PLAINS & EASTERN CLEAN LINE

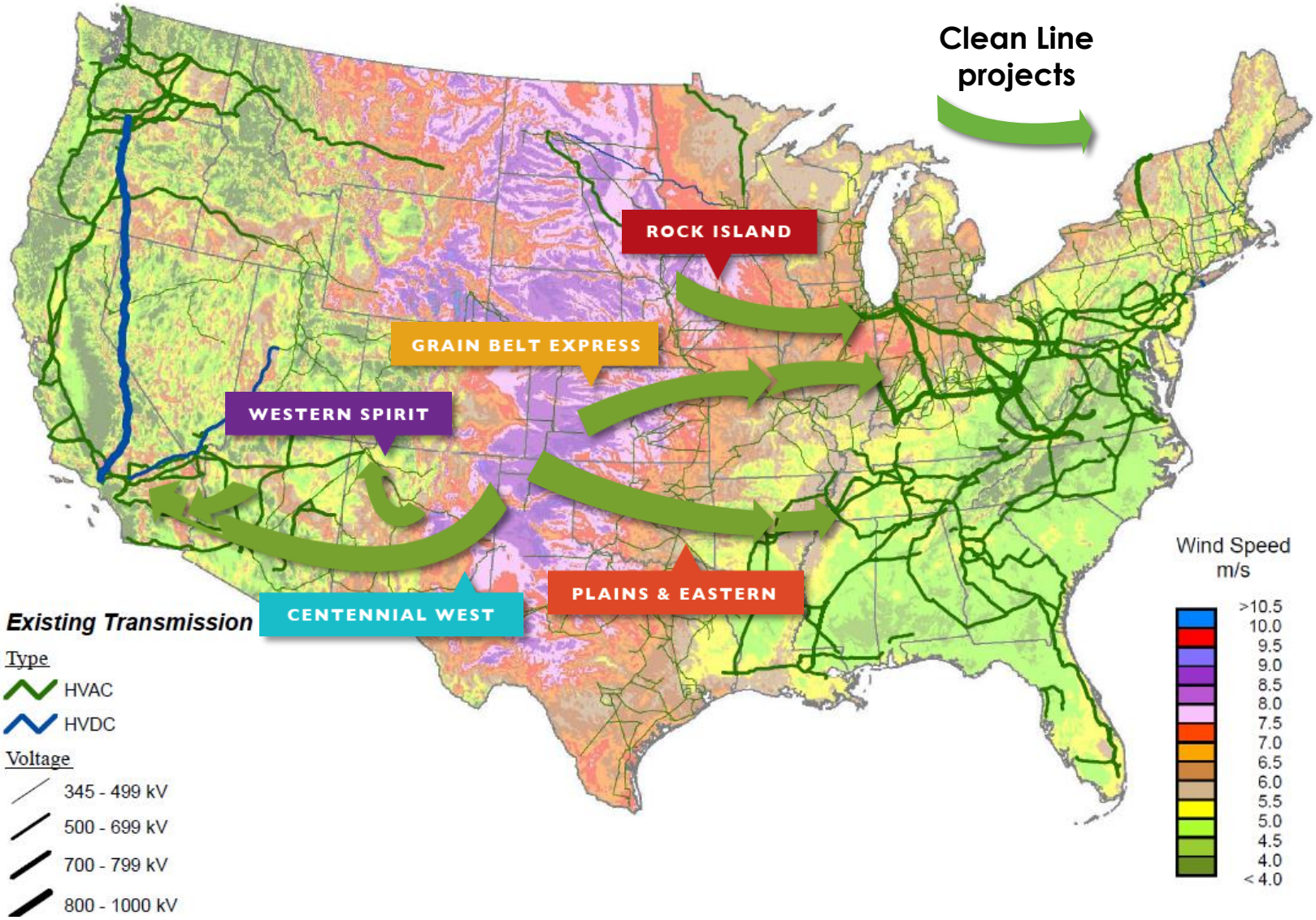
Presentation to the Joint Energy Committee of the Arkansas Legislature

December 16, 2013

Fayetteville, Arkansas

CLEAN LINE ENERGY PARTNERS

Clean Line's projects connect the best wind resources to load centers



National Grid is a key investor in Clean Line Energy

nationalgrid

CLEAN LINE ENERGY PARTNERS

- National Grid brings extensive experience in building, owning, and operating large transmission projects in the United States and overseas

- National Grid in the United States
  - owns and operates more than 8,600 miles of transmission
  - serves more than 7 million electricity and natural gas customers

- National Grid joins Clean Line's existing investors that include private equity firm ZBI Ventures

In late June 2013, Plains & Eastern issued a Request for Information to wind generators

Gathered information from wind developers in the Oklahoma Panhandle region that confirmed:

- High **demand** for Plains & Eastern transmission capacity
- Excellent wind resources, abundant production potential and **low prices**

16,510 MW
potential capacity

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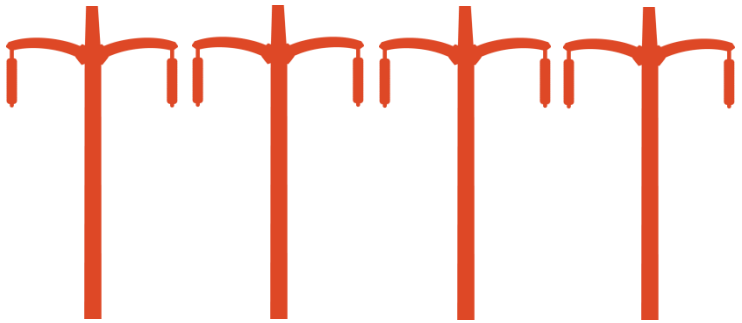


enough to fill Plains & Eastern 4+ times

Note: Clean Line is aware of additional developers with projects under development in the region.

Plains & Eastern Clean Line will result in cleaner air and better conservation of water resources

ENVIRONMENTAL BENEFITS

- CO_2 — 10 million tons carbon dioxide reduced
- SO_2 — 23 thousand tons sulfur dioxide reduced
- NO_x — 7 thousand tons nitrogen oxide reduced
- Hg — 135 pounds mercury reduced
- H_2O — 3.8 billion gallons saved

Source: Ventyx, 2012.

Federal environmental review process for Plains & Eastern Clean Line began in December 2012

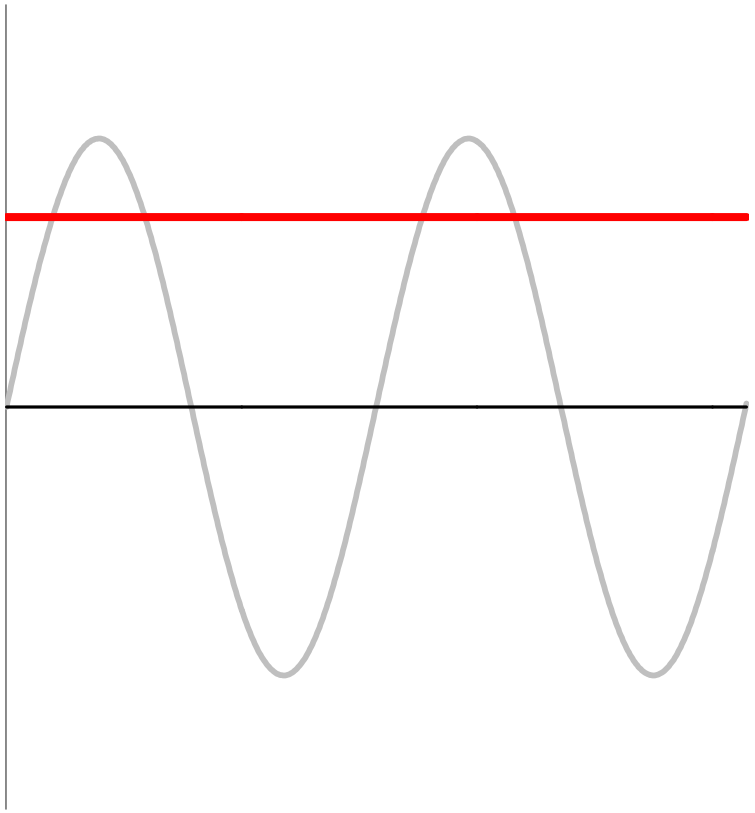
- NEPA requires that federal agencies consider alternatives, study the potential impacts of a decision, and receive public input on a proposed action
- DOE and Southwestern Power Administration considering participation under Section 1222 of Energy Policy Act of 2005
- DOE leading EIS and multiple agencies participating

NATIONAL ENVIRONMENTAL POLICY ACT PROCESS

What is Direct Current?

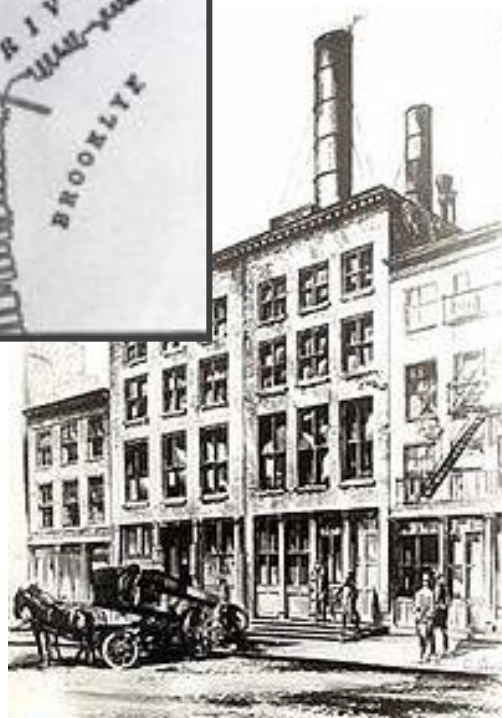
- **Alternating Current (AC)**
  – Magnitude of current varies with time. Most of grid is AC

- **Direct Current (DC)**
  – Magnitude of current is constant. Applications of high voltage direct current (HVDC) in U.S. and elsewhere.



First centralized generating station was Direct Current Pearl Street Station: 255-257 Pearl Street, Manhattan

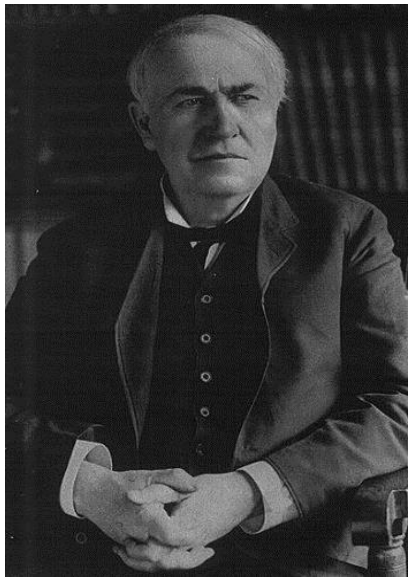
- Edison Illuminating Company
- 1882 – 1890
- 110 volts direct current
- 508 customers
- 10,164 lamps



War of the Currents (late 1880s)

Thomas Edison

(1847-1931)

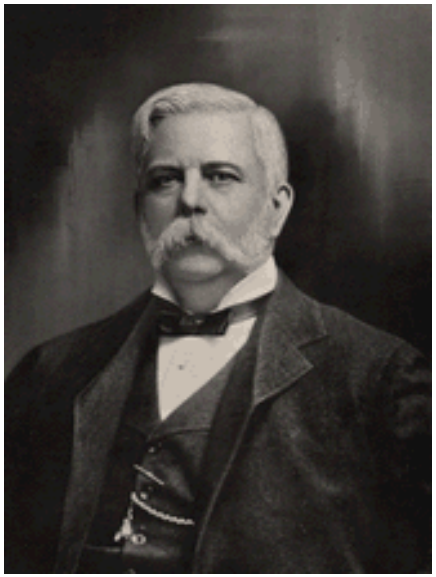


- Advocate of direct current (DC) power system
- Founder of General Electric

VS.

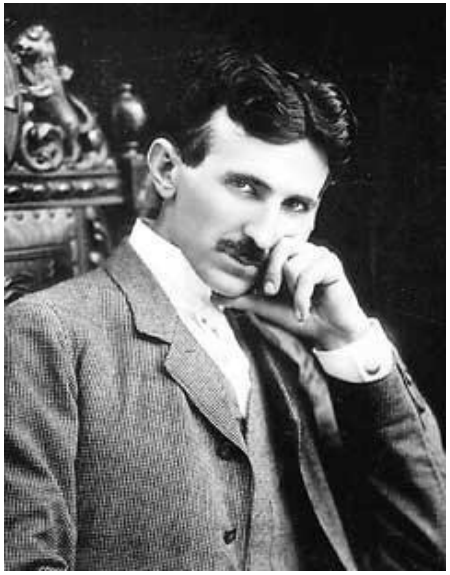
George Westinghouse

(1846-1914)



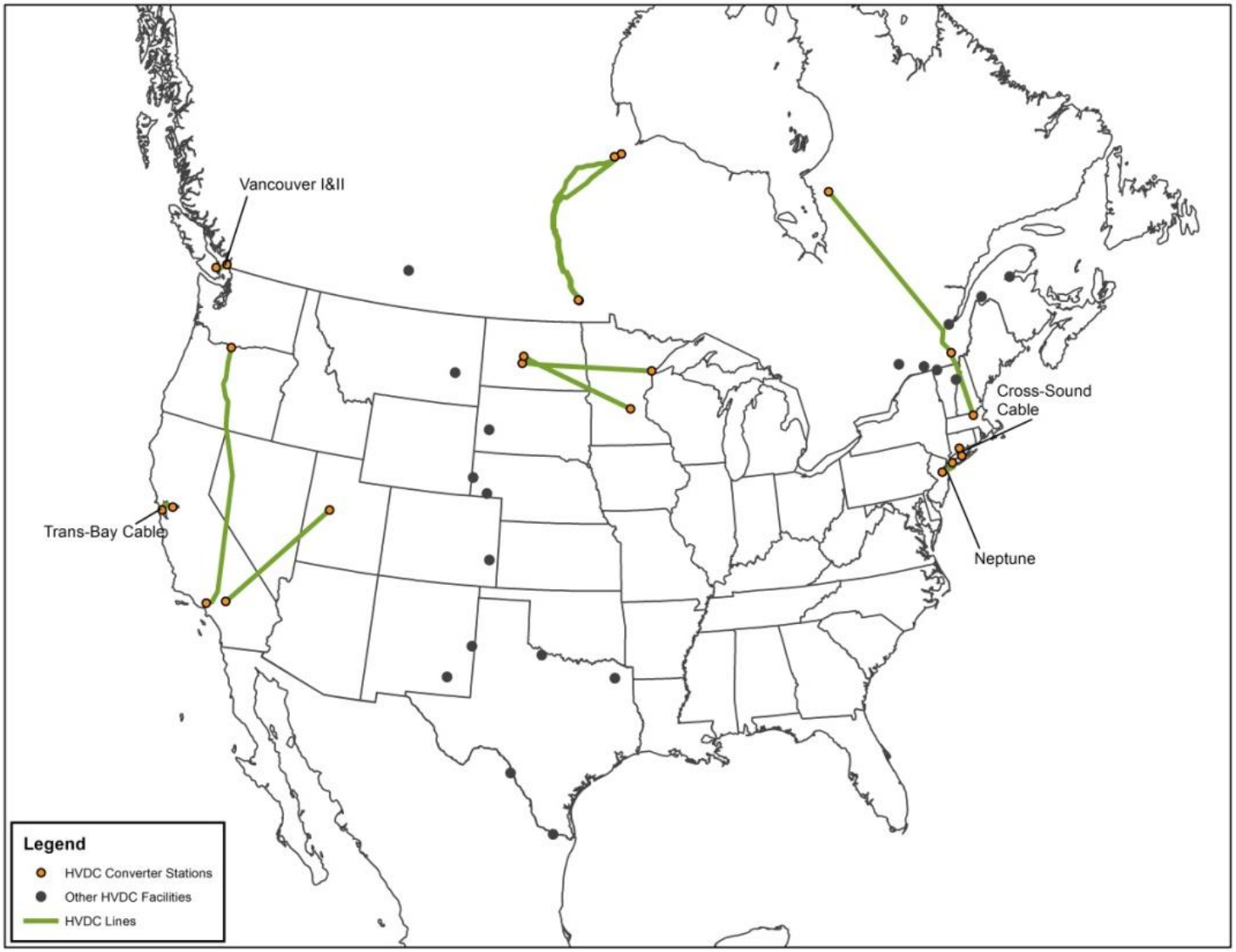
Nikola Tesla

(1856-1943)

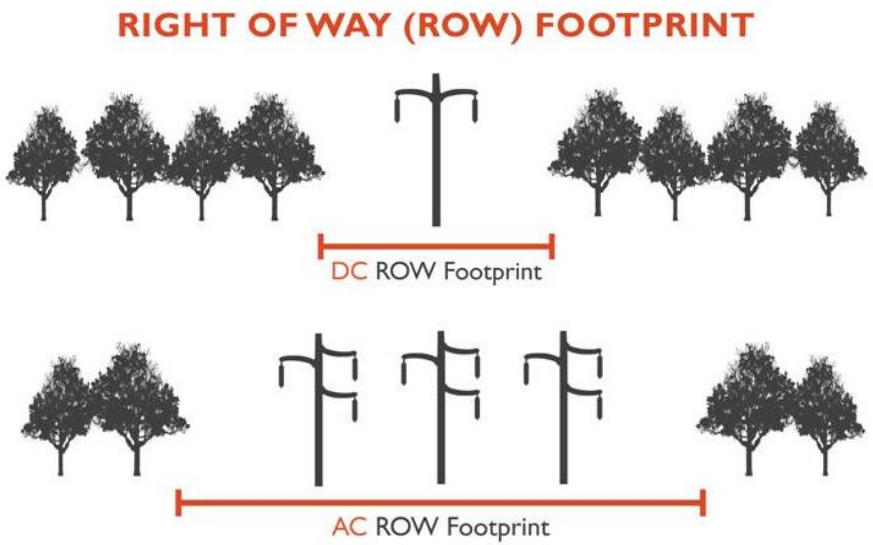


- Advocates of alternating current (AC) power system
- Founder of Westinghouse Electric Corporation
- Licensed polyphase machines from Tesla

HVDC facilities in North America

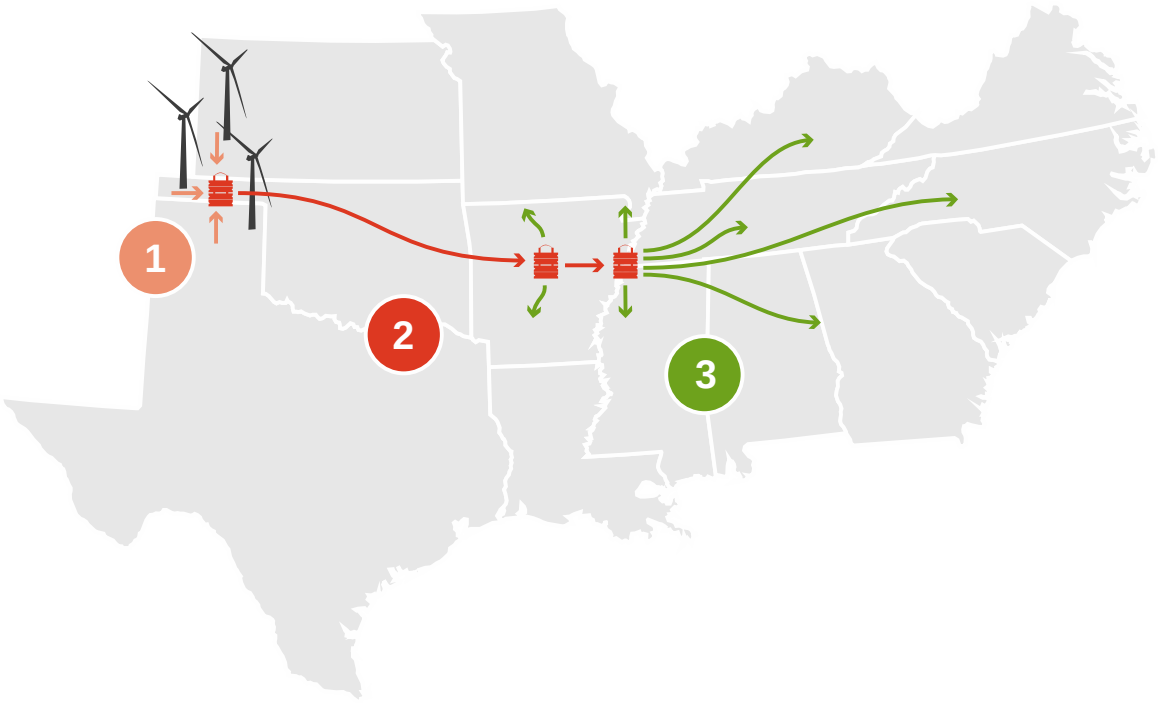


HVDC is the most efficient method to transmit large amounts of electricity over long distances



- **More efficient** — Lower line losses
- **Lower cost** — Requires less infrastructure, results in lower costs and lower prices for delivered renewable energy
- **Improved reliability** — Control of power flow enhances system stability and lowers cost of integrating wind
- **Smaller footprint** — Use narrower right-of-way than equivalent Alternating Current (AC)

Intermediate converter in Arkansas would deliver approximately 500 MW of clean energy



KEY

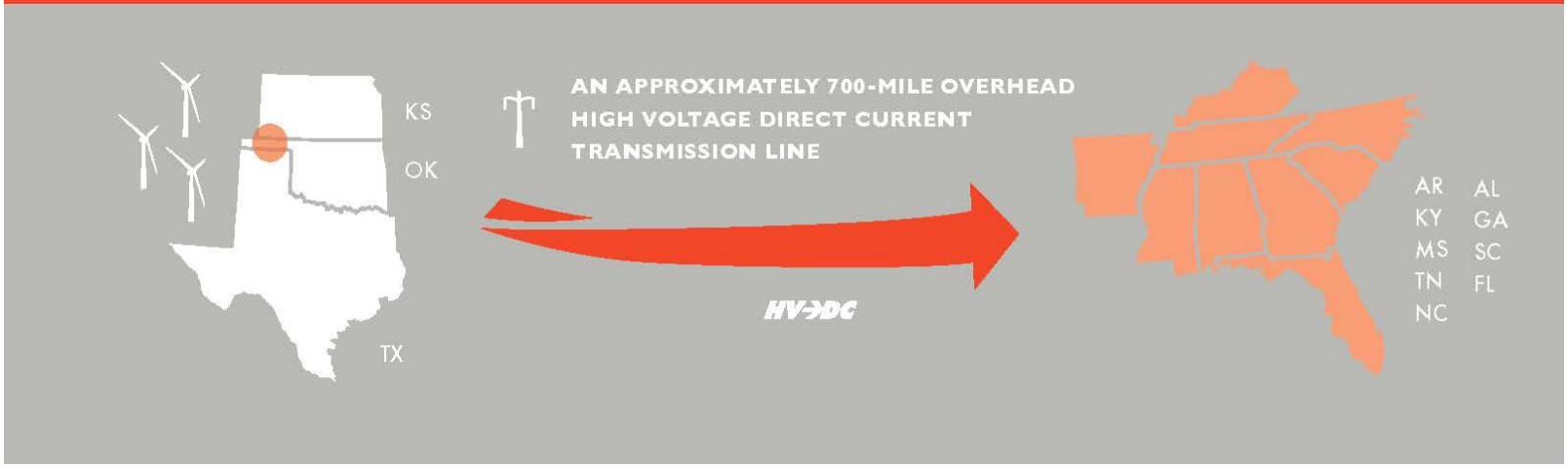
- **Leg 1:** Collector system (AC)
- **Leg 2:** Plains & Eastern Clean Line (HVDC)
- **Leg 3:** Utilities' distribution system (AC)
- AC/DC Converter

N.B.:This map is intended for illustration only and does not represent a proposed route.

Typical Converter Station

Plains & Eastern Clean Line will deliver up to 3,500 MW of clean energy to the Mid-South and Southeast

PLAINS & EASTERN CLEAN LINE



$2 BILLION IN PROJECT INVESTMENT

$7 BILLION OF NEW WIND FARM INVESTMENTS

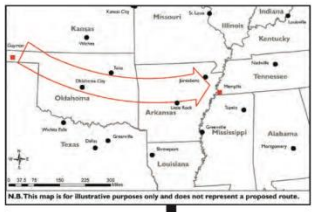
INCREASED MARKET COMPETITION

OVER 1 MILLION HOMES POWERED PER YEAR

Clean Line's iterative, multi-year routing process incorporates stakeholder input

Agency Pre-Design Meeting in Little Rock, AR

- Open and direct communication
- Work directly with stakeholders, public agencies and conservation groups
- Environmental responsibility principles

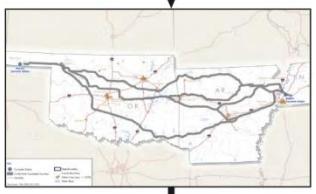


Study Area

- 2009–2010
- Broad geographic area
- End point determination

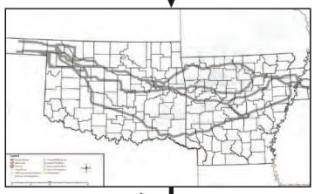
Stakeholder Outreach

County Outreach
2010
Agency and NGO Pre-design Meetings
2011



Candidate Corridors

- 2010
- Each 5 miles wide

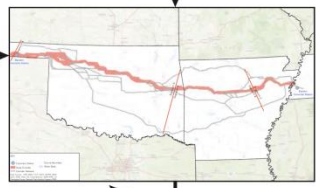


Corridor Network

- 2010
- Each 5 miles wide

Tribal Outreach
2011

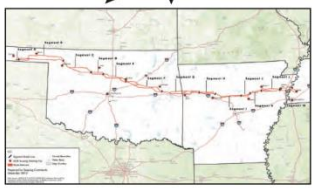
County Roundtables
2012



Study Corridor

- 2012
- One 5–8 mile wide corridor

Tribal Outreach
2012
Agency Pre-Permitting Meetings
2012
Public Open Houses
2012

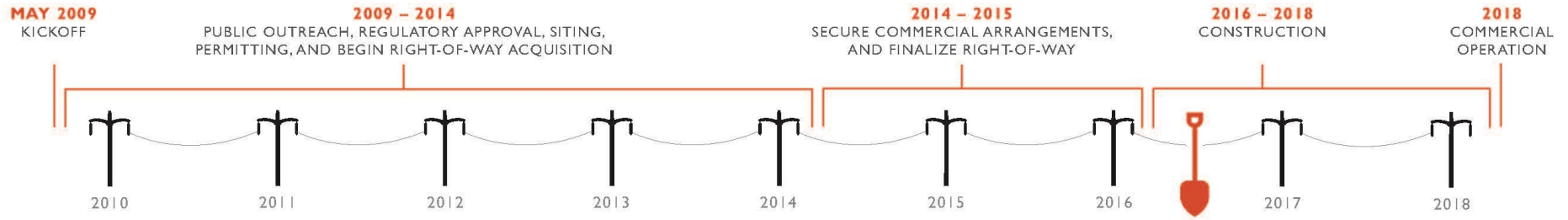


Network of Potential Routes

- Published with NEPA Notice of Intent December 2012
- One mile wide with segments

A methodical and transparent development process is underway that targets commercial operation in 2018

PLAINS & EASTERN CLEAN LINE SCHEDULE



Wind Turbine bade en route from LM Windpower, Little Rock AR

Plains & Eastern Clean Line will result in significant economic benefits to Arkansas

Consumer Benefits

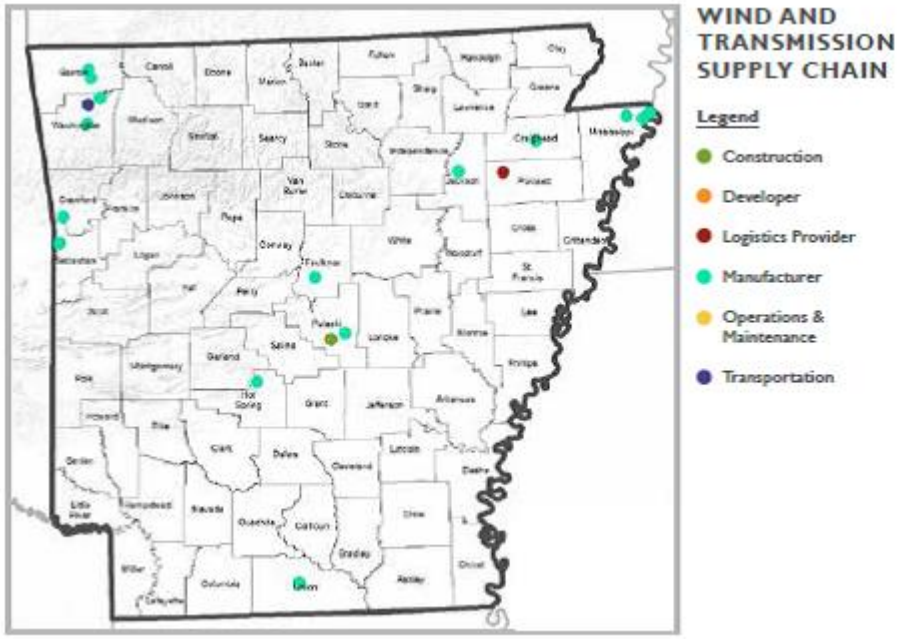
INCREASED MARKET COMPETITION BENEFITS ELECTRICITY CONSUMERS

Jobs

HUNDREDS OF CONSTRUCTION JOBS

Supply Chain

MORE THAN 15 WIND ENERGY SUPPLY CHAIN COMPANIES LOCATED IN ARKANSAS



MILLIONS IN ANNUAL REVENUES TO SUPPORT LOCAL COMMUNITIES

Emergency Services

Schools

Hospitals

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CLEAN LINE

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