



# NEBRASKA WIND AND SOLAR CONFERENCE

OCTOBER 25, 2022





# Clean Power Nebraska

**3,261 MW**

Operating wind, solar, and energy storage capacity in Nebraska.

State rank:

**21st**



**889,000**

Homes that can be powered by clean energy generated in Nebraska.



**27.9%**

Share of all electricity that comes from wind, solar, and energy storage power plants.

State rank:

**11th**



The clean power industry is an important job creator in Nebraska with a clean energy workforce of

**2,200**



**\$6 billion**

Capital invested in wind, solar, and energy storage projects in Nebraska.



Clean power invests in local Nebraska communities, providing property, state, and local taxes in 2022 totaling

**\$15.8 million**



Clean power projects provide extra income to farmers, ranchers, and other private landowners. In 2022, these drought-proof land lease payments totaled

**\$34.3 million**



**8,717,000**

Metric tons of CO<sub>2</sub> emissions avoided thanks to wind, solar, and storage projects in Nebraska — equivalent to taking

**1,900,000**

cars off the road.



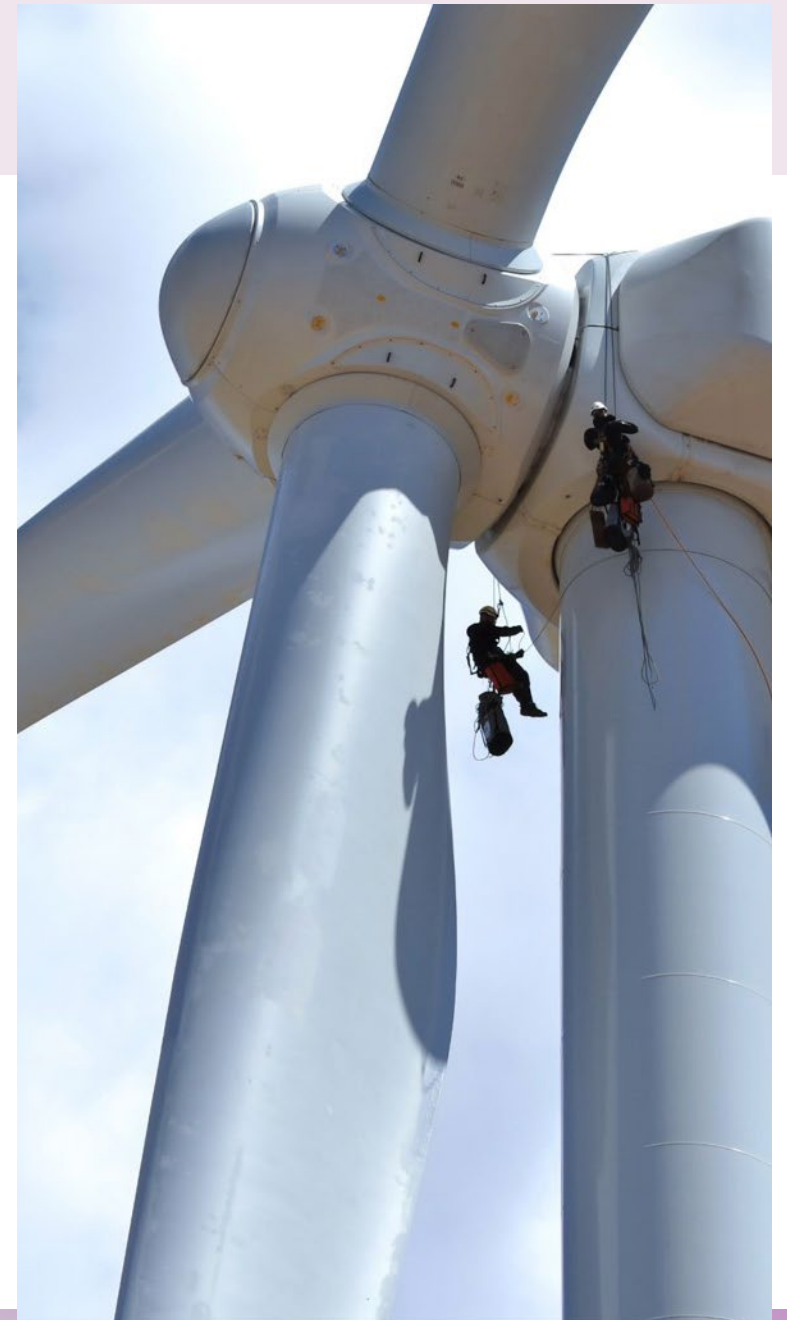
In 2022, wind, solar, and energy storage plants in Nebraska avoided water consumption totaling

**2 billion gallons**



# Infrastructure Investment and Jobs Act

- The Infrastructure Investment and Jobs Act (IIJA) (often called the **Bipartisan Infrastructure Law**)—passed in Nov.— is the largest investment in clean energy infrastructure in American history.
- **\$65 billion** for the power sector—and much of that new spending directed to clean energy programs.
  - The Administration is also planning to use **existing spending authority** enacted through other legislation, such as the Energy Act of 2020, to drive clean energy.
- The IIJA also includes significant non-funding **regulatory changes** that can help spur clean energy.



# Funding Overview

The funding in the IIJA includes **three major areas** relevant for clean energy infrastructure—most of the spending is housed in the **Department of Energy (DOE)—\$50 billion:**

- **Delivering clean power (\$21.3 billion)**
- **Clean energy demonstration projects (\$21.5 billion)**
- **Clean energy manufacturing (\$8.6 billion)**
- The following slides attempt to unpack these new and existing spending authorities, as well as related policy changes.



# New/Existing Funding Opportunities & Regulatory Changes

- Transmission
- Energy Storage
- Wind
- Solar
- Hydrogen
- Rare Earth Minerals/Elements

# IIJA Funding by DOE Offices

*(Note: New programs appear in bolded)*

- State Energy Program: **\$500m** for grants to communities, cities, states, U.S. territories, and Indian tribes **to develop and implement clean energy programs and projects that will create jobs.**
- Office of Energy Efficiency and Renewable Energy
  - **\$3b** for battery manufacturing and recycling grants
  - **\$3b** for battery materials processing grants
  - **\$750m** for advanced energy manufacturing and recycling grants to small and medium-sized manufacturers
  - **\$125m** for battery and critical mineral recycling R&D grants
- Office of Electricity
  - **\$5b** for grants to prevent outages and enhance the resilience of the electric grid
  - **\$3b** for grants for to deploy technologies that enhance grid flexibility
- Fossil Energy and Carbon Management
  - **\$600m** for grants for RD&D of alternatives to critical minerals
  - **\$140m** for rare earths demonstrations facility grants
  - **\$127m** for R&D grants to improve security of rare earth elements

## IIJA Funding by DOE Offices (cont'd)

- (new programs are bolded)
  - Office of Energy Efficiency and Renewable Energy
    - **\$1b to demonstrate technologies that produce clean hydrogen using electrolyzers (cooperative agreement)**
    - **\$500m for clean hydrogen manufacturing recycling program (grants, contracts, cooperative agreements, and any other agreements authorized under federal law)**
    - **\$40m for wind energy tech recycling R&D (cooperative agreement)**
    - \$60m for wind energy technology program (cooperative agreement)
    - \$40m for solar improvement R&D (cooperative agreement)
    - **\$20m for new solar R&D (cooperative agreement)**
    - **\$20m for solar recycling R&D (cooperative agreement)**
    - **\$10m for lithium-ion recycling prize (prize)**
  - Fossil Energy and Carbon Management
    - **\$75m for critical mineral supply chain research facility (contract)**
  - Western Power Administration
    - \$500m to purchase power and transmission services (federal expenditure)





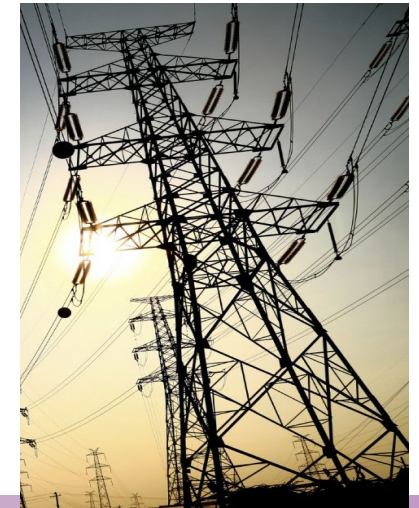
## IIJA Funding by DOE Offices (cont'd)

- **Office of Clean Energy Demonstrations:** provides more than \$20 billion to establish the Office of Clean Energy Demonstrations and support clean energy technology demonstration projects in areas including:
  - \$8 billion for clean hydrogen hubs (grants)
  - \$5b for upgrading grid and ensuring reliability and resiliency (cooperative agreement or grants)
  - \$1 billion for demonstration projects in rural areas and \$500 million for demonstration projects in economically hard-hit communities
  - \$355m for energy storage system demonstration projects
  - \$150m for long-duration energy storage demonstration (cooperative agreement)



# DOE Implementation of Transmission Provisions in the IIJA

- The **IIJA**, plus **existing funding**, include over **\$25 billion** for DOE to offer in financial assistance opportunities related to transmission.
- DOE recently launched [The Building a Better Grid Initiative](#) to foster the development of high-capacity electric transmission lines consistent with new funding and regulatory authority in the IIJA, as well as making use of its existing authority/funds.
- As part of that effort, DOE released a [Notice of Intent](#) (NOI) that identifies programs to develop transmission as rapidly as possible, including the following:
  - A **national transmission study** to identify high-priority national transmission needs—inform DOE’s updated corridor designation report;
  - A **National Transmission Planning Analysis** in collaboration with NREL;
  - Develop **modeling tools** and capabilities to provide technical analysis to **states and regions** for **transmission planning/analysis**;
  - Establish procedures for the **Transmission Facilitation Program**; and
  - Determine how to issue **loans and grants** for transmission resilience, hardening, and flexibility.



# Transmission Facilitation Program

New \$2.5B loan program

- **Funding:** DOE **Office of Electricity** to offer \$2.5 billion in loans and/or direct financing private transmission developers in order to provide financial stability to proposed transmission projects.
- **Recipients:** Transmission Developers
- **Description:** Program will prioritize projects that improve **resilience and reliability** of the grid, facilitate **inter-regional transfer** of electricity, **lower GHG** emissions, and use **advanced technology**.
  - Aimed at larger transmission projects – for new projects, only those capable of transmitting at least **1,000 MW** qualify. However, upgraded projects and those in corridors may also qualify to participate as long as they are capable of transmitting at least **500 MW**.
- **Timeline:** DOE plans to issue guidance by this summer.



# Transmission Facilitation Program

(cont'd)

**Eligible Uses:** DOE can use authority in three ways–

- Serve as an “**anchor tenant**” (enter into a capacity contract with respect to an eligible project) on lines in order to facilitate the private financing and construction of the line.
  - Contract terms of up to **40 years**, and for capacity not to exceed **50 percent** of a transmission project’s total proposed transmission capacity.
  - DOE to terminate its capacity contracts “as soon as practicable” – i.e., once DOE determines that the project is independently financially viable.
- Make **loans** for the cost of carrying out eligible transmission projects.
  - Lender to qualifying transmission projects.
- Enter into **public-private partnerships** to **co-develop** projects that are located in a National Corridor or that are necessary to accommodate an increase in demand for interstate transmission.

The IIJA funds the program but expects DOE to recover its costs from eligible projects.

# Transmission Siting Authority Reform

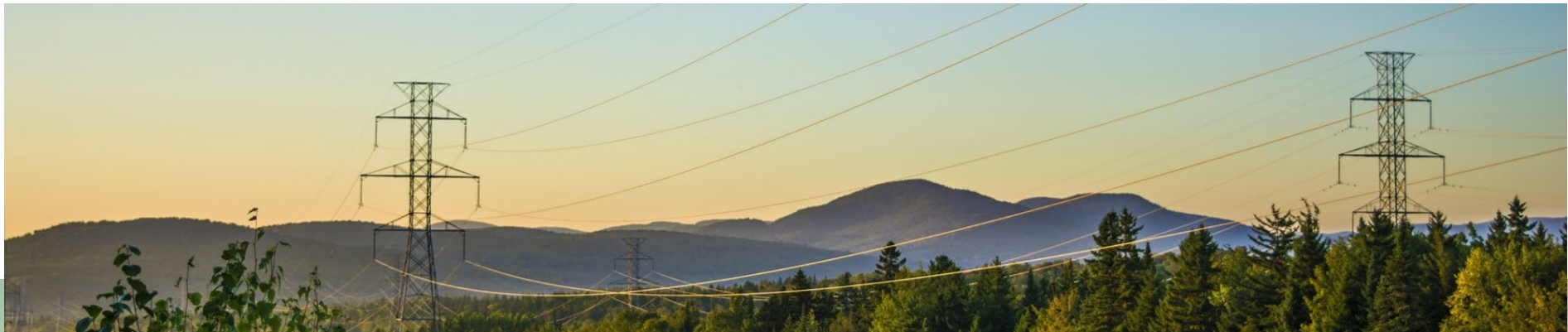
Non-funding but expanded authority under IIJA

- The **IIJA reinvigorates** DOE's and the Federal Energy Regulatory Commission's (FERC's) **corridor designation process** and **backstop transmission siting authority**.
  - **National Interest Corridors** are designated by DOE through the issuance of a study/report that it is required to complete every 3 years or can be done if an applicant applies to have a line established as a corridor.
  - FERC can issue permits with **eminent domain** authority to transmission projects located in National Interest Corridors.
- FERC's ability to issue permits under this authority was gutted following a court decision that interpreted the language as prohibiting FERC from issuing permits in the event a state agency denied a transmission project's siting application.
- The IIJA amendment "undoes" that court decision and includes express language authorizing FERC to issue a permit if a state does not site a line within a year if it is located in a corridor.



# Transmission Siting Authority Reform (cont'd)

- In designating National Interest Corridors, DOE's **Office of Electricity** must look to a variety of factors, including whether **congestion** is imposing economic constraints on a particular region, among others.
- The **IIJA expands the scope** of DOE's review by providing additional factors DOE may consider designating a corridor.
  - Whether a designation will **“enhance the ability”** of **renewables** “to connect to the electric grid”; and
  - Whether the designation will **decrease electricity costs for consumers**.
- The IIJA's changes to these provisions could significantly redefine the federal government's role in the siting of electricity transmission projects – a role that has historically been almost exclusively within the purview of the states.



# IIJA Amendments to FAST-41

- FAST-41, through the **Federal Permit Improvement Steering Council (FPISC)**, facilitates the implementation of procedural requirements for “covered projects” intended to **accelerate environmental review and permitting** across federal agencies (e.g., a permit or National Environmental Policy Act (NEPA) review).
- FAST-41 already has performance schedules, permitting timetables, permitting dashboard, and heightened judicial challenge requirements that expedite federal review of covered projects—decreases permitting timelines by almost 50%.
- **IIJA amendments:**
  - Makes FAST-41 **permanent** through removal of the seven-year sunset clause.
  - Accelerates **Performance Schedules & Permitting Timetables**: Establishes a “goal” of limiting all performance schedules to **two years** or less.
  - Single NEPA environmental impact statement: Requires preparation of a **single, joint document** where an Environmental Impact Statement (EIS) is required unless the lead agency can demonstrate a different approach would be more efficient.
  - Establishes a **record of decision** deadline: Requires agencies “to the maximum extent practicable” to issue their decision on the FAST-41 covered project “not later than **90 days**” after the issuance of a Final EIS.



# Highlights of the IRA



**10 (plus)** years of full-value credits for onshore/offshore wind, solar, storage, and hydrogen.

- **PTC/ITC** (with solar PTC) through the end of 2024; tech-neutral credits from 2025-2032 (or later).

**Full value credits** tied to prevailing wage and apprenticeship requirements.

**Adders/bonuses available** for complying with domestic content requirements and investing in projects in certain energy and low-income communities.

**Direct pay** available for hydrogen and advanced manufacturing PTC for the first 5 years; otherwise mostly limited to tax-exempt entities.

New **transferability** program available for entities unable to elect direct pay—allowing the selling of credits to unrelated parties.

**Accelerated depreciation restored** for clean energy projects (clean energy tax credits already protected) in corporate minimum tax.

**No transmission ITC**, but transmission eligible for nearly \$10 billion through various programs.

**Offshore:** Trump offshore wind moratorium lifted; offshore wind leases tied to oil and gas leasing on federal waters/lands.

**Funding for permitting resources** at DOE, FERC, DOI, NOAA and the Federal Permitting Improvement Steering Council.



# Advanced Manufacturing PTC: 45X

- Creates a new production tax credit that could be claimed for the domestic production and sale of qualifying clean energy component, such as solar, wind, and battery components.
- The credits are provided for **eligible components produced and sold before Jan. 1, 2030**. For components sold after that date, the credit is reduced by 25% each year, and is unavailable for components sold in 2033 and beyond.
  - This phaseout does not apply to the credits for critical minerals.
- Appears to allow a taxpayer to sell components to a related person and have them be deemed to have been made to an unrelated person.
- The credit cannot be claimed for components produced at a facility for which a credit was claimed under Section 48C.
- The credit amount will vary depending on the applicable eligible component, as shown on the next two slides.

# Advanced Manufacturing PTC: Table

## Solar/Inverters

Thin PV cells	4c/watt
Inverters	applicable amount with respect to such inverter
Crystalline PV cell	4c/watt
PV wafer	\$12 per square meter
Solar grade polysilicon	\$3/kg
Solar module assembly	7c/watt
Torque tube and longitudinal purlin	87c/kg
Structural fastener	\$2.28/kg
Central inverter	.25c/watt
Utility inverter	1.5c/watt
Commercial inverter	2c/watt
Residential inverter	6.5c/watt
Microinverter	11c/watt

## Wind

Blade	2c/watt
Nacelle assembly	5c/watt
Tower	3c/watt
Offshore wind foundation	Fixed 2c/watt and floating 4c/watt
Offshore wind vessel	10% of sales price

## Batteries/Minerals

Battery Modules	\$10 per kWh for each
Battery Cells	\$35 per kWh for each
Critical Mineral	10% of total cost of production

# Other Clean Energy-Related Provisions

## Permitting

- \$125m, \$100m, \$150m, and \$20m to DOE, FERC, DOI, NOAA, respectively, to hire personnel to permit projects.
- \$350m for 2023 to remain available through 2031 a year to support the Federal Permitting Improvement Steering Council's (FPISC) activities to shepherd the permitting of infrastructure across/at federal agencies.
- Creates a 10-year period in which both onshore rights-of-way for wind and solar and offshore wind leases cannot move forward if certain acres of O&G leasing on the public or waters, respectively, do not occur.
  - Requires DOI to offer at least 2 million acres of public lands and 60 million acres of offshore waters for oil and gas leasing each year for a decade as a prerequisite to installing any new solar or wind energy.
  - If DOI fails to offer these minimum amounts for leasing, no right of ways could be granted for any utility-scale renewable energy project on public lands or waters.

# Other Clean Energy-Related Provisions (cont'd)

## Offshore Wind

- Allows the president to grant offshore wind leases in the area withdrawn by the Trump moratorium.
- OCSLA extended to U.S. territories for offshore wind.



# Other Clean Energy-Related Provisions (cont'd)

## Transmission/Storage/Renewables

- \$760m to DOE to make grants to states to help site transmission lines.
- \$2b to DOE to make loans to transmission that are in the national interest.
- \$5b to DOE to support retooling and repowering generation and transmission facilities.
- \$100m to DOE through September 30, 2031, for convening stakeholder groups to conduct planning and modeling for interregional and offshore transmission.
- \$1b for loan agreements for electric storage in rural areas.
- Almost \$3b to promote underutilized renewable technologies in rural areas.
- \$10b to support rural co-ops purchasing renewables.
- \$3.6b to DOE's loan office to support projects—allows for guarantees up to \$40b.

**IMPACT:  
WHAT  
DOES IT  
ALL MEAN?**

- **Triple annual clean energy deployment by 2030**
- **Produce enough clean power to fuel every home in America - 142 million households, up from 58 million today**
- **Double the clean energy workforce, creating 550,000 jobs and employing nearly 1 million Americans by 2030**
- **Provide the average American \$1000 in energy savings**
- **Reduce greenhouse gas emissions 40% below 2005 levels.**

# NEXT STEPS/WHAT COULD GO WRONG

**Treasury Guidance**

**Permitting Reform**

**Transmission**

**Trade Policy**

**Political Support/Repeal**

**Social License**



**Conclusion**



**Thank You**



**Questions**