



The Zephyr Project

Presentation to Wyoming Infrastructure Authority February 1, 2011



The Zephyr Project

- **Zephyr is a fully integrated renewable generation and interstate transmission project, which fosters the development and delivery of high-quality Wyoming Wind to markets in the southwest**
 - TransCanada will serve as the lead entity for developing, permitting and constructing the transmission assets.
 - Wind generation resources will be developed by BP Wind Energy North America, Inc. (BP), Horizon Wind Energy, LLC (Horizon), and Pathfinder Renewable Wind Energy, LLC (Pathfinder)

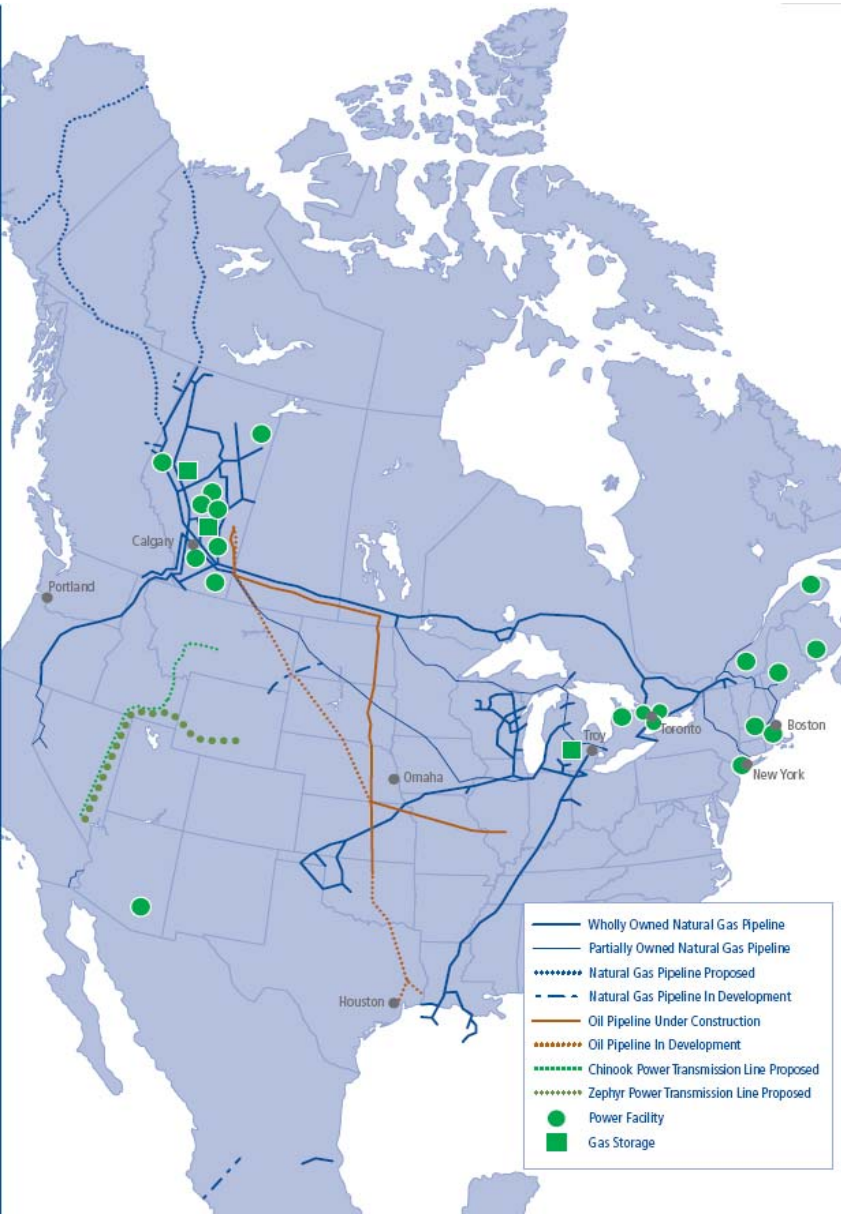


Zephyr: Project Description & Routing

- 3,000 MW, 500 kV HVDC, 1,000 mile interstate merchant transmission project
- Estimated capital cost \$3B
- Commercial operation in late 2016
- Converter stations in Chugwater, WY and in the Eldorado Valley (south of Las Vegas, NV)
- Interconnects to CA & other SW balancing authorities
- Bullet line that avoids pancake rates and minimizes transmission losses
- Zephyr's HVDC configuration provides a direct, verifiable and contiguous firm transmission path from the high-quality wind resources in Wyoming to consumers in the southwest



TransCanada: Overview



North America's Largest Natural Gas Pipeline Network

- 37,000 miles
- Average volume of 14 Bcf/d

North America's 2nd Largest Natural Gas Storage Operator

- 380 Bcf of storage capacity

Canada's Largest Private Sector Power Generator

- 19 power plants, 10,800 MW
- Diversified portfolio, primarily low-cost, base-load generation

Oil Pipelines

- Keystone: 1.1 million Bbl/d
- Phase 2 under construction
- Phases 3 and 4 in development

Footprint

- 4,200 employees in 34 states & 7 provinces
- Relationships with over 60,000 landowners

TransCanada: Bison Pipeline

An Expanding Wyoming Footprint



- 303-mile natural gas pipeline
- Commenced operation January 14, 2011
- Connecting Powder River gas supply to Northern Border Pipeline with access to Chicago and area markets
- Capacity is 407 MMcf/d, fully contracted
- Allows customers to reach premium markets in Midwest
- Expandable to 1 billion Bcf/d with compression
- Future extension potential deeper into the Rocky Mountains
- Approximately US\$610 million
- 297 out of 297 landowners signed easement agreements

- **No public or political opposition as faced by other infrastructure projects**
- **All interventions to FERC were positive**
- **Commitment to open discussion with all stakeholders**

Zephyr: Generator Overview



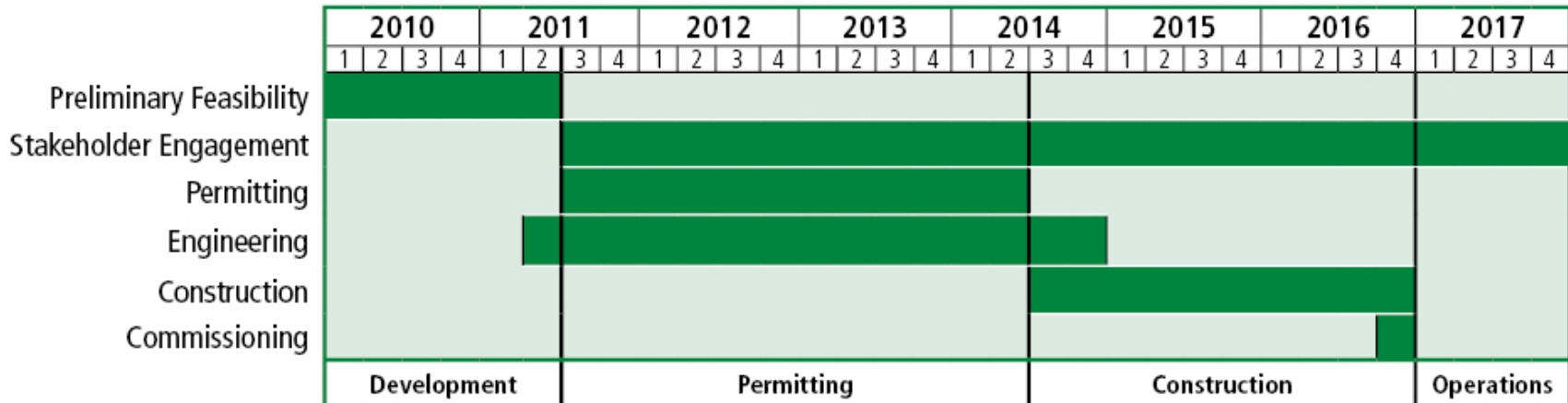
- **Pathfinder - Solely focused on Wyoming**
 - Owns/controls 675,000 acres (~5,000 MW WY potential)
 - Sophisticated environmental mitigation strategies
 - Financial backer is Sammons, a \$40 billion privately held, diversified enterprise
 - General Electric is a major player in the wind industry and will provide equipment to Pathfinder and is providing technical support
- **BP Wind Energy**
 - Over 1,330 MW in operation
 - 1,000 MW in an advanced stage of development
 - 10 wind farms in operation, 1 under commissioning
- **Horizon Wind Energy (subsidiary of EDP)**
 - Horizon has developed more than 3,600 megawatts (MW) and operates over 3,300 MW of wind farms
 - Over 20 offices and over 25 wind farms across the United States

Zephyr: Timeline & Key Activities



- **In order to be successful, all projects require regulatory, commercial and market support**
 - Development activities underway include route development, political & regulatory outreach and preparation for regulatory permitting processes
 - Zephyr and its WY generators continue to diligently advance the project
 - Zephyr is establishing market support prior to moving forward with significant siting & permitting activities

Zephyr Project Timeline



Zephyr: Project Strengths



- **Zephyr can be commercially viable and cost-effective solution for achieving environmental and renewable energy objectives in the west; and meeting RPS requirements**
 - Zephyr will help create the Eldorado Valley as a new renewable hub and pricing center for the Western Interconnection
- **Provides geographic diversity of renewable resources in the West**
- **Will provide jobs and tax benefits to states along its route, especially in WY**
 - In addition to the \$3 billion to build Zephyr (\$1.2 billion in WY), it will spur \$6-7 billion in investment to develop 3,000 MW of wind farms
- **Minimal WY collector system requirement**
 - Zephyr's wind generators are closely located to each other, minimizing collector system needs & associated environmental impacts and costs
- **A fully integrated transmission and generation project**
 - A team that encompasses all aspects necessary for success