




# Introduction

Platte River Power Authority and its owner communities of Estes Park, Fort Collins, Longmont and Loveland developed this distributed energy resource (DER) strategy to meet a growing customer interest in DERs, and to help achieve Platte River’s Resource Diversification Policy and individual owner community goals.

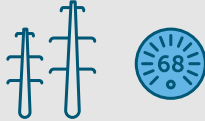
Platte River’s Board of Directors approved the Resource Diversification Policy in December 2018, which directed Platte River to “proactively work toward the goal of achieving a 100% noncarbon energy mix by 2030, while maintaining Platte River’s three pillars of providing reliable, environmentally responsible and financially sustainable electricity and services.”

Platte River’s 2020 Integrated Resource Plan plots a path to achieve greater than 90% carbon emissions reduction. Solutions identified through implementation of this DER strategy will be key in helping to close the gap on the last 10% to achieve the goal of a 100% noncarbon energy mix.


**What are DERs?**  
DERs are physical or virtual devices or systems that can be deployed on the electric distribution system or on customer premises that can be used to provide value to all customers through electric system optimization and/or individual customer benefits.




**Distributed generation**  
Technologies located on the distribution system that generate energy, like rooftop solar




**Demand response**  
Also known as responsive load, refers to shifts in energy usage to better align with times that energy supply is more readily available



**Energy efficiency**  
Methods of reducing energy used by equipment, an appliance or process while still providing the same beneficial result



**Beneficial electrification**  
Replaces fossil fuel use with electricity to reduce emissions and energy costs, including greater use of electric vehicles and electric heat pump technology



**Distributed energy storage**  
Includes technologies like batteries that can store energy from the electric system when it’s plentiful or inexpensive and return it to the system when needed

## Vision statement

To integrate DERs into the electric system through collaboration and coordination between the owner communities and Platte River to provide value to all customers.

## Guiding principles

- Maintain system reliability and utility financial sustainability while enhancing environmental responsibility and the customer experience
- Implement safety practices in all facets of DER planning, operations and customer programs to protect the public, utility employees, contractors and customers
- Maintain physical and cybersecurity of utility-owned grid assets and privacy of customer data
- Facilitate deployment of DERs across all customer groups in a way that provides benefits to those customers and the electrical system
- Provide consistency, transparency and flexibility among Platte River and the owner communities in DER planning, operations and programs
- Employ common processes, industry best practices and innovation for the integration of DER technologies onto the grid

## DER strategy

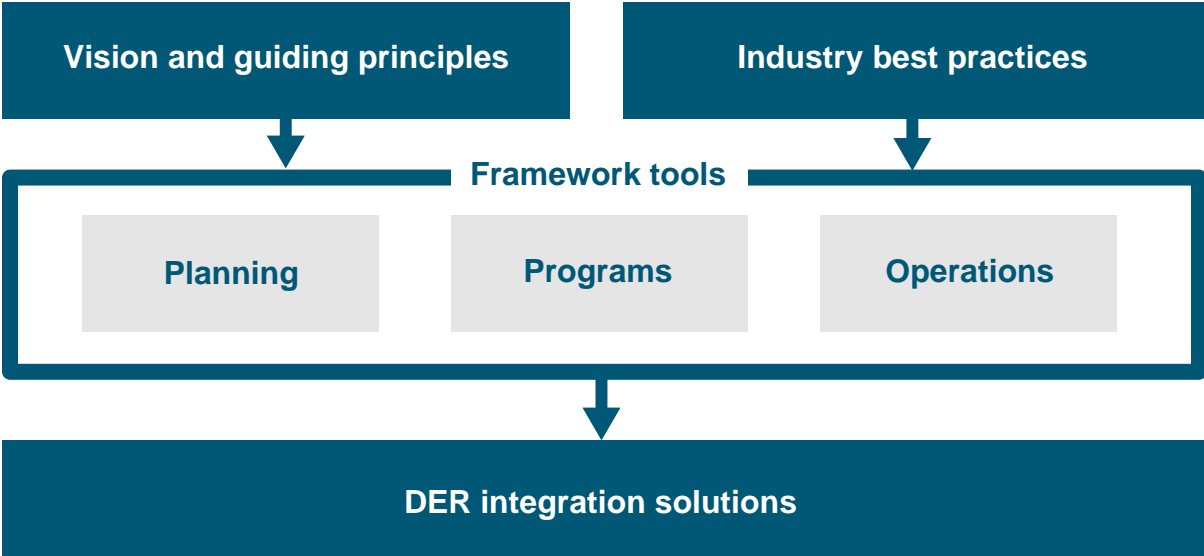
DERs will be an essential tool for Platte River and its owner communities to use while working to achieve a 100% noncarbon energy mix by 2030. Platte River and its owner communities will integrate DERs into utility planning and operations through coordinated customer programs to complement carbon reductions achieved through utility scale renewable generation.

This DER strategy provides a path forward to jointly attain the full value of DERs to the benefit of customers and the grid. This strategy:

- Provides a shared vision and guiding principles that each organization can use as a foundation for their individual and combined efforts in support of DER growth
- Recognizes technology advancement and growing customer interest is driving DER adoption
- Acknowledges the high level of collaboration and coordination that is necessary between Platte River, as the wholesale generation and transmission entity, and the owner communities, as the distribution utilities, to effectively plan for and develop DER programs
- Establishes DER framework tools for evaluating benefits and costs of DERs across the electric system
- Determines processes for Platte River and the owner communities to evaluate DER investments and integrate DERs into utility planning, operations and customer programs
- Incorporates utility industry best practices and standards

# DER strategy execution

Stemming from the vision and guiding principles, the practical application of the strategy will encompass the coordinated efforts among the owner communities and Platte River, using framework tools to evaluate, select and develop DER integration solutions.



DERs enable and influence a changing relationship with Platte River, owner community and customer interactions with the transmission and distribution grids. These evolving relationships require closer coordination between utility system planners, operators, programs and customers. The DER strategy addresses the key business functions as shown below.

Focus areas			
	Planning	Programs	Operations
Functions	Integrated resources planning	Retail DER programs	DER monitoring, control and dispatch
	Transmission and distribution planning	DER asset ownership	DER operational forecast
	DER planning forecast	Retail and wholesale rates	Transmission and distribution coordination
	DER interconnection	DER aggregation	

## Planning

Planning for DER integration requires the evaluation of each program's growth potential and management approaches that can maintain the reliability and sustainability of the electric system. Incorporating DERs into utility planning requires new tools for forecasting DER growth and managing the growth impact on infrastructure and resource needs. Key utility planning elements of this strategy include:

- Developing consistent planning processes, tools and collaboration between the owner communities and Platte River to leverage DERs across the system
- Forecasting the impacts of DERs on system load and generation
- Conducting technical analysis to determine when DERs can be used to address system constraints instead of traditional infrastructure investments
- Developing consistent interconnection processes across the owner communities to support the expected DER growth
- Studying the range of potential DER values to optimize DER dispatch

## Operations

Incorporating DERs into real-time operation of Platte River's generation and transmission assets and owner community distribution networks requires new ways of thinking about how the grid operates. Key issues of this strategy include:

- Determining passive and active utility control of DERs for distribution, transmission and generation needs
- Developing use cases and thresholds for utility visibility, forecasting, dispatch and control of DERs
- Defining dispatch requirements in program offerings and interconnection agreements

## Programs

Utility and customer programs can create DER offerings that result in value for all. DERs introduce opportunities for new types of service and the potential to capture new value streams. Utility and customer programs can leverage the capabilities of DERs like solar, batteries, electric vehicles and flexible customer load alongside traditional utility assets while continuing to provide reliable and affordable service. Key utility customer program solutions of this DER strategy include:

- Establishing and implementing a collaborative process for DER program design and implementation
- Aligning retail and wholesale rates which recognize the unique characteristics of DERs
- Identifying opportunities to collaborate on DER pilots and programs using the DER framework tools

## DER framework tools

Platte River and the owner communities developed DER framework tools to assess the benefits and costs of integrating DERs from the perspective of the utilities and customers. Prior to adopting any DER initiatives, the tools will serve as an initial screen before conducting further evaluation using more sophisticated integrated resource planning tools. Because not all impacts are quantifiable, the framework tools include a qualitative screening in addition to a quantitative model.

## A coordinated approach

This strategy was developed through a collaborative effort by Platte River and the owner communities. To effectively integrate DERs, this collaboration and coordination will continue through cross-functional teams that will jointly evaluate and, where practical, develop and implement DER integration solutions that effectively engage with and benefit customers and the utilities alike. All solutions will support the achievement of a noncarbon energy mix that is reliable, environmentally responsible and financially sustainable.

## Stakeholder acknowledgement

The DER strategy committee is grateful for the participation from hundreds of individuals and stakeholders who contributed significantly to the DER strategy development process.

### DER strategy committee members



TOWN OF  
**ESTES PARK**  
COLORADO

- Reuben Bergsten, director of utilities
  - Sarah Clark, AMI coordinator
- 



- Tim McCollough, committee co-chair and deputy director of light and power
  - John Phelan, energy services senior manager
- 



- Dave Hornbacher, committee co-chair and executive director of Longmont Power & Communications
  - Kate Medina, internal services director
- 



- Bill Crowell, power operations manager
  - Tracy Hewson, customer relations manager
- 



**Platte River**  
Power Authority

- Alyssa Clemens Roberts, chief strategy officer
  - Pat Connors, vice president of power supply
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