

Transmission and A Clean Energy Future: An Environmental Conundrum

Gary Graham, Ph. D.
Lands Program Director



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- Climate change poses the greatest threat to biological diversity in human history
- Trees moving upslope at rate of 1 to 3 feet a year.

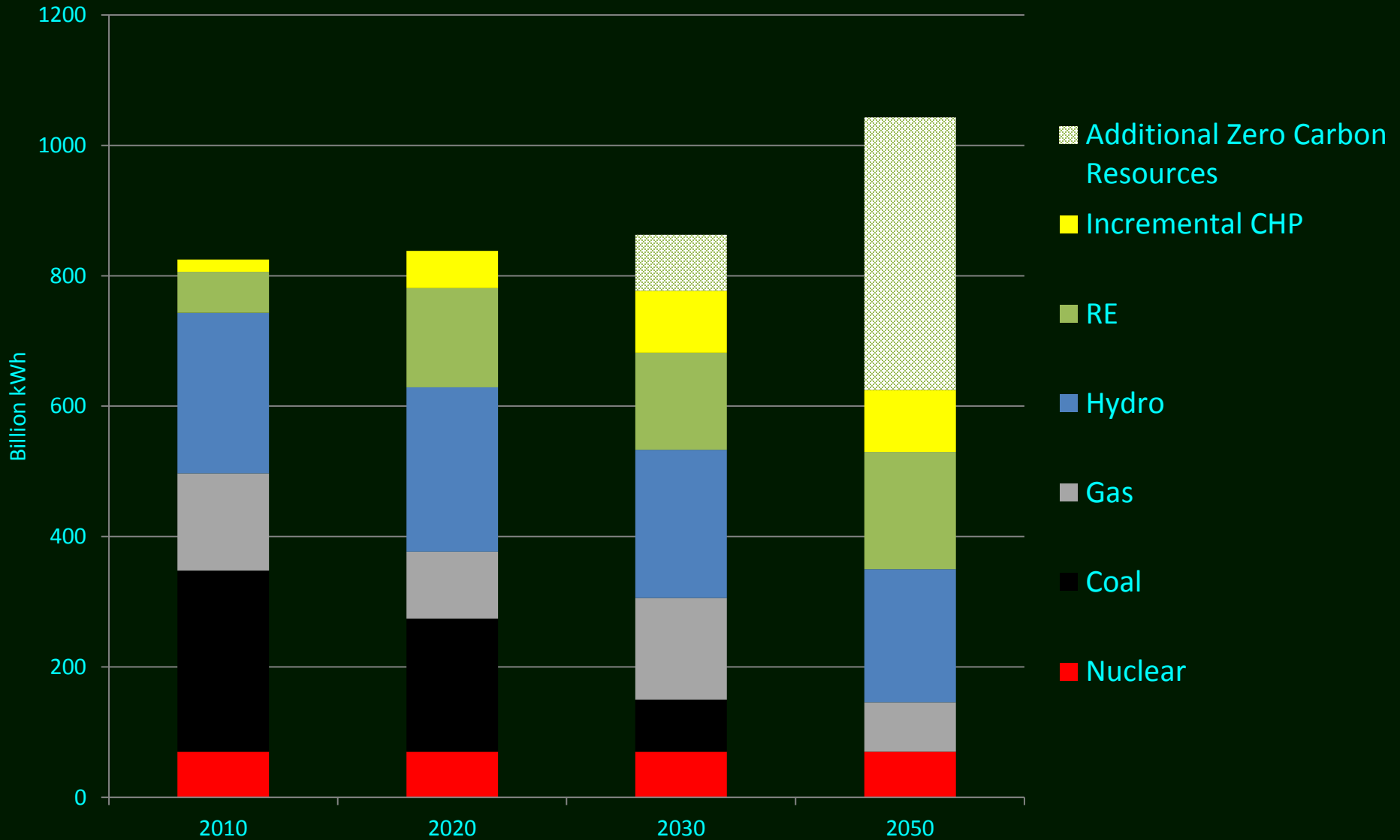
Clean Energy Future

www.cleanenergyvision.org

Benefits:

- Environmental: biodiversity, water, ecosystems
- Public Health: prevention, cost reduction
- Economic: jobs, global competitiveness
- National Security: more reliable supplies

CEV Generation Portfolio

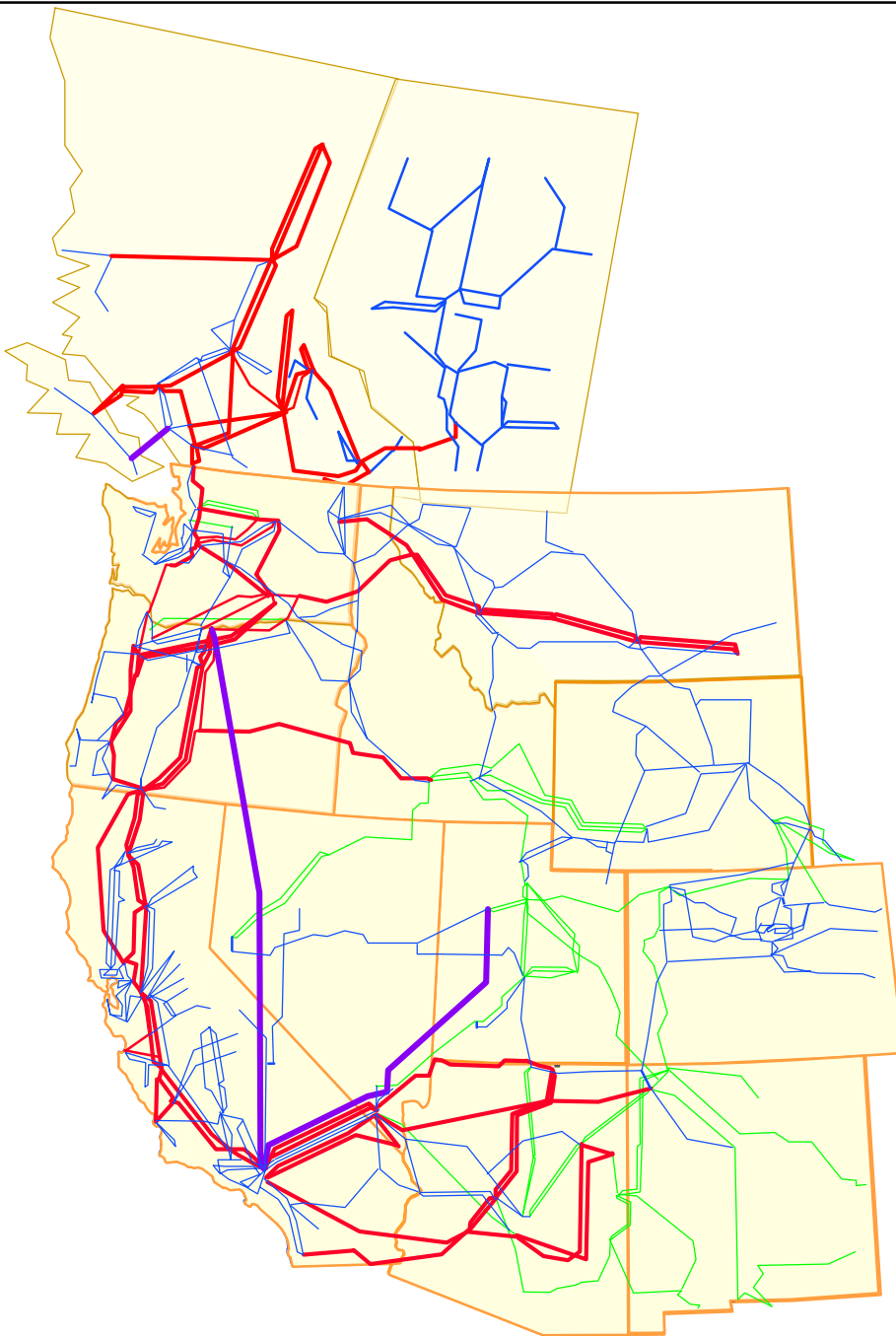
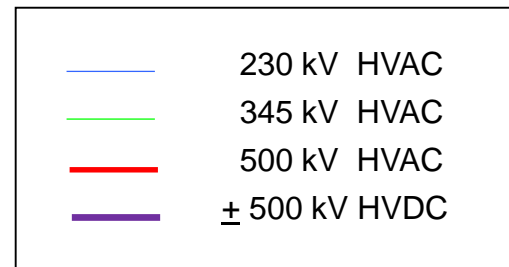




Transmission: An Enabler of a Clean Energy Future?

- To reduce carbon to IPCC 2050 target
 - Need over 100,000 MW new utility scale RE even with aggressive EE, DR, and DG
 - 25,000 miles of new transmission lines

WECC Existing Transmission System



Potential Renewable Energy Land Impacts

A man wearing a light-colored cowboy hat, glasses, a white long-sleeved shirt, and blue jeans stands in a grassy field. He is pointing his right hand towards a line of wind turbines in the distance under a clear blue sky. The turbines are white and spaced out across the horizon.

Generation = 1.07 million acres

Transmission = 0.5 million acres

Total = 1.5 million acres



Climate Change Impact:

- 3.6 million acres killed by beetles in CO and WY

Environmental Conundrum

Long-term vs. short term concerns

- Stave off a biodiversity disaster by developing and transmitting renewable energy now
- Protect important wildlife and landscapes now no matter long term climate concerns

Hurdle

- Human nature to focus on short term, tangible, impacts close to home

Minimizing Transmission Impacts

Environmental Data Task Force (EDTF)

Western Electric Coordinating Council
(Interconnection-wide Planning)

**Scenario Planning
Steering Group**

EDTF

EDTF



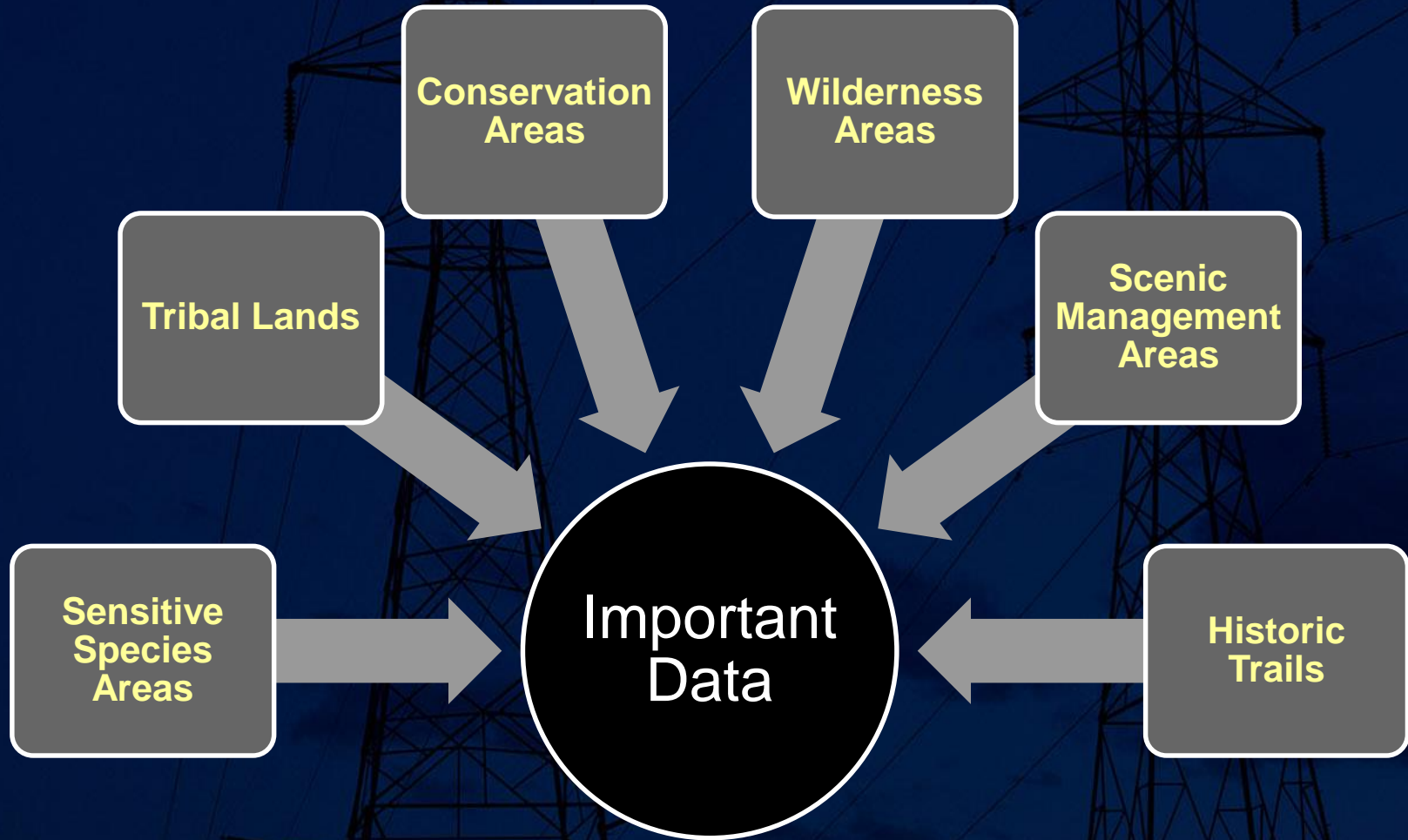
Goal

Develop recommendations to incorporate information on land, wildlife, cultural, historical, archaeological, and water resources into the transmission planning process


Major Products

- Preferred Land and Wildlife Data Sets
- Landscape Development Risk Classification System (over 100 different land area types)

Environmental/Cultural Data (Examples)



EDTF Risk Classification System

	Risk Classification Categories	Example Area Types
 <p>Risk, Time, and Cost</p>	CATEGORY 1	<i>Existing Transmission Rights-of-Way Designated Energy Corridors</i>
	CATEGORY 2	<i>Army Corp of Engineer Lands Other Public Lands</i>
	CATEGORY 3	<i>Critical Habitats National Monuments National Recreation Areas</i>
	CATEGORY 4	<i>Wilderness Areas National Parks Wildlife Refuges</i>

SunZia Southwest Transmission Project



BLM'S preferred route



Area affected by SunZia Southwest Transmission Project

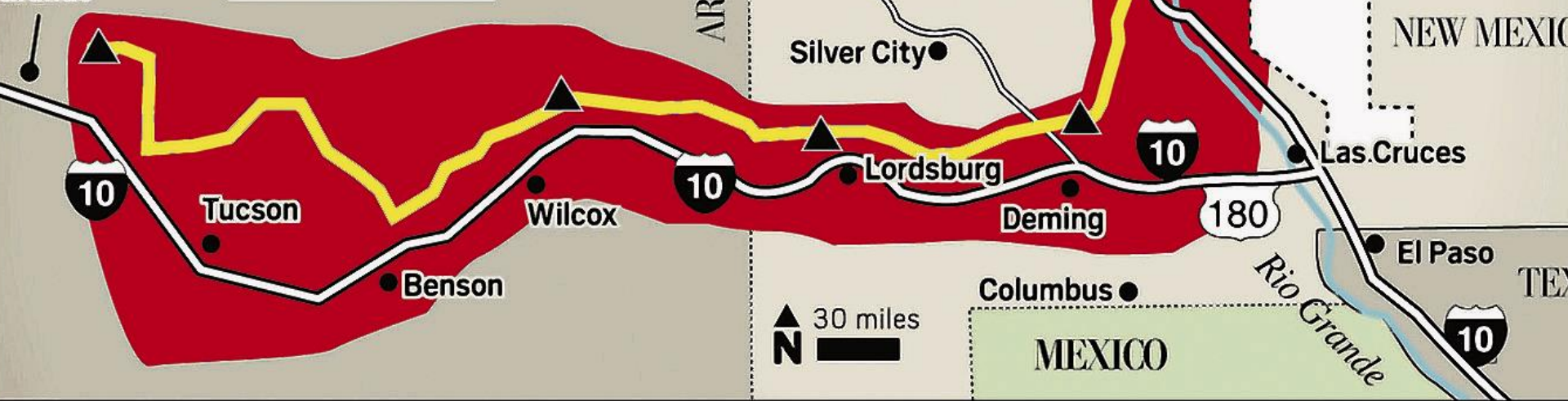


Proposed SunZia Substation site



Detail

Casa Grande



ARIZONA

NEW MEXICO

MEXICO

TEXAS

Climate Change and the Power Grid WECC Scenario

What are the most significant system impacts in the Western Interconnection that could result from changes to the climate and to what extent do those system impacts present risks to electric system reliability?



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ggraham@westernresources.org



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