



Americans for a
Clean Energy Grid

Transmission Needed to Meet Corporate America's Growing Demand for Renewable Power

March 27, 2018

Introduction to ACEG

- Americans for a Clean Energy Grid (ACEG) has been engaged since 2008 in building broad-based awareness of the need to expand, integrate and modernize America's high-voltage transmission system.
- Read more about our coalition and policy agenda: cleanenergygrid.org



Americans for a
Clean Energy Grid

Featuring



Stefani Millie Grant, Panelist

Senior Manager, External Affairs and Sustainability, Unilever



Eli Massey, Panelist

Senior Advisor, Policy Studies, Midcontinent Independent System Operator (MISO)



David Gardiner, Panelist

President, David Gardiner and Associates



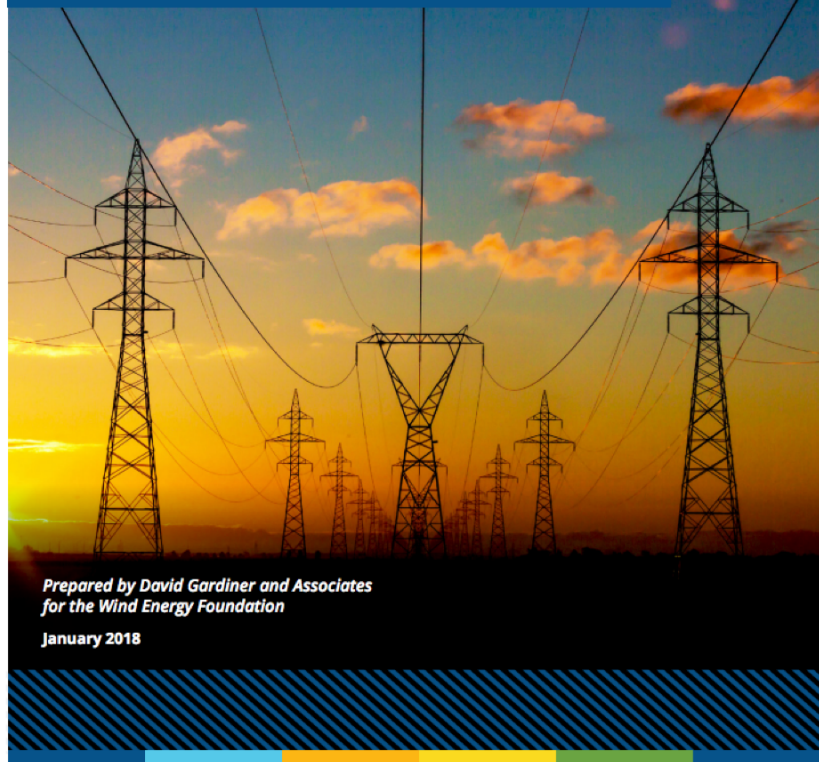
John Jimison, Moderator

Executive Director, Americans for a Clean Energy Grid



A Renewable
America

TRANSMISSION UPGRADES & EXPANSION: KEYS TO MEETING LARGE CUSTOMER DEMAND FOR RENEWABLE ENERGY



*Prepared by David Gardiner and Associates
for the Wind Energy Foundation*

January 2018



Report available for download:
www.windenergyfoundation.org

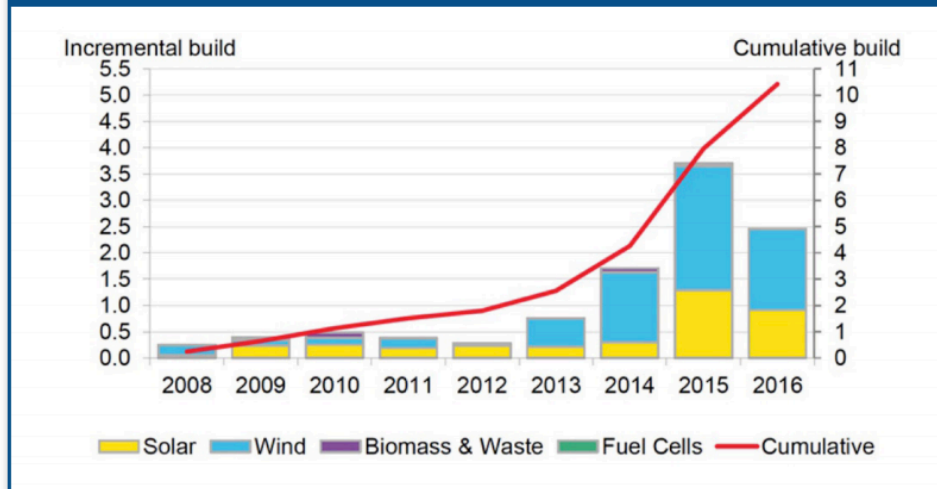
Key Findings

- Corporate commitments to procure renewable energy are growing rapidly and projected to continue to do so.
- The best renewable resources are in the central U.S., far from major electricity load centers.
- Transmission expansion and upgrades are needed to spur enough renewable energy development to meet this growing demand, and can provide other benefits.
- Transmission planning fails to account for the rapid increase in corporate and other institutional demand.

Corporate Commitments to Renewable Energy

- 48% of Fortune 500, and 63% of the Fortune 100, have set targets to reduce GHG emissions, improve energy efficiency, and/or increase renewable energy.
- Since 2013, U.S. corporations have signed nearly 9 gigawatts (GW) of long-term wind and solar power contracts.
- REBA goal to deploy 60 GW of new renewable energy capacity in the U.S. by 2025.

Figure 3. Renewable capacity contracted by corporations by technology, 2008-2016 (MW)



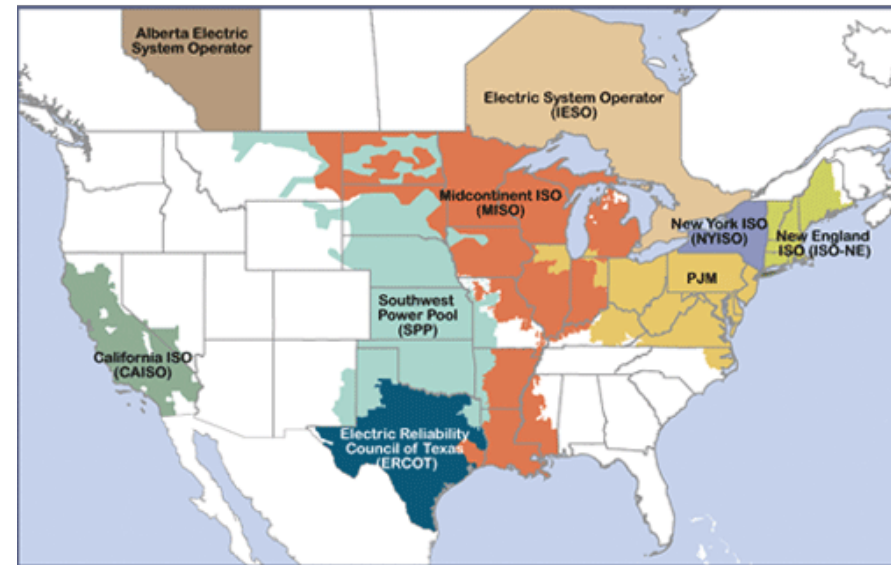
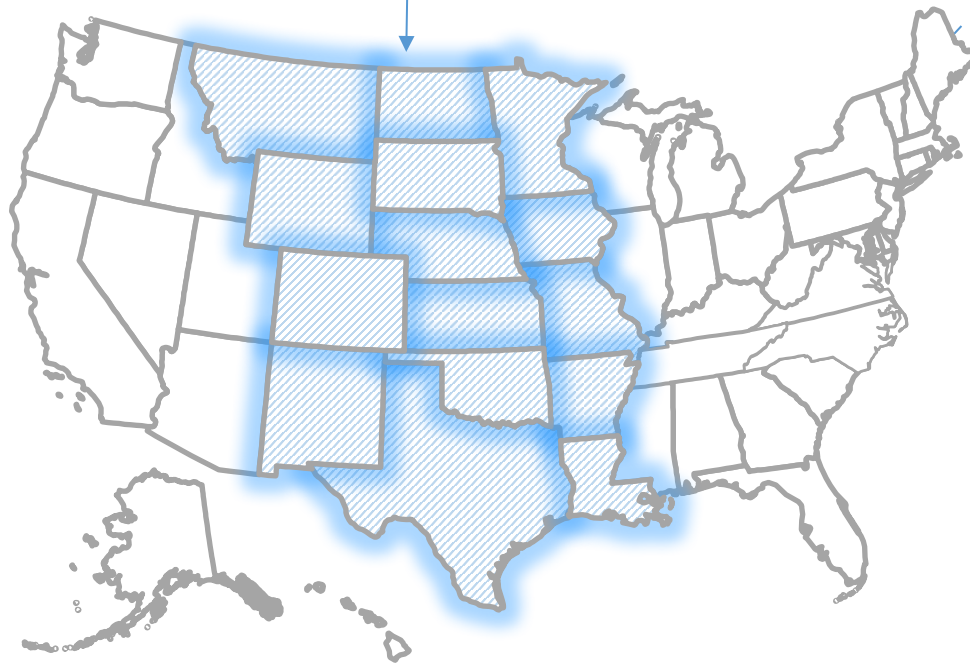
Source: Bloomberg Finance 2017 Sustainable Energy in America Factbook



Americans for a
Clean Energy Grid

Transmission Expansion and Upgrades Needed

- 88% of total tech. potential for onshore wind
- 56% of total tech. potential for utility-scale solar PV
- 30% of total projected electricity sales, 2050



Sources: AWEA, U.S. Wind Industry Fourth Quarter 2016 Market Report
NREL, 2012 U.S. Renewable Energy Technical Potentials
EIA, Annual Energy Outlook 2017



Americans for a
Clean Energy Grid

Corporate Demand and Transmission Scenarios

- Three of the four scenarios failed to meet corporate renewable energy demand
- Only one – low corporate demand and aggressive transmission construction – met the demand

Table 2. Percentage Demand Met by Proposed Transmission Lines

Scenarios	High Corporate Procurement Scenario (51 GW), RPS Demand (15.5 GW)—66.5 GW Total Demand	Low Corporate Procurement Scenario (20 GW), RPS Demand (15.5 GW)—35.5 GW Total Demand
Conservative Scenario (MW) [90% of planned transmission (Table 3) before 2020 is built, 20% of planned transmission after 2020 is built]	42%	78%
Aggressive Scenario (MW) [90% of <i>all</i> planned transmission (Table 3) is built]	70%	131%



Transmission Planning Should Consider this Increase in Demand

- Transmission planning fails to account for the rapid increase in corporate and other institutional demand.
- Does not focus adequately on the need to transmit renewable electricity from the central U.S. region to the rest of the country or on remote high-quality renewable resource areas within each region.



Key Recommendations

- Regional Transmission Organizations and transmission planners should:
 - Incorporate voluntary, large customer demand in transmission planning
 - Focus on interregional transmission
- Corporate buyers and large institutional customers should:
 - Encourage transmission planners and Public Utility Commissions to expand transmission
 - Participate in transmission planning
 - Urge FERC to strengthen transmission planning

The Large Customer Perspective





TUESDAY, MARCH 27, 2018

UNILEVER CARBON POSITIVE AMBITION

STEFANI MILLIE GRANT
SENIOR MANAGER, EXTERNAL AFFAIRS &
SUSTAINABILITY



AXE

Vermont's Finest
BEN & JERRY'S
ICE CREAM

**BED
HEAD**
TIGI

Breyers

Caress

catwalk
TIGI

CLEAR

SHREDDED & SPREAD
COUNTRY CROCK

Degree
✓

Dove
Dove

Dove
MEN
+ CARE

seventh
generation

GOOD
HUMOR

"BRING OUT THE BEST"
HELLMANN'S

I can't believe
it's not
Butter!

KLONDIKE

Knorr

Lipton

MAGNUM

NEXXUS
SALON HAIR CARE

POND'S

The Original Brand
Pop-sicle

Q-tips

simple

St. Ives
FRESH. BETTER. NATURALLY.

Suave

TONI & GUY
HAIRDRESSING

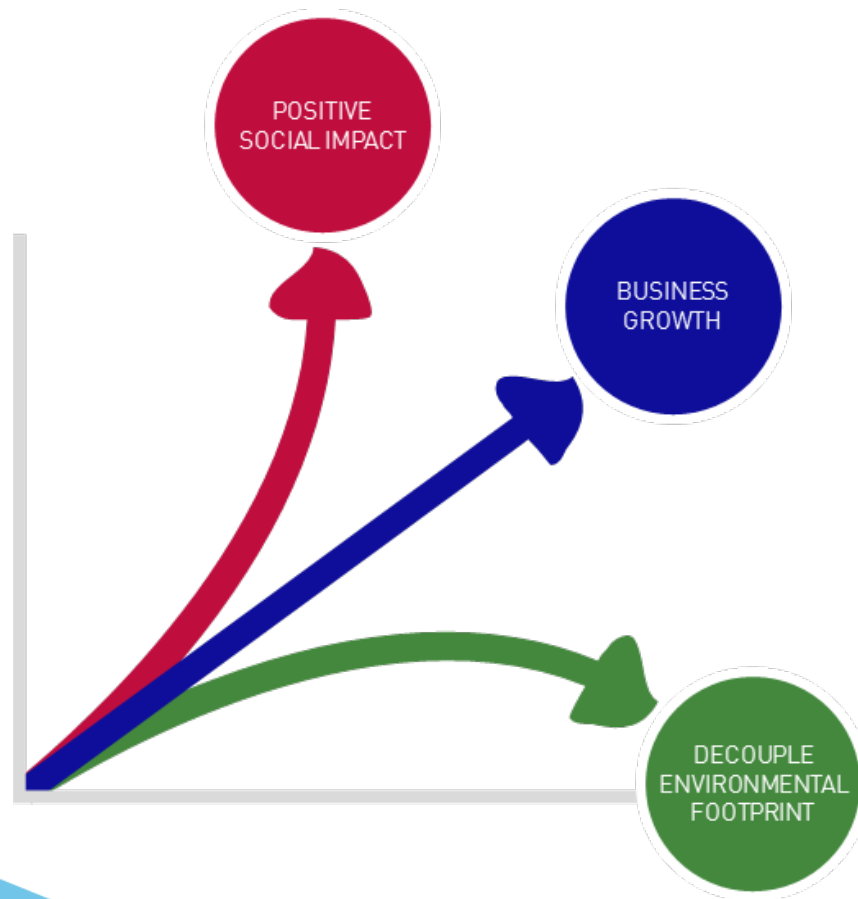
TRESemmé
USED BY PROFESSIONALS

Unilever
projectSunlight

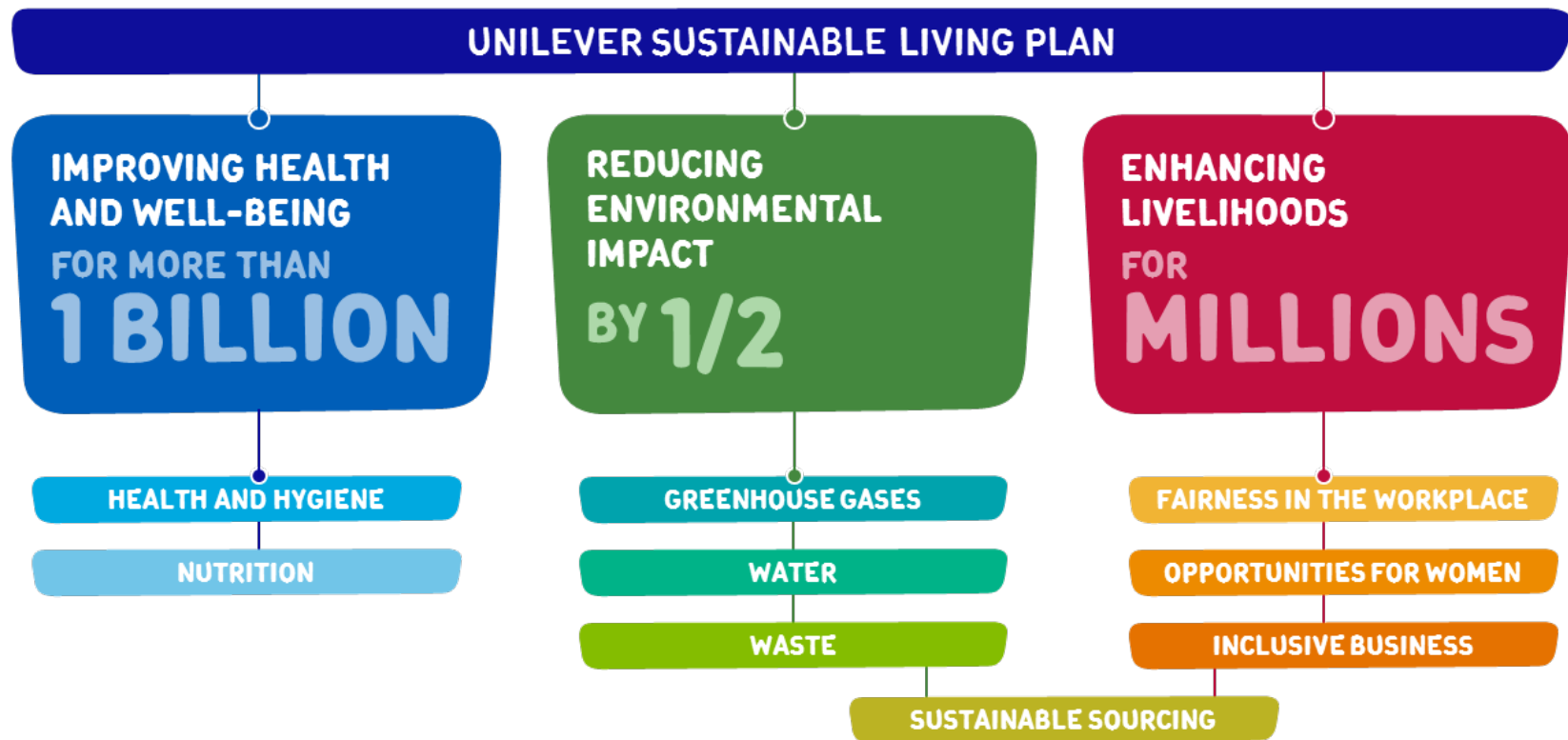
Vaseline

Our Vision:

Grow the business, while reducing our environmental footprint and increasing our positive social impact



UNILEVER SUSTAINABLE LIVING PLAN



CARBON POSITIVE BY 2030



To become carbon positive by 2030, we will:

- Source 100% of our energy across our operations from renewable sources by 2030.
- Source all our electricity purchased from the grid from renewable sources by 2020.
- Eliminate coal from our energy mix by 2020.
- Directly support the generation of more renewable energy than we consume, making the surplus available to the markets and communities where we operate.

OTHER COMPANY COMMITMENTS




MARS 100% of energy consumption will be fossil fuel free by 2040

Walmart  Aims to produce or procure 7,000 GWh of renewable energy globally by the end of 2020

Bank of America  Set a goal to become carbon neutral and purchase 100% renewable electricity by 2020

 **DANONE** ONE PLANET. ONE HEALTH Targeting 100% renewable electricity by 2030, with an interim goal of 50% by 2020

ebay  Committed to 100% renewable energy in its electricity supply by 2025 at its data centers and offices.

RENEWABLE ENERGY NOT ENOUGH TRANSMISSION IMPORTANT TOO



Companies need to engage on transmission planning process:

- Encourage transmission planners and state Public Service Commissions to increase access to affordable, renewable energy by approving upgrades and expansion to transmission lines
- Participate in regional and inter-regional transmission planning conversations to ensure future transmission infrastructure meets customer demand for renewable energy;
- Urge FERC to continue work to improve the interregional planning processes consistent with Order 1000.

Thank you!

Stefani.Millie@Unilever.com

System Operator's Perspective



MISO Scope of Operations

Footprint

15 States

1 Canadian Province

**42 million end-use
customers**

**65,800 miles of
transmission**

**Historic Peak Load
(July 20, 2011)**

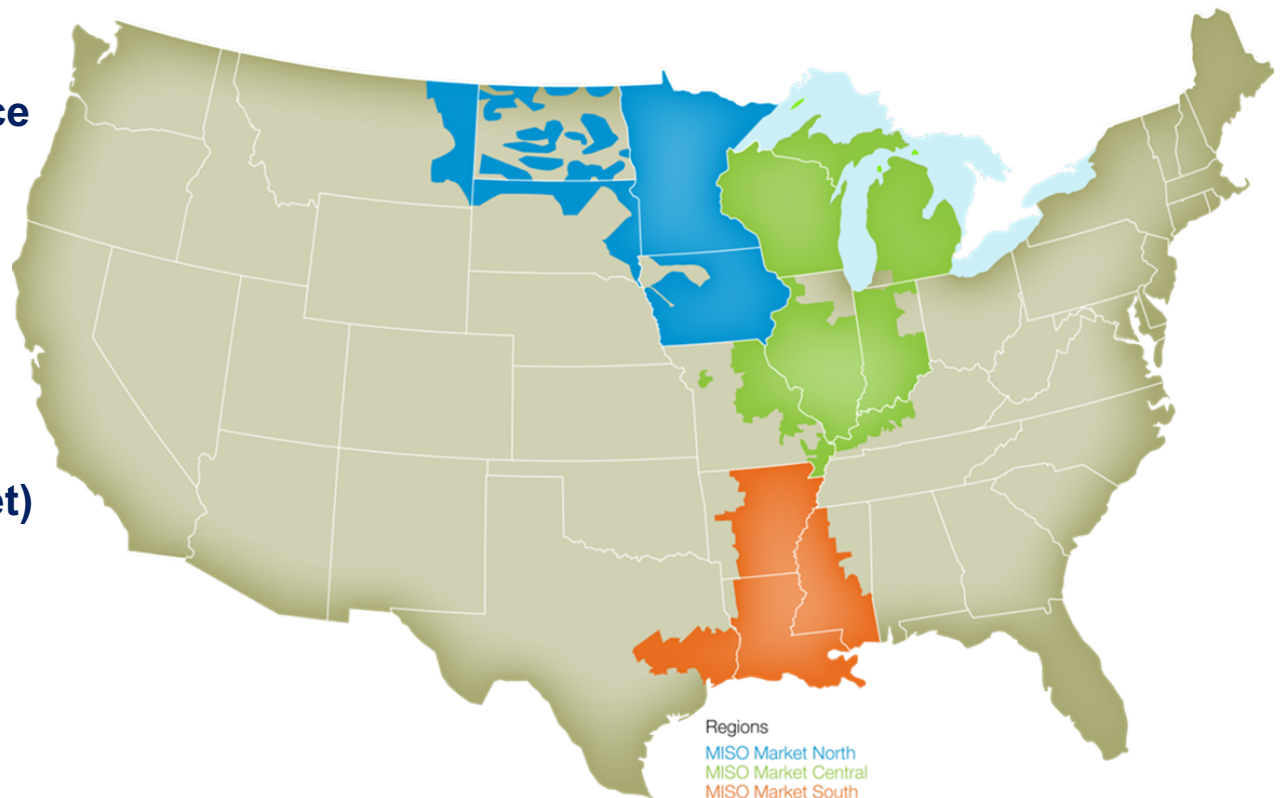
127,125 MW (market)

130,917 MW

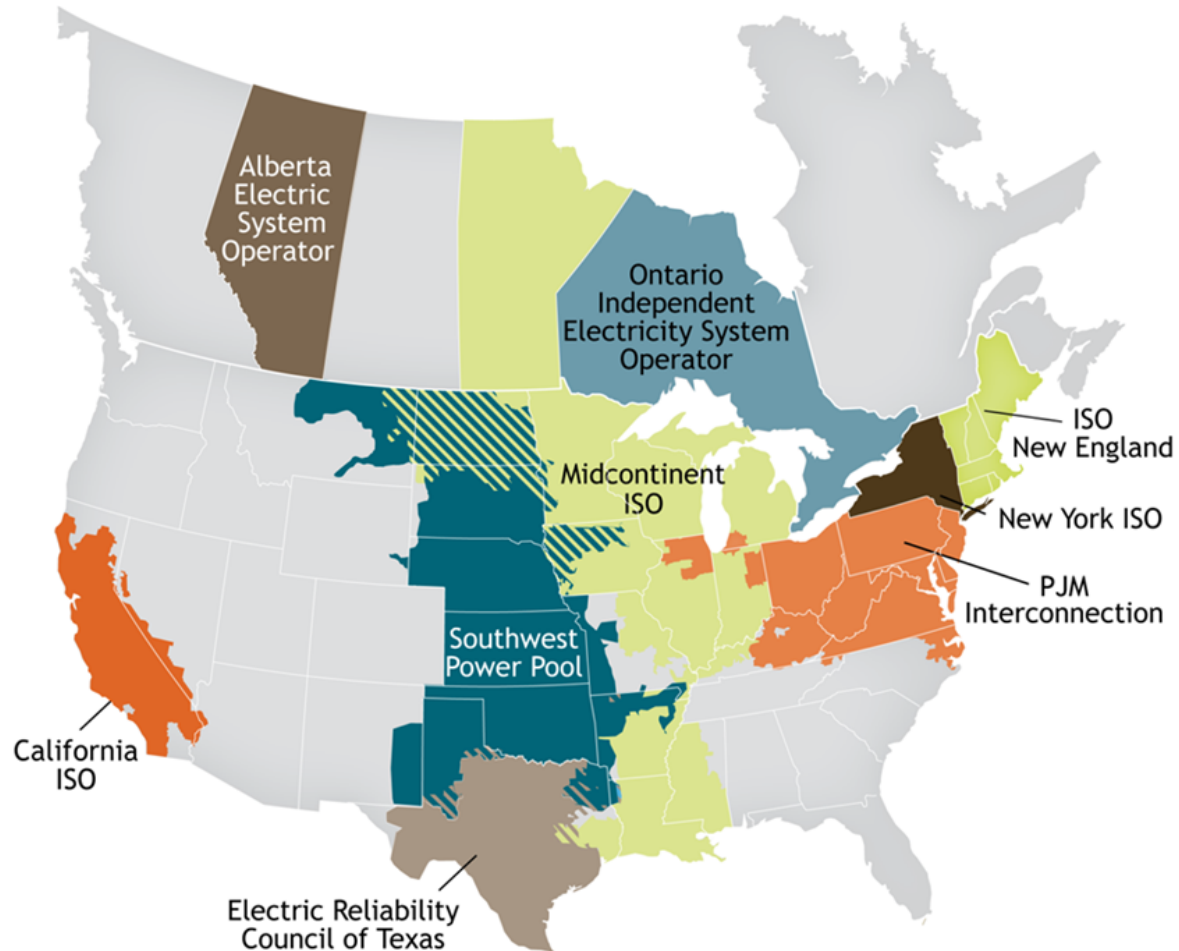
(reliability)

**Historic Wind Peak
(December 7, 2016)**

13,731 MW

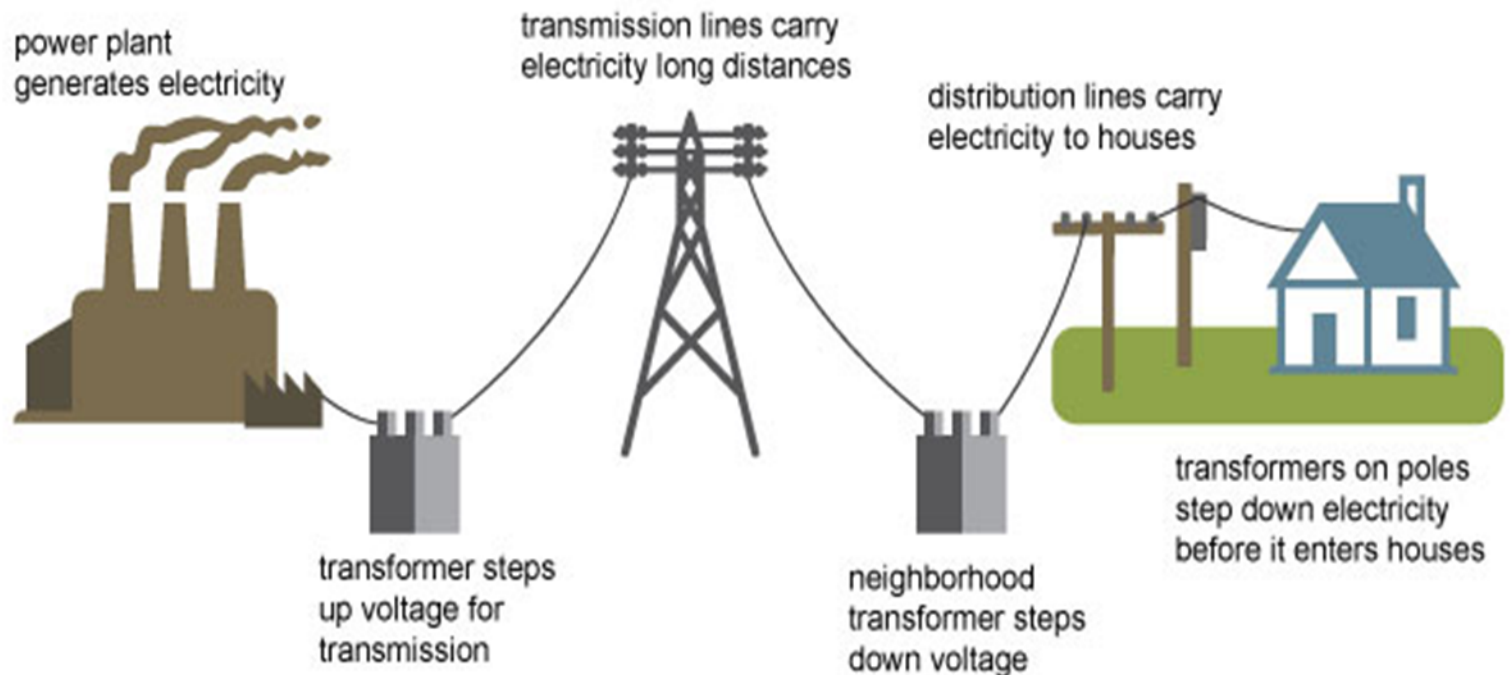


ISO-RTO Map



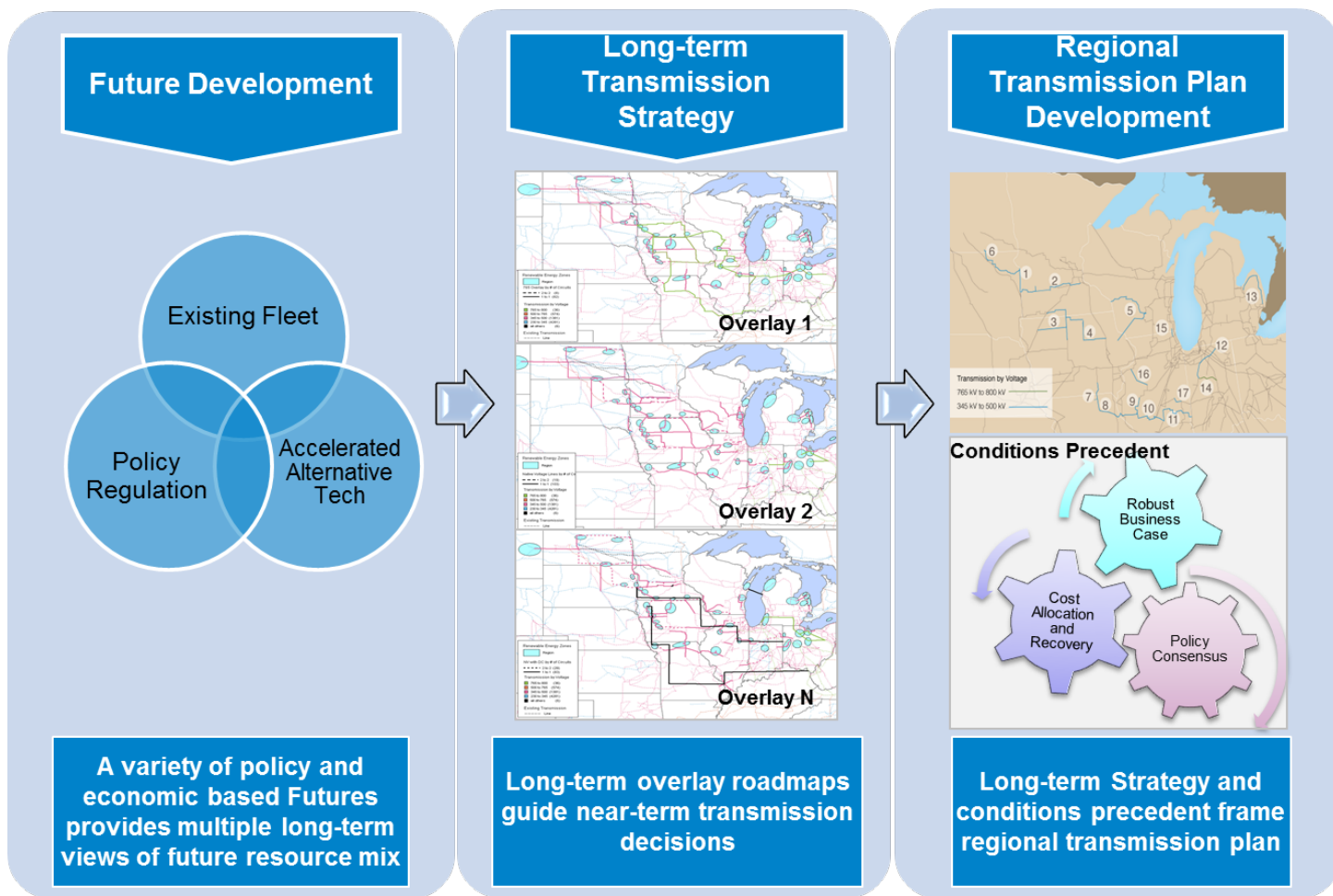
Basic Electricity Delivery System

Electricity generation, transmission, and distribution



Source: Adapted from National Energy Education Development Project (public domain)

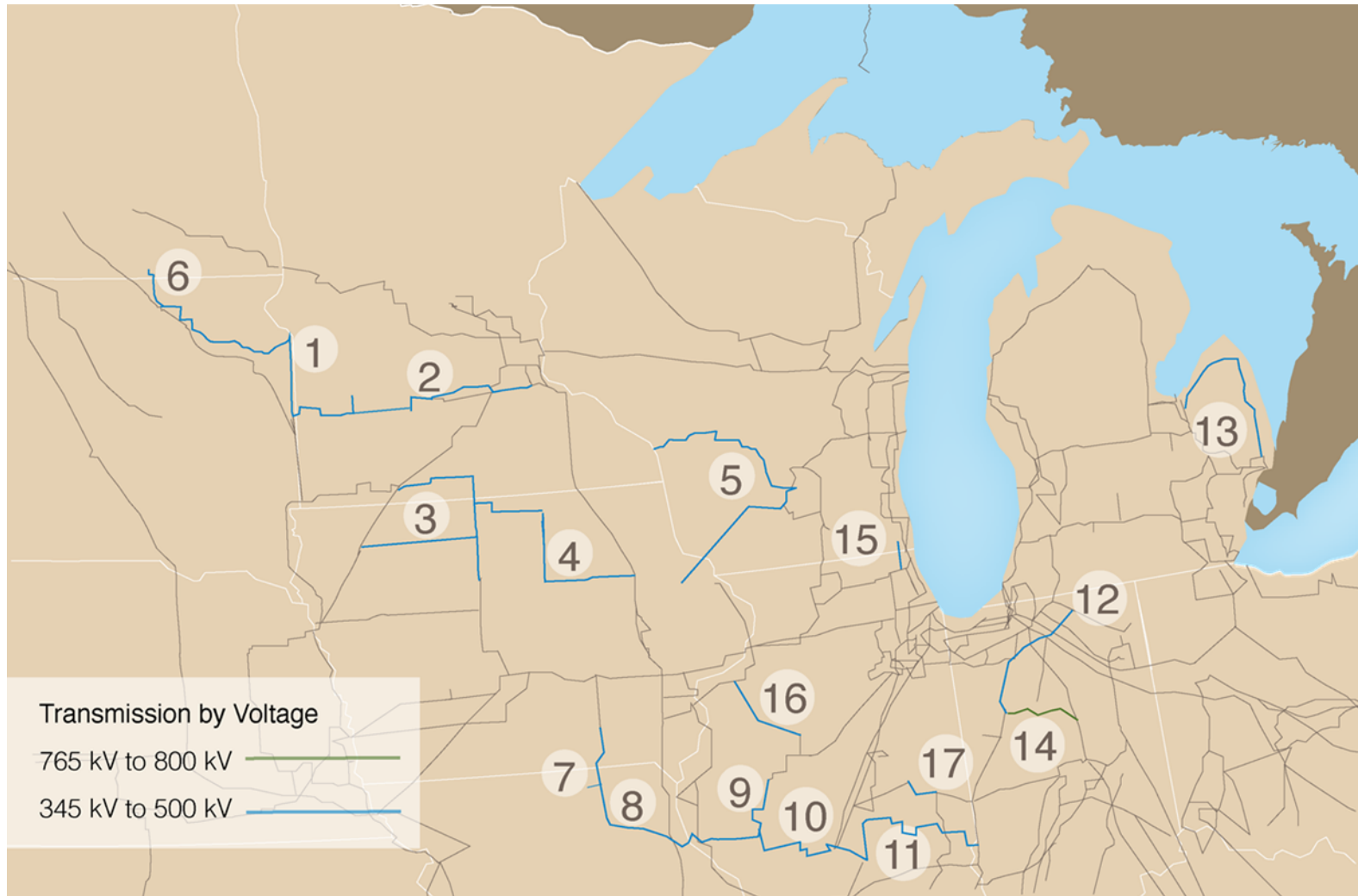
MISO's value-based transmission planning process seeks to ensure appropriate transmission projects are in place given an evolving resource portfolio



MISO Value-Based Transmission Planning



MISO Multi-Value Projects



Questions?

Please submit any questions through the GoToWebinar panel on the right side of your screen, and we will answer as many as possible during Q&A.



Americans for a
Clean Energy Grid

Q&A with Panelists



Stefani Millie Grant, Panelist

Senior Manager, External Affairs and Sustainability, Unilever



Eli Massey, Panelist

Senior Advisor, Policy Studies, Midcontinent Independent System Operator (MISO)



David Gardiner, Panelist

President, David Gardiner and Associates



John Jimison, Moderator

Executive Director, Americans for a Clean Energy Grid

Thank you

To learn more about ACEG, visit cleanenergygrid.org

Additional questions? Email: info@cleanenergygrid.org



Americans for a
Clean Energy Grid