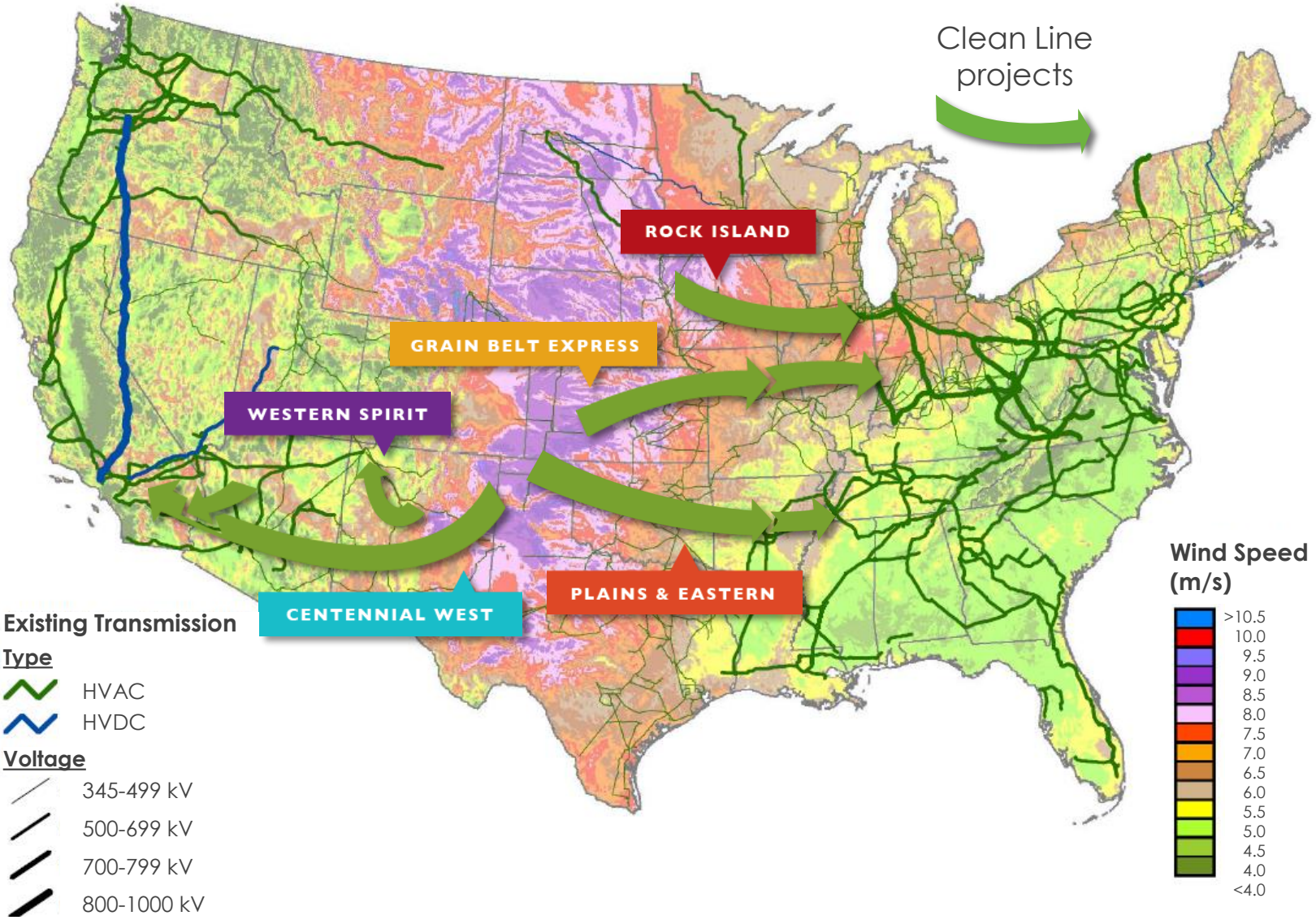
# Plains & Eastern Clean Line

*Project Overview*

CLEAN LINE
ENERGY PARTNERS

August 2016

# Clean Line's portfolio of large-scale transmission projects will connect the best wind resources to market



# Clean Line is an independent transmission developer backed by experienced partners

**Clean Line's investors have extensive experience in energy, transmission, and renewables, and include National Grid, Ziff Brothers Investment, and Bluescape Energy Partners.**

## nationalgrid

- Owns and operates the high-voltage electricity transmission network in England and Wales, as well as a number of HVDC links to continental Europe
- National Grid USA (U.S. subsidiary), owns and operates substantial electric and natural gas transmission and distribution assets in the Northeast, serving over 3.4 million electric customers and 3.6 million gas customers
- HVDC transmission experience in the U.S. includes the planned Northeast Energy Link (230-mile direct-current underground line from Canada/Maine to Southern New England)

## ZIFF BROTHERS INVESTMENTS

- Ziff Brothers Investments is a family-owned private investment firm that focuses on private equity investments in, among other sectors, the energy and energy-related sectors
- Additional investment in the Power & Energy sector includes Athabasca Oil, an Alberta-based company focused on the exploration and production of bitumen from oil sands in the Athabasca region of northeast Alberta, CA

## bluescape resources

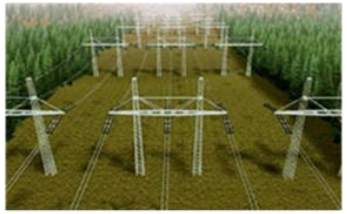
- Bluescape Energy Partners, LLC, is a private, independent energy investment and operating company. Bluescape's investors include universities, foundations and public pension funds
- Bluescape's investment in Clean Line is consistent with their long-term strategy of developing, acquiring, and exploring energy resources vital to the world's economy, health and welfare.
- John Wilder, executive chairman of Bluescape, served as CEO of TXU from 2004-2007. At the time, TXU Electric Delivery Company operated the largest transmission & distribution system in Texas

# Direct current transmission is the most efficient solution to tap distant wind resources

**Clean Line will utilize HVDC technology for the Plains & Eastern project because it is ideal for shipping power over long distances.** HVDC confers the following advantages in this application:

- Reliability – DC, unlike AC, allows **complete control of power flow** and prevents cascading outages
- Efficiency – Over long distances, **DC transfers more power** with lower line losses and with less infrastructure than comparable AC lines
- Smaller footprint – DC requires narrower right-of-way than equivalent AC configuration, resulting in **lower land use impact**

3000-4000 MW Capacity



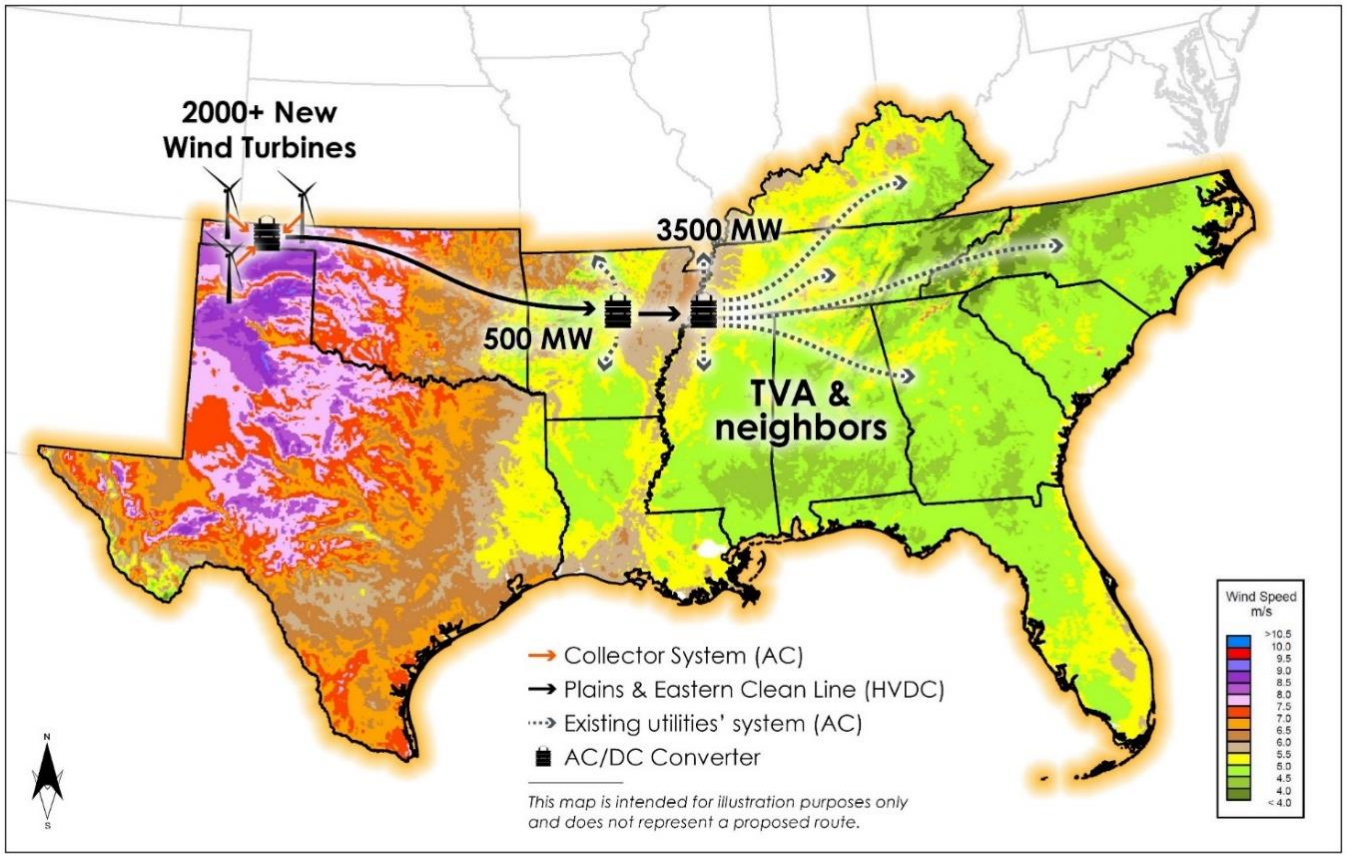
Three 500 kV AC lines

One ± 500kV DC bipole

**HVDC technology is also conducive to a merchant business model.**

- Converter stations function as on- and off-ramps that allow Clean Line to charge customers directly for transmission service capacity used
- Clean Line will sell transmission service to generators and/or load serving entities

# Plains & Eastern links transmission constrained, best-in-country wind resources to Southeastern markets




The Arkansas converter station interconnects with the MISO 500 kV system at ANO/Pleasant Hill where the Project will deliver **500 MW**. The Tennessee converter station interconnects with the TVA 500 kV system at Shelby Substation in western Tennessee where the Project will deliver **3,500 MW**.

# DOE issued Record of Decision in March 2016, concluding the agency's review and approving the Project

## NATIONAL ENVIRONMENTAL POLICY ACT


**Since 2010, Clean Line Energy has pursued approval under Section 1222 of the Energy Policy Act of 2005 to site the Plains & Eastern Clean Line project in Oklahoma and Arkansas. In March 2016, the Department of Energy issued a Record of Decision approving the project.**

### State Regulatory Approvals and Section 1222

- Clean Line Energy was approved as a public utility in Oklahoma (2011) and Tennessee (2015)
- Section 1222 fosters public/private partnerships to upgrade or build new electric transmission projects

### In the Record of Decision issued March 2016, the DOE

- Outlined its participation in the project
- Confirmed the inclusion of the Arkansas converter station
- Selected the route for the project in Arkansas and Oklahoma

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