

# GRAIN BELT EXPRESS CLEAN LINE

GRAIN BELT EXPRESS CLEAN LINE

December 2013

## PUBLIC OPEN HOUSE

The purpose of this Public Open House is to:

- Introduce the Grain Belt Express Clean Line
- Share our transmission line routing process
- Seek your feedback to help us refine potential routes



\$2 BILLION INVESTMENT IN TRANSMISSION



\$7 BILLION IN NEW WIND FARM INVESTMENTS



5000+ CONSTRUCTION JOBS



500+ OPERATIONS JOBS



MANUFACTURING JOBS



LOCAL BUSINESS PARTNERSHIPS



PROPERTY TAX REVENUES

## PROJECT OVERVIEW

The Grain Belt Express Clean Line is an approximately 750-mile overhead, direct current transmission line that will deliver low-cost, renewable energy from western Kansas to Missouri and states farther east. Similar to the trains that carry grain harvested in the Midwest to markets, the Grain Belt Express Clean Line will move wind energy from its source in the grain belt of the country to markets with strong demand for low-cost, clean power.

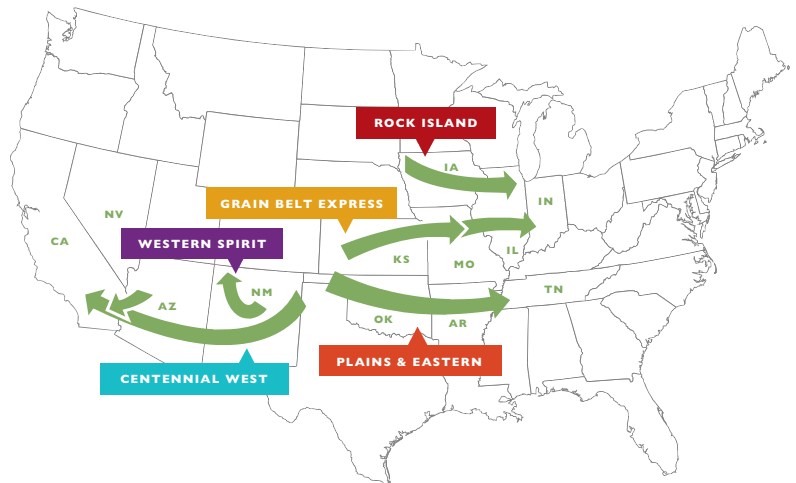
## CLEAN LINE ENERGY

### The Challenge

The United States has some of the best renewable energy resources in the world; however, the transmission infrastructure does not exist to transport the energy generated from these resources to communities that need the power. Clean Line Energy is working to address this challenge.

### The Clean Line Energy Solution

Clean Line Energy is developing long-haul transmission lines to connect abundant renewable energy to communities that need it. The Grain Belt Express Clean Line will deliver low-cost, clean, renewable energy to communities in Missouri, Illinois, Indiana, and states farther east.



**CLEAN LINE**  
ENERGY PARTNERS

# ROUTING A TRANSMISSION LINE

Clean Line Energy is developing the Grain Belt Express Clean Line route in a way that attempts to minimize impacts on existing land use and natural and cultural resources. The routing team is gathering a wide range of information through agency coordination, public outreach, existing geographic information sources, and field reconnaissance to inform the route planning process. The route planning process takes into consideration numerous routing factors, such as:

- Residences
- Agricultural lands
- State and federal lands
- Recreational areas
- Water resources
- Known cultural resources
- Schools
- Airports/airstrips
- Churches
- Sensitive habitats and protected species
- Community feedback
- Engineering constraints

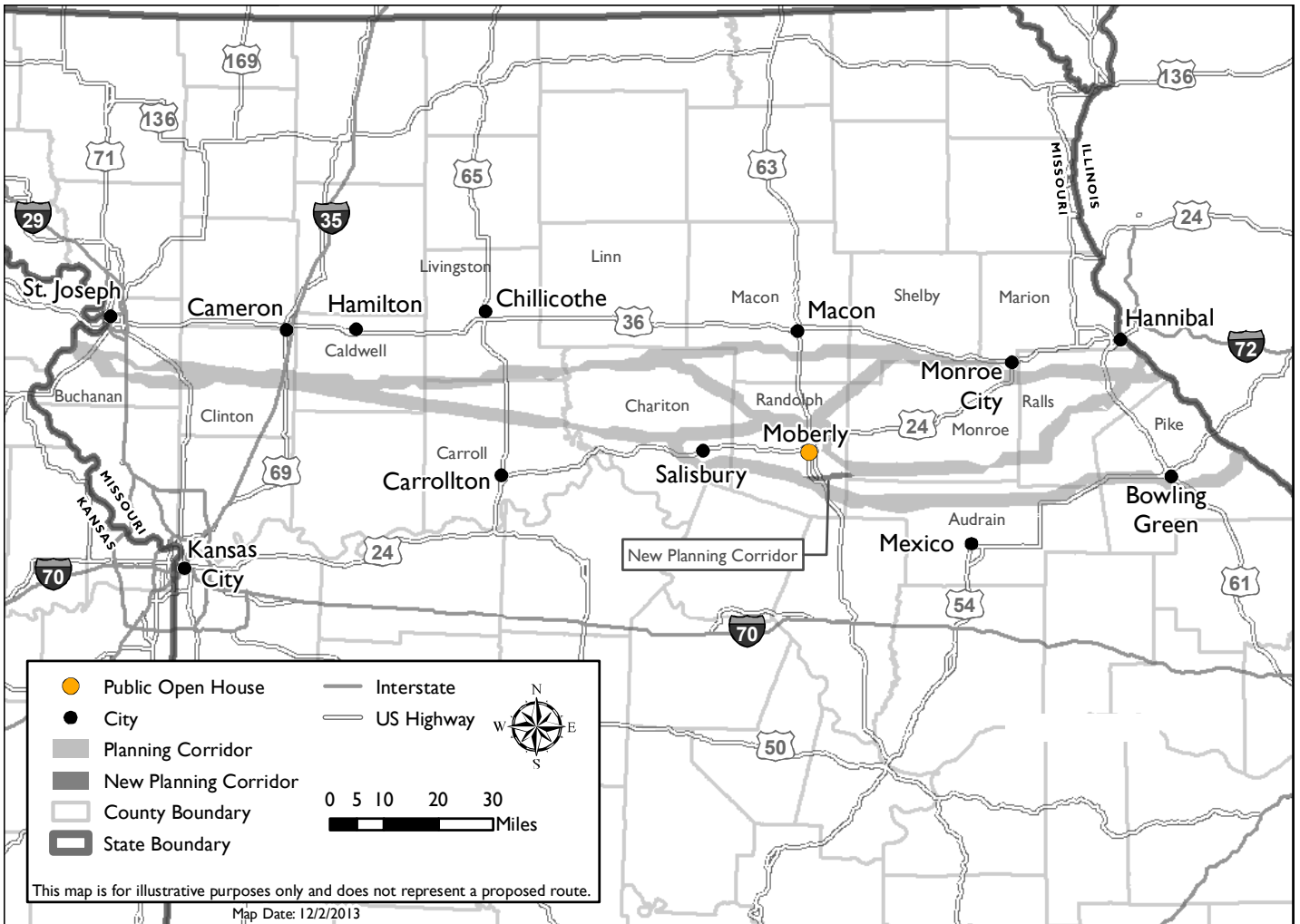
With input from local officials, conservation organizations, state and federal agencies, and other stakeholders, potential routes have been identified for the Grain Belt Express Clean Line transmission project in Missouri. Because the potential routes are subject to change, landowners with property within a “planning corridor” around each potential route were invited to attend Public Open Houses to provide feedback.

# MISSOURI ROUTING PROCESS



## REFINED NETWORK OF POTENTIAL ROUTES

Over the summer, Clean Line Energy hosted 12 Public Open Houses to seek feedback on potential routes for the Grain Belt Express Clean Line in Missouri. We also received feedback on potential routes through letters, online, and over the phone. In the review process after the Public Open Houses, the routing team eliminated a number of potential routes and identified one additional potential route to consider with public input. These changes are reflected in the Refined Potential Route Network below. This Public Open House is meant to review the additional potential route added during the review process.



## WHAT'S NEXT AFTER THIS PUBLIC OPEN HOUSE?

The feedback we receive at this Public Open House will help the routing team further refine the potential routes for the transmission line and ultimately select one proposed route to file for approval with the Missouri Public Service Commission. Landowners will be notified if their property is along the proposed route.

Detailed maps of the potential routes and informational materials are available on the project website. In addition to submitting a comment card at the Public Open Houses, landowners and other interested parties can submit comments via the Grain Belt Express Clean Line website and the hotline number.

## FREQUENTLY ASKED QUESTIONS

### How do I submit feedback on the potential routes in Missouri?

Please submit feedback on the maps or your comment card, on the project website, or by calling the hotline number.

### Where can I find the aerial maps shown at the Public Open House?

Please visit the project website to view the aerial maps that are available at the Public Open House.

### Why High Voltage Direct Current (HVDC)?

The Grain Belt Express Clean Line will utilize HVDC transmission, an established technology that is ideal for moving large amounts of power over long distances. HVDC transmission lines use a narrower right-of-way than equivalent alternating current transmission lines and lose less power along the way.

### Who will pay for the Grain Belt Express Clean Line?

Grain Belt Express intends to privately finance the development and construction of the project and sell transmission capacity to renewable energy generators in Kansas and to utility customers in Missouri, and states farther east that choose to buy the renewable energy.

### When will construction begin?

The timeline of the project is intertwined with the regulatory processes in each state the project will traverse. After Grain Belt Express receives the appropriate approvals from each state's public utility commission, Grain Belt Express will complete remaining easement acquisition, surveying, environmental permitting, and signing up customers. Construction will take two to three years and could begin as soon as 2016. Grain Belt Express is committed to using qualified, local vendors to assist in constructing the transmission line.

### Where should I submit my business information to be considered for the construction of the project?

We are always seeking to identify businesses that would like to provide services during the construction of the Grain Belt Express Clean Line. If you are interested in submitting your business information, please visit:

[www.grainbeltexpresscleanline.com](http://www.grainbeltexpresscleanline.com).



## CONTACT US

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### Grain Belt Express Clean Line Contacts

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Toll-Free Hotline (855) 665-3438



**VISIT US ON THE WEB**

[WWW.GRAINBELTEXPRESSCLEANLINE.COM](http://WWW.GRAINBELTEXPRESSCLEANLINE.COM)


**CLEAN LINE**  
ENERGY PARTNERS

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# WELCOME!

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- Share our transmission line routing process
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**JOB**  
**S**



**LOCAL**  
**GROWTH**



**CLEAN**  
**AIR**



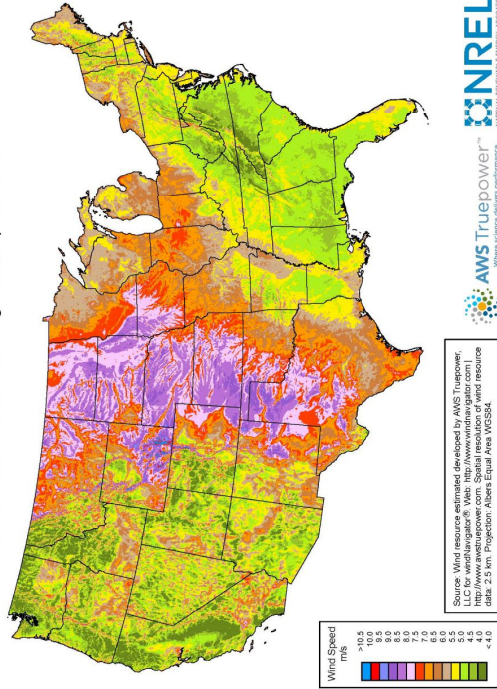
# DELIVERING CLEAN ENERGY TO MARKET



## GRAIN BELT EXPRESS CLEAN LINE

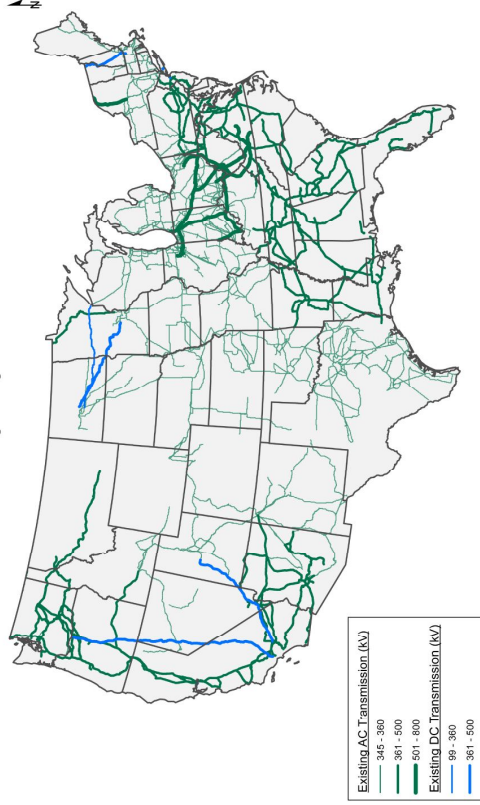
### U.S. Wind Resources

United States - Annual Average Wind Speed at 80 m

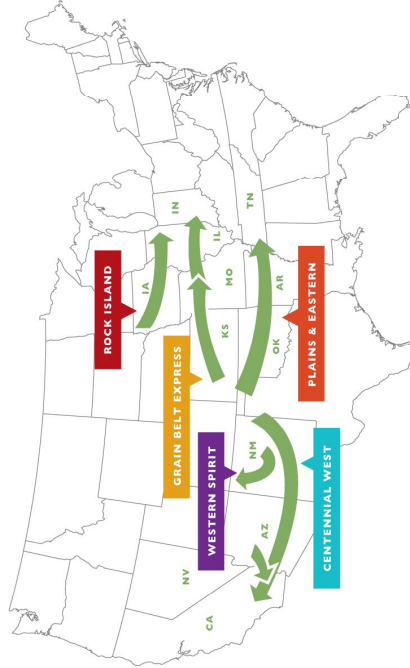


### Existing Transmission Lines

U.S. High Voltage Transmission Grid



### Clean Line Energy Solution



**Clean Line Energy is developing long-haul, transmission line projects to connect the best renewable energy resources to communities that need the power.**



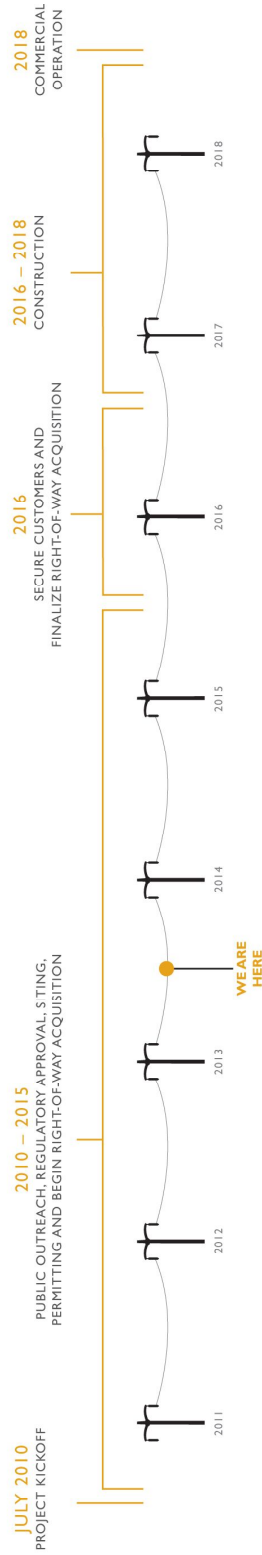
# GRAIN BELT EXPRESS CLEAN LINE

## GRAIN BELT EXPRESS CLEAN LINE



The Grain Belt Express Clean Line is a 750-mile overhead, direct current transmission line that will deliver low-cost, renewable energy from Kansas to Missouri, Illinois, Indiana, and states farther east. Similar to the trains that carry grain harvested in the Midwest to markets, the Grain Belt Express Clean Line will move wind energy from its source in the grain belt of the country to markets with a strong demand for low-cost, clean power.

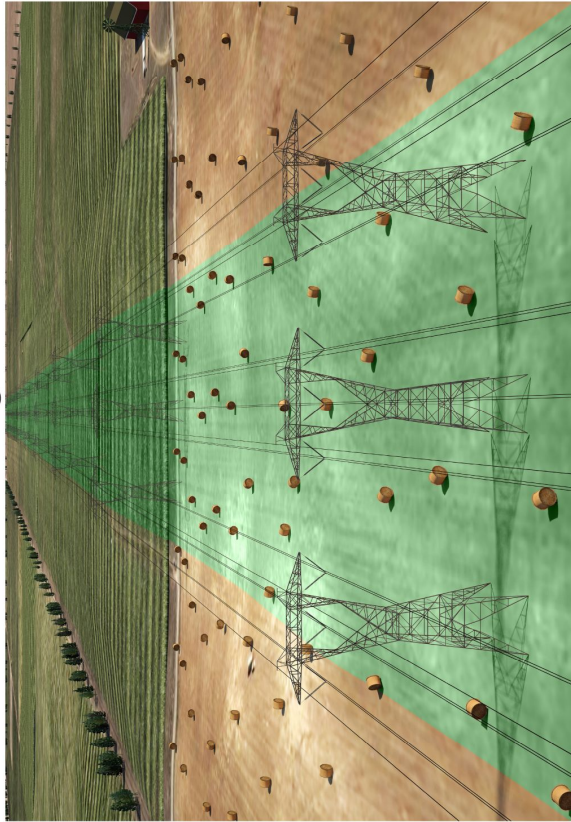
## GRAIN BELT EXPRESS CLEAN LINE SCHEDULE



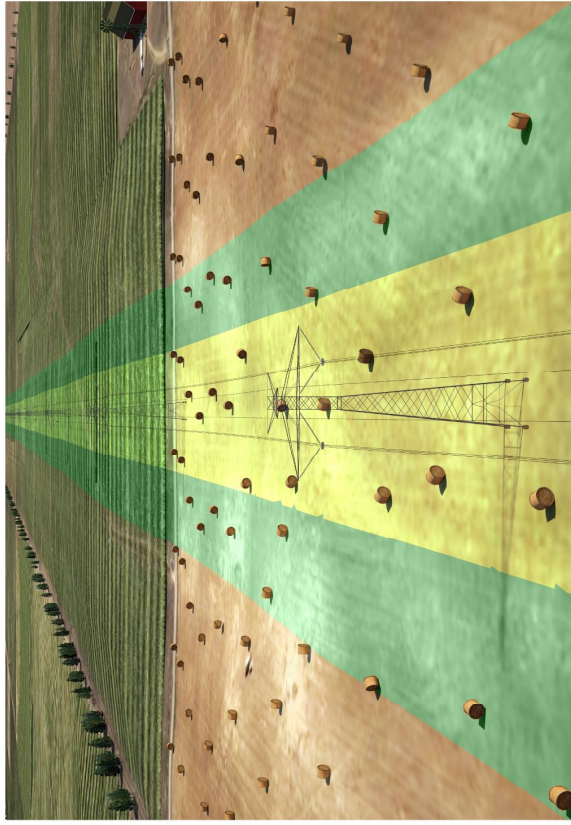
# BENEFITS OF HIGH VOLTAGE DIRECT CURRENT (HVDC)

## GRAIN BELT EXPRESS CLEAN LINE

Alternating Current



Direct Current



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

**SMALLER FOOTPRINT**

Uses narrower right-of-way than comparable AC lines.

**MORE EFFICIENT**

Transfers power with less infrastructure and lower line losses than alternating current (AC) lines moving a comparable amount of power over long distances.

**LOWER COST**

Requires less infrastructure and has lower line losses, resulting in lower costs and lower prices for clean energy.

**IMPROVED RELIABILITY**

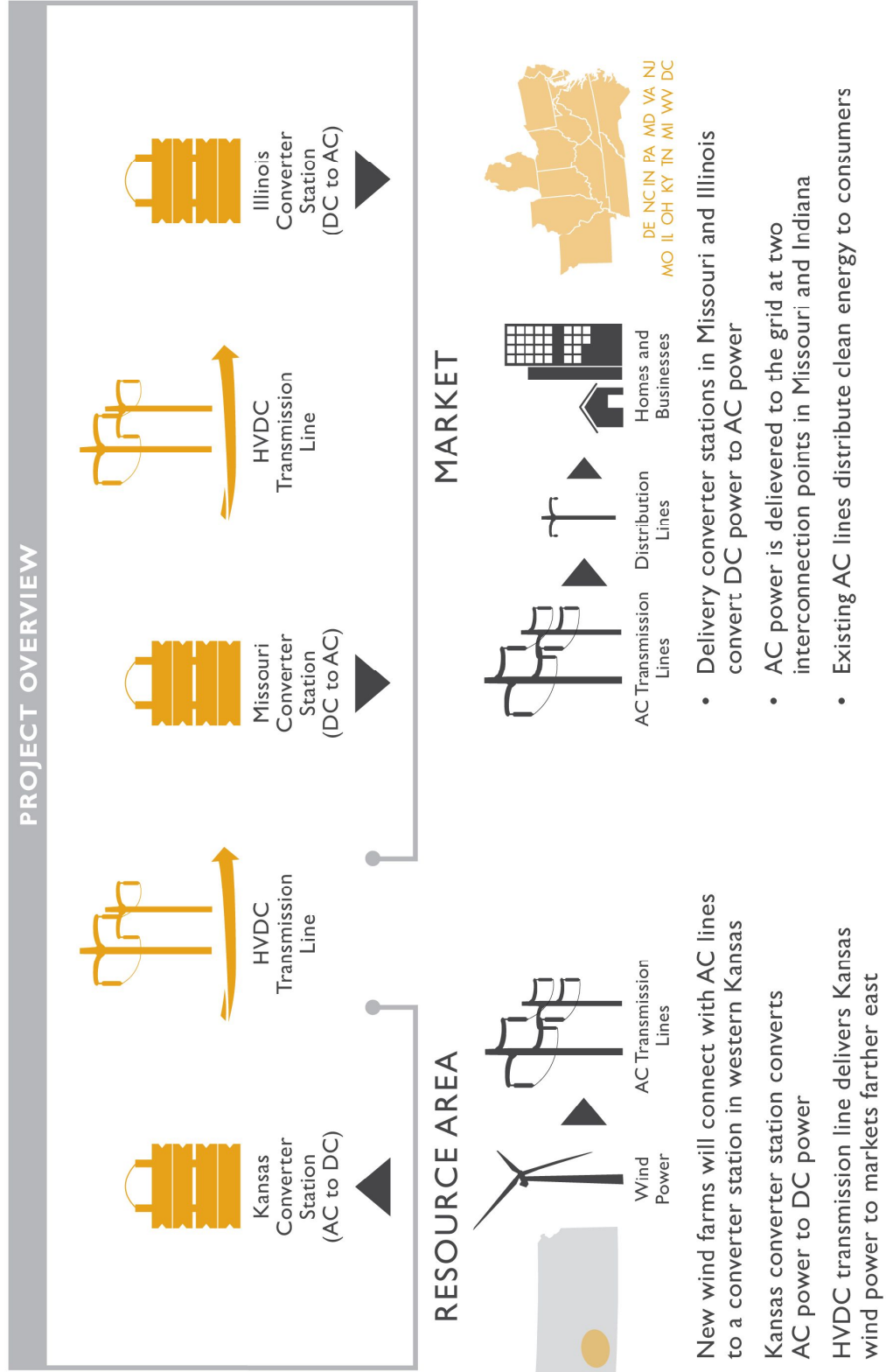
Provides the operator complete control over power flow and facilitates the integration of wind energy from different resource areas.





# DELIVERING KANSAS WIND POWER WITH HVDC

## GRAIN BELT EXPRESS CLEAN LINE



- New wind farms will connect with AC lines to a converter station in western Kansas
- Kansas converter station converts AC power to DC power
- HVDC transmission line delivers Kansas wind power to markets farther east

- Delivery converter stations in Missouri and Illinois convert DC power to AC power
- AC power is delivered to the grid at two interconnection points in Missouri and Indiana
- Existing AC lines distribute clean energy to consumers



# ECONOMIC BENEFITS

## GRAIN BELT EXPRESS CLEAN LINE



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\$7 BILLION IN NEW WIND FARM  
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MANUFACTURING JOBS



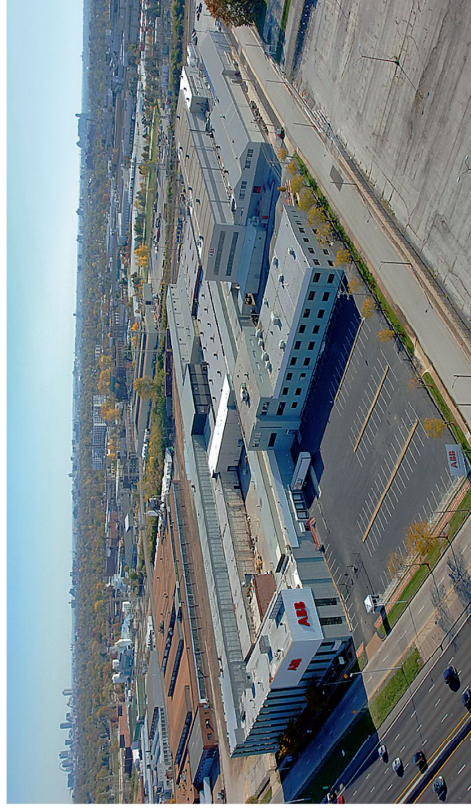
LOCAL BUSINESS PARTNERSHIPS



PROPERTY TAX REVENUES



“ABB is excited to be involved in a project that will deliver low-cost, clean energy to Missouri, where we have two large manufacturing operations that support the wind energy and transmission industries,” said Richard Bocim, ABB’s Vice President of Commercial Operations – Transformers. “Our agreement with Grain Belt Express Clean Line will represent 20 jobs in our St. Louis manufacturing facility.”

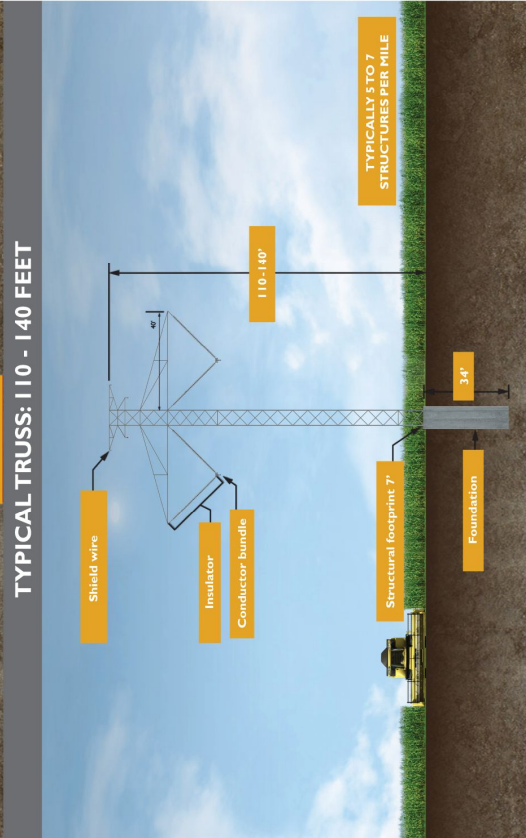
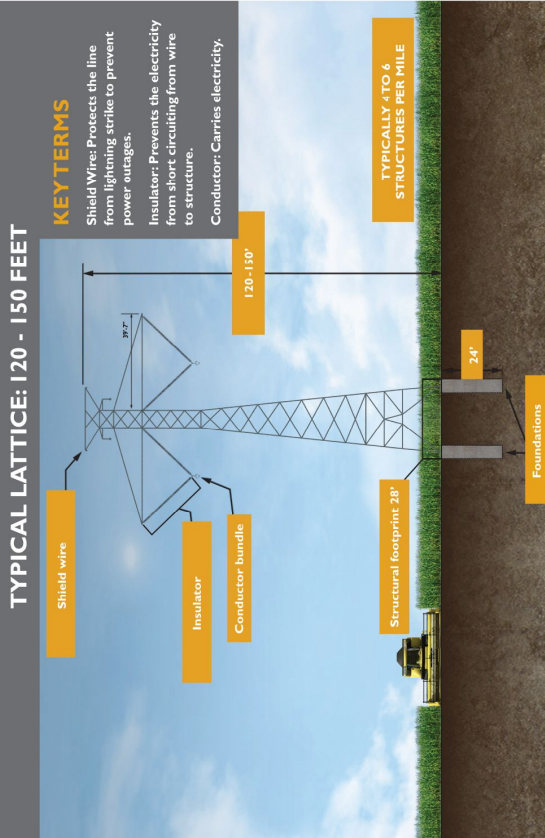


ABB’s manufacturing and repair facility in St. Louis.



# TYPICAL STRUCTURES

## GRAIN BELT EXPRESS CLEAN LINE



# OUTREACH AND ROUTING

## GRAIN BELT EXPRESS CLEAN LINE

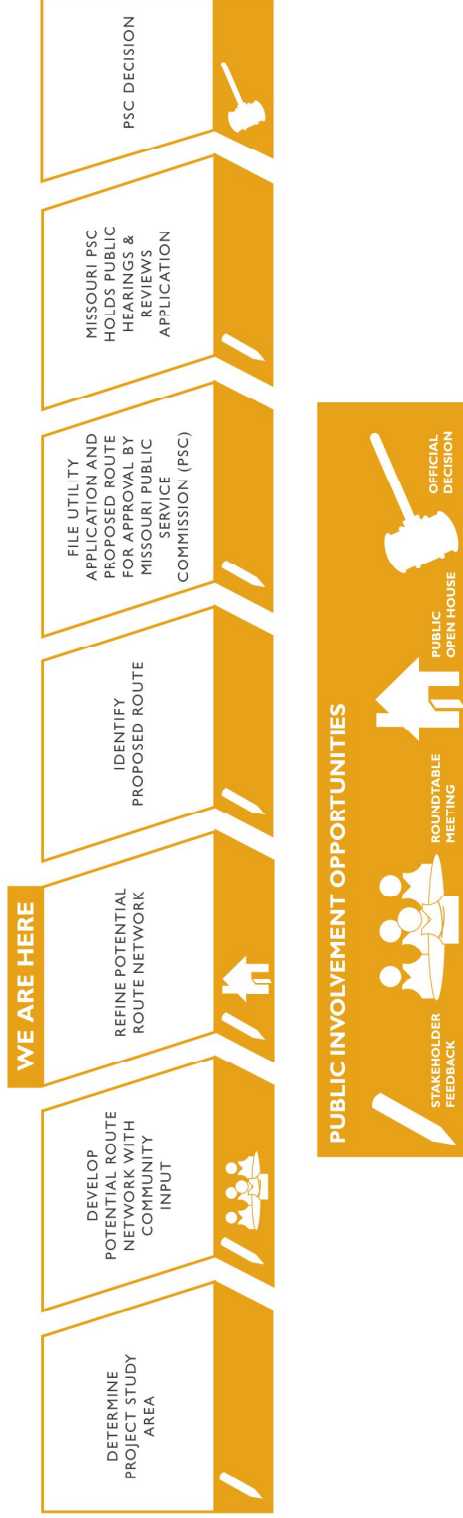


### Extensive Outreach in Missouri

- Hosted community roundtable meetings with more than 250 people in 24 counties across Missouri to seek input on potential routing options
- Held meetings with nearly 1,000 people including county commissioners and environmental groups
- Met with more than 80 local business representatives at Local Business Opportunity Meetings in Moberly, Chillicothe, Mexico, and Hannibal

**Public involvement is an important part of developing the Grain Belt Express Clean Line. We are committed to engaging with the public in the decision-making process.**

## MISSOURI ROUTING PROCESS



# LANDOWNER RELATIONSHIPS

## GRAIN BELT EXPRESS CLEAN LINE



### Grain Belt Express Clean Line is committed to working closely with landowners

#### WHY WE'RE HERE TODAY

We are here to seek your feedback on potential routes and to better understand your area, so we can work to find a proposed route that minimizes impact.

#### COMPENSATION PACKAGES WILL CONSIDER A VARIETY OF FACTORS

- Value of property based on comparable sales or appraisals in the local area
- Size of easement (acres)
- Structure type and quantity of structures on property
- Impacts during construction
- Conditions specific to the parcel

#### AGRICULTURAL IMPACT MITIGATION POLICY

Our policy commits Clean Line to general practices that can be incorporated to minimize, reclaim, and mitigate impacts as they relate to agricultural lands.

#### CODE OF CONDUCT

Grain Belt Express Clean Line's Code of Conduct details how employees and contractors will treat landowners in a fair and respectful manner.



# EASEMENTS: LANDOWNER COMPENSATION

## GRAIN BELT EXPRESS CLEAN LINE

The information provided below is not an offer. No party shall incur any obligation with respect to the subject matter of this board until a definitive agreement is signed among the requisite parties.

### TOTAL COMPENSATION:

**Easement payment + Structure payment = More than 100% of fair market value**

### COMPENSATION COMPONENTS:

<b>Easement payment</b>	100% of fair market value		
	<b>Structure Type</b>	<b>Annual Payment</b>	<b>or One-Time Payment</b>
<b>Structure payment</b>	truss or monopole	\$500 per structure	or \$6,000 per structure
	lattice	\$1,500 per structure	or \$18,000 per structure

Clean Line will compensate for related damages, such as:

- Crop damage
- Commercially marketable timber
- Irrigation or drainage interference

### LANDOWNER COMPENSATION EXAMPLE FOR A TYPICAL HALF-MILE EASEMENT:

If a parcel has a fair market value of \$4,000 per acre, for a 150-foot wide right-of-way, the owner would receive \$72,400 for the easement and 2 lattice structures, or \$54,400 for the easement and 3 truss structures (if the landowner chooses a one-time structure payment).



# ROUTING CONSIDERATIONS

## GRAIN BELT EXPRESS CLEAN LINE

- Grain Belt Express is developing the transmission line route in a way that attempts to minimize impacts on land use and natural and cultural resources.
- The team is gathering a wide range of information through agency coordination, public outreach, existing geographic information sources, and field reconnaissance to inform the route planning process.
- The route planning process takes into consideration many factors, such as:

### ROUTING CONSTRAINTS

- Residences
- Agricultural lands
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- Recreational area
- Water resources
- Known cultural resources
- Schools
- Airport/airstrips
- Churches
- Sensitive habitats and protected species
- Community feedback
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### ROUTING OPPORTUNITIES

- Paralleling existing linear infrastructure
  - Pipelines
  - Transmission lines
  - Railroads
  - Roads
- Following existing divisions of land
  - Property boundaries
  - Fence lines
  - Section or half-section lines



# POTENTIAL ROUTES IN MISSOURI

## GRAIN BELT EXPRESS CLEAN LINE

