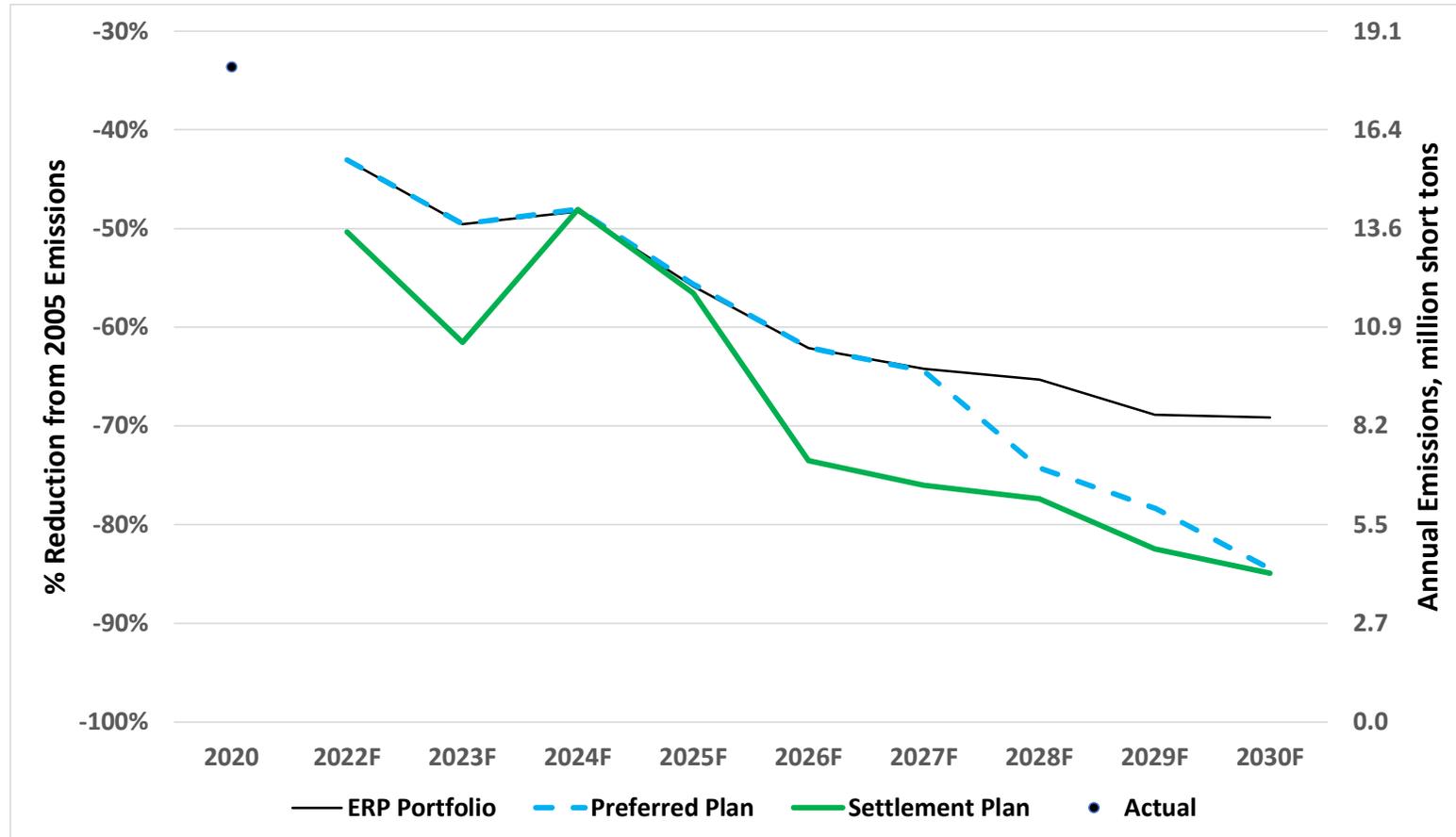
- Customers could see an estimated:
  - 85% reduction in carbon emission from 2005 levels
  - 80% of energy delivered from renewable resources
  - Bill impacts of less than 2.0% annually
- These outcomes beat:
  - State's published GHG Roadmap expectations
  - IPCC guidelines based on our previous studies



# Clean Energy Plan Settlement Agreement

- **Emissions reduction:**
  - 85% emissions reduction by 2030
  - Additional 14 million tons of carbon emissions reduction by 2030
  - Comanche 3 closure in 2034, limited operations beginning in 2025
  - Pawnee fuel switch to natural gas in 2026
- **Support and process:**
  - Settlement reached and hearing held in December
  - Settlement and Resource Plan is pending before the Public Utilities Commission. We await deliberation, possibly in February.
- **Other significant provisions**
  - Plan to work on Zero Emissions Community offering with Boulder with target filing in June
  - Later targeted competitive acquisition to replace Comanche 3 with Pueblo area resources
  - Commitment to use a 90% reduction by 2035 forecasting target
  - Community and workforce transition for Hayden, Morgan County, Pueblo communities

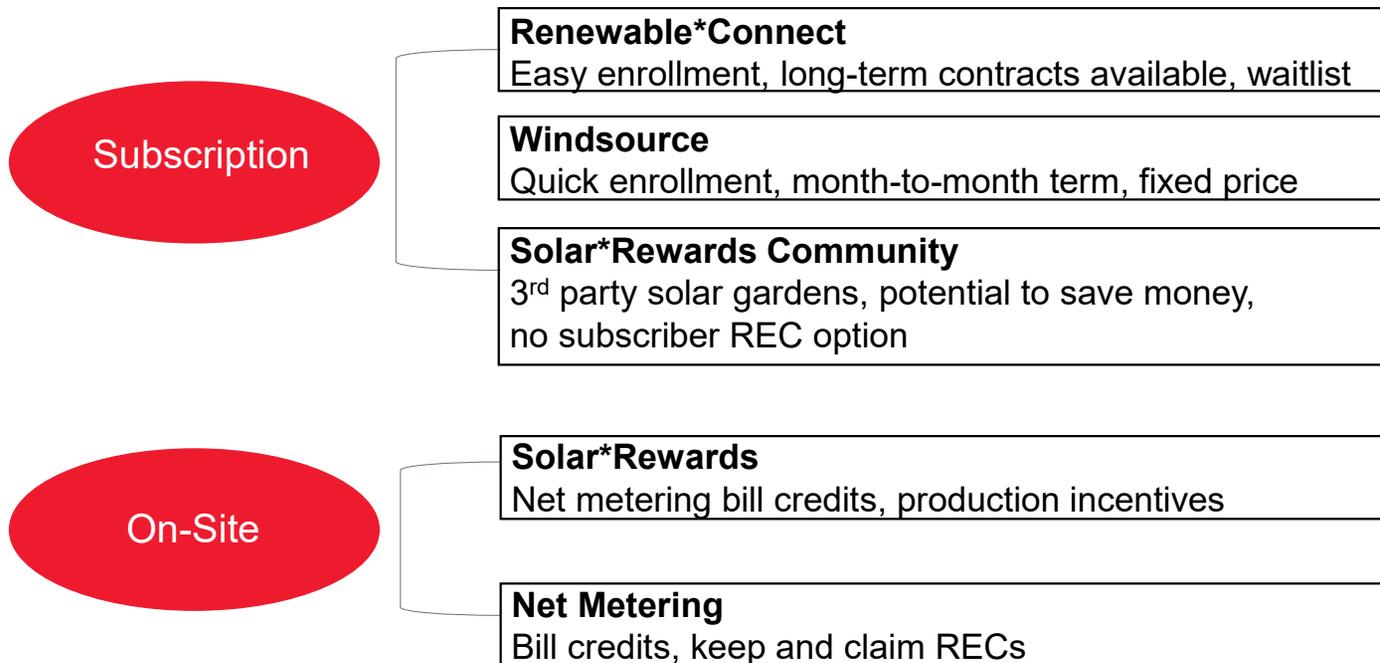
# Carbon Dioxide Emissions Under Settlement Agreement



# PROGRAMS AND INITIATIVES

# Renewable Programs in Colorado Today

2020 Certified Renewable Percentage 31.9% Baseline



# Battery Connect Introduction

## Objectives

- Demonstrate three use cases—peak load reduction, solar shifting, controlled charging
- Understand customer interest
- Learn about software capabilities

## Description

- 500 customers (~100 SolarEdge/~400 Tesla)
- \$1,250 upfront
- 80% of customer's battery, up to 100 events

## Status

- Launched in February 2021
- Contracted with SolarEdge and Tesla
- Pilot will run for 18 months



# Customer Choice Renewables

## Proposed in 2022-25 Renewable Energy Plan

708 MW of new retail distributed generation over four years

New income-qualified on-site solar incentives for commercial customers, extended residential options

More than 50% of incentive spending targeting Income Qualified or Disproportionately Impacted Communities (IQ / DIC)

New Solar\*Rewards Battery Connect option for residential and commercial customers

New Off-Site Solar option

Increased community solar standard offer capacity, simplified RFP, extensive IQ / DIC benefits

Renewable\*Connect expansion and Windsource transition

## Customer-Sited Solar PROPOSED in 2022-25 RE Plan

- 408 MW of Customer-Sited Solar
  - New C&I Incentives
  - New Solar+Storage
  - Large RFP
  - 82 MW of Off-Site Solar (Not shown in table)

Offering	Incentives (20-Year Solar PBI Unless Noted)	Solar Capacity (MW <sub>AC</sub> )				Total 2022-25 RE Plan	Annual Year-One Incentive \$
		2022	2023	2024	2024		
Net-Metering Only (Uncapped Estimate)	N/A	47	47	47	47	188	\$0
Solar*Rewards Battery Connect (Residential/Sm Commercial)	\$125/kW of storage up-front \$1250 residential max/ customer \$2500 sm commercial max/ customer 4 MW of storage annual max.	4.3	4.3	4.3	4.3	17.2	\$567,901
	\$0.005/kWh solar production						
	\$100 annual participation bonus						
Solar*Rewards Income Qualified On-Site Solar (CEO)	≤7 kW \$0.034 PBI \$2/Watt up-front	0.25	0.25	0.25	0.25	1	\$513,403
Solar*Rewards Commercial/Industrial	Option A (50-250 kW) \$0.04/kWh	15	15	15	15	60	\$886,950
	Option B (250-500 kW) \$0.0375/kWh						
	Option C (500 kW - 1 MW) \$0.035/kWh						
	Income Qualified/ Disproportionately Impacted Communities Adder \$0.015/W Up-front \$700,000 Annual Max						
Solar*Rewards Large RFP	> 1 MW As bid with PBI max of \$0.03/kWh	15	15	15	15	60	\$788,400
<b>Total On-Site Solar*Rewards</b>		<b>34.55</b>	<b>34.55</b>	<b>34.55</b>	<b>34.55</b>	<b>138.20</b>	<b>\$3,456,654</b>

# Community Solar PROPOSED in 2022-25 RE Plan

- 300 MW of CSG Capacity
  - Economic-focused RFP
  - Tripled Standard Offer capacity
    - Increased per-project size from .5 to 2 MW
    - 75% targeted toward IQ / DIC capacity
    - Menu of incentives
  - Increased Company’s IQ CSGs
  - Customer REC option

Offering	Incentives (20-Year Solar PBI Unless Noted) Can be stacked	Solar Capacity (MW <sub>AC</sub> )					Annual Year-One Incentive \$ Estimate
		2022	2023	2024	2024	Total 2022-25 RE Plan	
S*RC RFP	As bid in RFP including optional REC adjustment	35	35	35	35	140	\$613,200
Standard Offer ≤ 2 MW	≤1 MW 0.01	30	30	30	30	120	\$2,062,980
	IQ / DIC with ≥30% net subscriber savings 0.035						
	Residential Direct Billed Subscriber 0.015						
	Community Redevelopment 0.005						
	REC Adjustment -0.01 Range -0.01 to 0.065						
Xcel Energy Income Qualified CSGs	100% Income Qualified Direct-Billed Residential with ≥30% net subscriber savings plus planned labor agreement	10	10	10	10	40	\$876,000
<b>Total Solar*Rewards Community</b>		<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>300</b>	<b>\$3,552,180</b>

# Renewable\*Connect PROPOSED in 2022-25 RE Plan

Refine Renewable*Connect 1.0	<ul style="list-style-type: none"> <li>•Simplify earnings, adjust admin portion of charge</li> </ul>
<b>NEW</b> Renewable*Connect 2.0	<ul style="list-style-type: none"> <li>•15-year fixed term</li> <li>•Specific new resource with firm customer commitment</li> <li>•Up to 300 MW</li> </ul>
Rebrand & Refine Renewable*Connect Month to Month	<ul style="list-style-type: none"> <li>•Transition Windsource customers; add system solar resources to subscription resource mix</li> <li>•Flexible term with \$1.00 per 100KWh block (or \$0.01/kWh) price.</li> </ul>
<b>NEW</b> Renewable*Connect Community	<ul style="list-style-type: none"> <li>•Communities use PSCO RECs one-time, annually with custom terms at community level</li> </ul>
<b>NEW</b> Renewable*Connect Natural Gas	<ul style="list-style-type: none"> <li>•Combination of renewable natural gas and carbon offsets for PSCO natural gas customers</li> </ul>





# ELECTRIC VEHICLE VISION

# Our Electric Vehicle Vision



**1.5 MILLION EVs**

On the road in the areas  
we serve by 2030



**\$1 BILLION**

In customer fuel savings  
annually by 2030



**\$1 OR LESS  
PER GALLON**

To drive an EV with Xcel Energy's  
low, off-peak electricity prices



**5 MILLION TONS  
OF CARBON EMISSIONS**

Eliminated annually by 2030  
with our clean energy



2020 Data

© 2021 Xcel Energy

# 2021 LEGISLATION & PARTNERSHIP PROJECTS

## 2021 Legislation Impact on 2022-25 RE Plan

Bill	Change/Requirement	RE Plan Impact
<b>SB 21-261</b> “Public Utilities Commission Encourage Renewable Energy Generation”	Off-site solar installations	Yes – proposed in Plan
	200% system size limit on DERs	Yes – proposed in Plan
	Standard Offer System Sizing – 1 MW	Yes – proposed in Plan
	Energy Storage RESA eligibility	Yes – proposed in Plan
	Multi-Unit Buildings and Tenants	No - rulemaking required
	Meter Collar Adapter	Process implemented in Dec. 2021
	Excess Billing Credits/Donations for IQ customer programs	Yes – proposed in Plan
<b>SB 21-272</b> “Measures To Modernize The Public Utilities Commission”	40% of Expenditures/Investment to IQ and DICs	Yes – proposed in Plan

# Zero Emission Community

New Concept Promoted by City of Boulder in 2021 ERP

Areas of further development:

- Assess Community Demand
- Resources:
  - Source Incremental Renewable Resources
  - Add Storage
- Crediting:
  - Avoided Energy & Capacity (like Renewable\*Connect)
  - Other Measures to “Firm” Resources to Demand

