

## DOCKETED

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A P O W E R F U L P A R T N E R



**JANUARY 22, 2016**

**California Energy Commission  
Renewable Energy Transmission Initiative 2.0  
Staff Workshop for Transmission Technical Input**

**Zephyr Power Transmission Project Presentation**

# Topics

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- About Duke-American Transmission Company
- Zephyr Power Transmission Project Overview

# About Duke-American Transmission Co.

- Transmission developer equally owned by Duke Energy and ATC
- Formed April 2011 to pursue transmission development on a national scale
- Founded on a vision of transmission as enabler of efficient generation markets

## TOGETHER, DATC PARTNERS:

- **Operate 10% of the grid** – more than 41,000 miles of transmission lines
- **Operate 59% more efficiently** than the industry, with an O&M vs. gross plant efficiency rate of 2.0% vs. the 4.9% industry average
- **Built more transmission** in the last 10 years than anyone in the industry
- **Own \$13.6 billion** in transmission assets

Based on 2013 FERC Form 1 filing data



- Nation's largest electric power holding company, serving more than 7.5 million customers in six states
- Approximately \$114 billion in assets
- Owns and operates 32,300 miles of transmission lines
- Interest in DATC is held by Duke Energy's Commercial Businesses
- Identified \$8 billion of transmission infrastructure projects, including one approved MISO Multi-Value Project
- Transmission-owning member of the MISO and PJM regional transmission organizations
- Founded in 1904 and headquartered in North Carolina with more than 29,000 employees
- Fortune 250 company listed on the New York Stock Exchange under the symbol DUK



- Formed in 2001 as the nation's first multi-state transmission-only utility
- \$3.8 billion in transmission assets
- Ownership group includes 22 municipalities and cooperatives
- Invested \$3.5 billion in building more than 2,400 miles of transmission lines over the past 14 years in four Midwestern states: Wisconsin, Michigan, Minnesota and Illinois
- Projecting \$3.3 billion to \$3.9 billion in transmission infrastructure projects over the next decade in current service area, including three MISO Multi-Value Projects
- Owns and operates more than 9,500 miles of transmission lines and 530 substations
- Headquartered in Wisconsin with more than 650 employees
- Transmission-owning member of MISO

# Zephyr Project Overview

- Zephyr Project is an HVDC transmission line project that interconnects very rich wind resources in eastern Wyoming to the large renewable energy market in California
  - 2,100 to 3,000 MW capacity, 525 to 850 miles
  - \$2 to 3.5 billion in capital
  - Target commercial operation in mid-2020s
- 2011 Development Agreement with Pathfinder Renewable Wind Energy (Pathfinder)
  - Pathfinder is the anchor shipper on Zephyr project
  - Pathfinder offtake agreements are a primary condition precedent to proceeding with Zephyr
  - Parties cooperate on development and marketing (CA utilities) activities
- In addition to the Wind Project, Pathfinder is developing a Compressed Air Energy Storage (CAES) project to store wind energy
  - CAES site is on the current proposed route for Zephyr, and adjacent to the Inter-mountain Power Authority (IPA) coal plant near Delta, Utah
  - IPA owns an HVDC line from the coal project to CA (the STS)

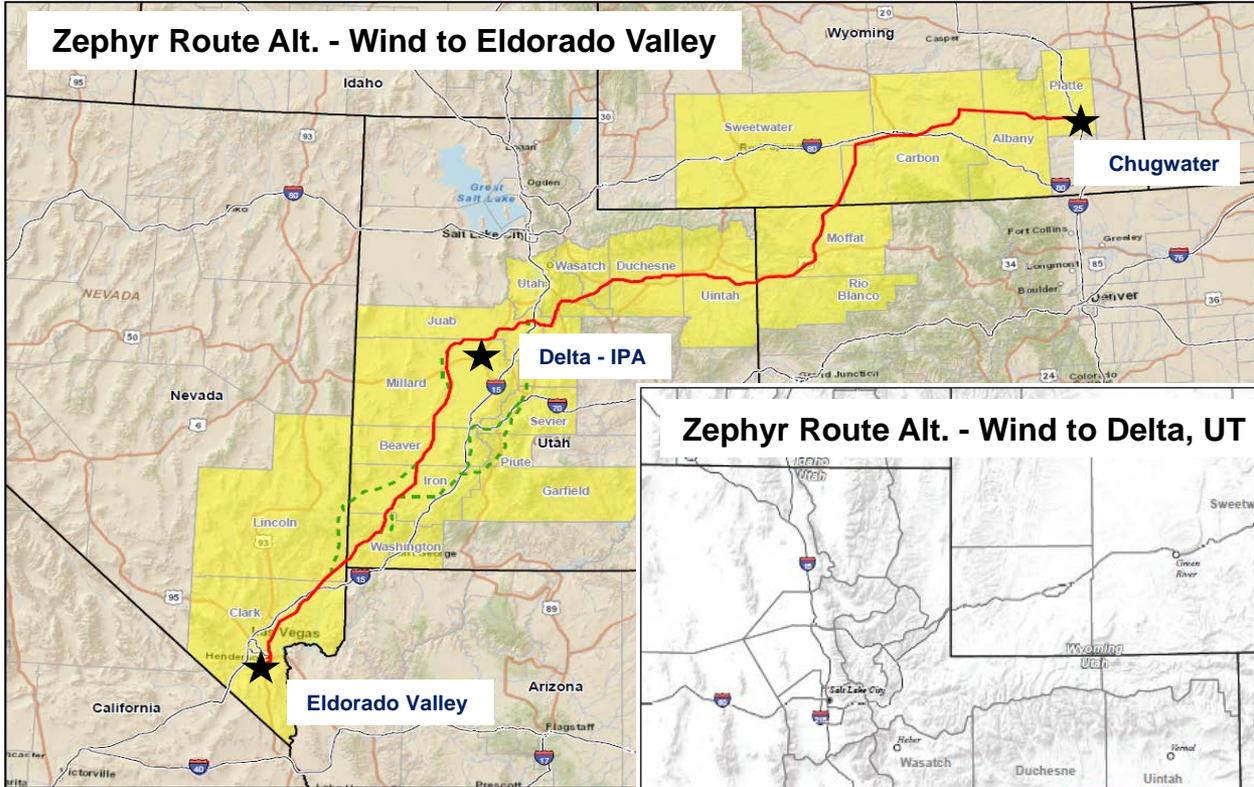
# Background on Pathfinder

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- Pathfinder is a Wyoming-based development company
- Anchor shipper on the Zephyr project
- Pathfinder is currently developing
  - Up to 3,000 MW Pathfinder Wind Project near Chugwater in eastern WY
  - 1,200 MW Compressed Air Energy Storage Project near Delta, UT
- Pathfinder Operates
  - 700,000 acre Sweetwater River Conservancy in central WY
    - Wetland and stream banks
    - Sage Grouse habitat conservation bank
    - Proposed raptor conservation bank
- Financial backers include Sammons Enterprises and Guggenheim
- GE is the equipment supplier

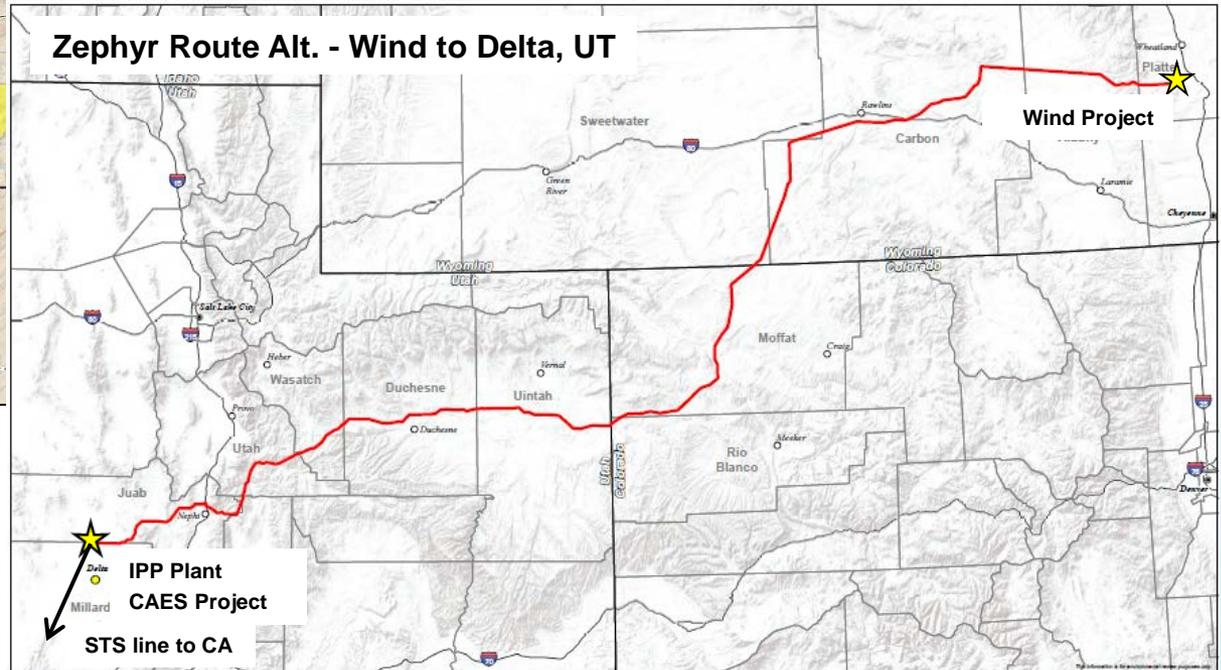
# Zephyr Project Overview

**Zephyr Route Alt. - Wind to Eldorado Valley**



- 500 kV HVDC transmission line
- 2,100-3,000 MW capacity
- Anchor Shipper – Wind
- Route alternatives: Chugwater, WY to terminus at Eldorado Valley, and/or interconnection at Delta, UT (IPP)

**Zephyr Route Alt. - Wind to Delta, UT**

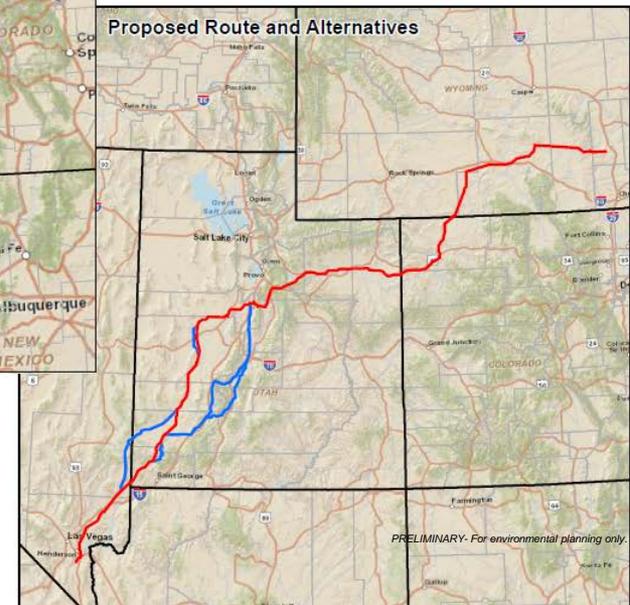
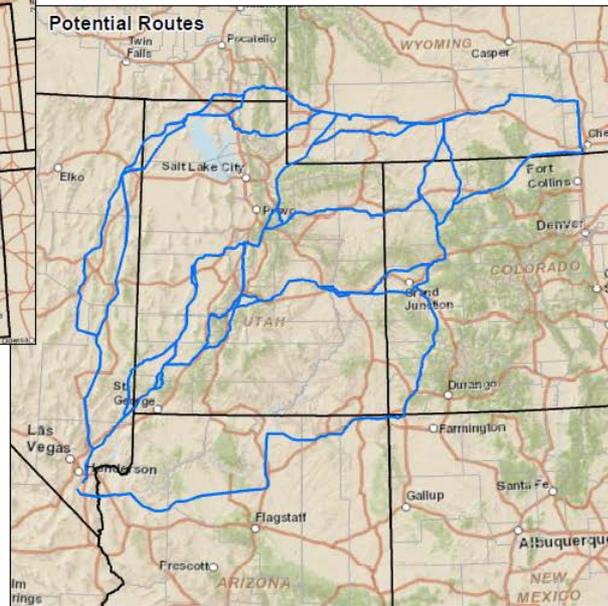


# Zephyr - Route Development Evolution



Zephyr Power  
Transmission Project

- Zephyr-Proposed Route
- Major Route Alternatives-Preliminary
- Potential Routes
- Study Area
- State Boundary
- County Boundary



# Zephyr – Current Focus

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- Marketing
  - Support Anchor Shipper efforts to seek offtake contracts
  - Targeting the post-2020 period, where demand for renewable resources will increase to meet increasing RPS and GHG goals
- Regulatory and Permitting
  - Participation in regional/inter-regional planning processes
  - Refining federal, state and local right-of-way permit applications
  - Executing ongoing outreach

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