



WFEC OVERVIEW

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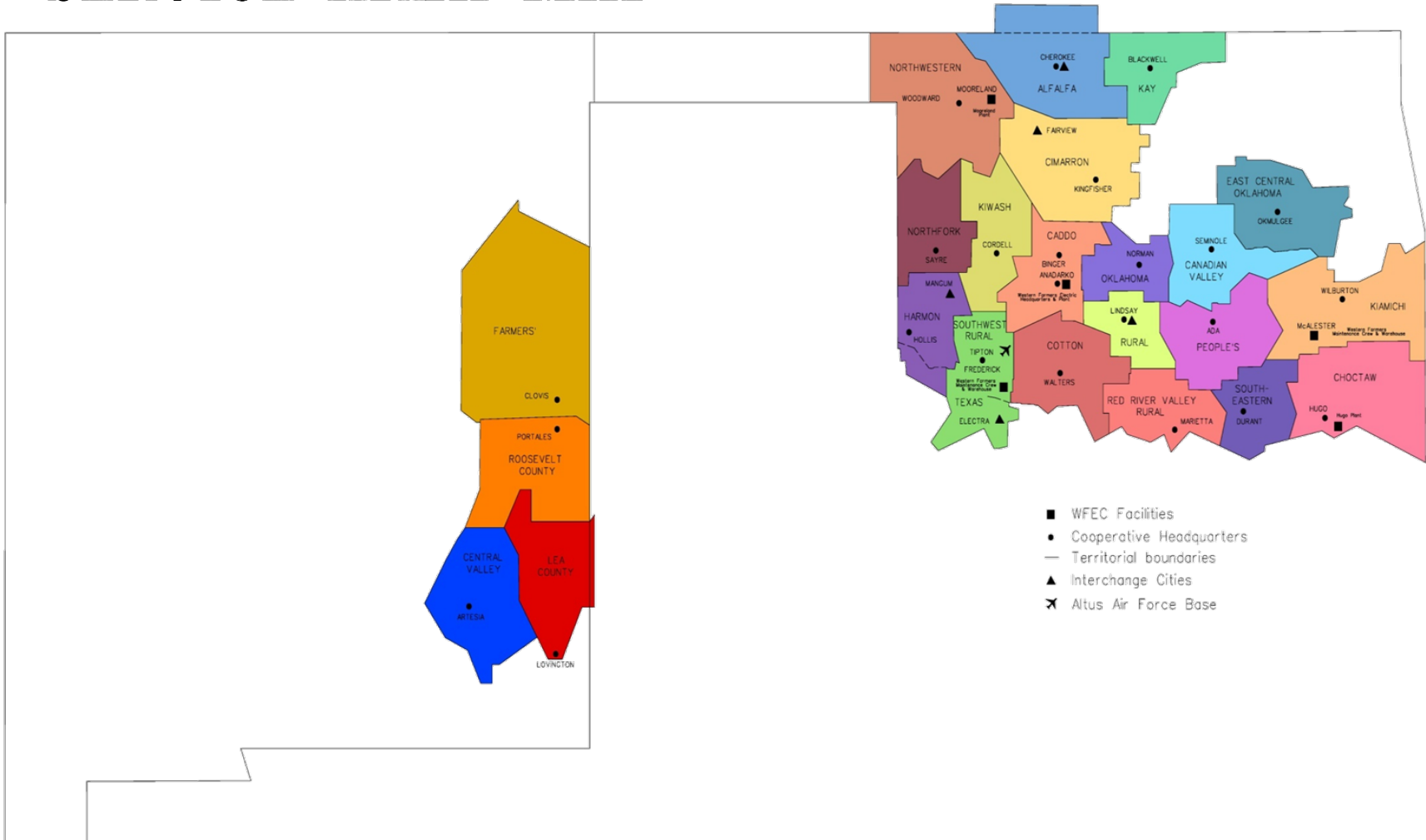
Western Farmers Electric Cooperative

November 7, 2019

WFEC OWNERS

- **WFEC – 22 Members**
 - **Distribution Cooperatives**
 - 17 Oklahoma Members (Kansas, Texas, Oklahoma)
 - Service territories, but loads over 1 mw are competitively bid with IOU's and others
 - 4 New Mexico Members (Texas, New Mexico)
 - Service territories
 - 1 United States Air Force Base (non-voting)

SERVICE AREA MAP



SERVICE TERRITORY INFORMATION

- The Four (4) East side New Mexico Cooperative members are in the Eastern Electric Grid versus the Western Electric Grid for most of remaining Cooperatives
- This area is part of the Southwest Power Pool (SPP), Located in Little Rock, Arkansas, FERC approved, Regional Transmission Organization (RTO)
- SPP serves both as an RTO and Integrated Market (IM) over a 14 state region in the central part of the U.S.
- This area is part of the SPP IM
 - Western Farmers Electric Cooperative, a Generation and Transmission (G&T) Cooperative, offers all generation into the SPP Integrated Market daily, SPP selects the optimum dispatch of all resources, and WFEC purchases all Member energy from the market to serve member load
- This is part of the Midwest Reliability Organization in Minneapolis, Minnesota

RENEWABLE GENERATION

- For the past 16 years, WFEC has embraced adding wind, solar, and natural gas resources to our members generation mix.
- Additional resource addition is based on the concept of keeping member rates low, and allow renewable resources to benefit all members.

▪ Today		Mw WIND	Mw Solar	Mw Hydro	Mw Battery
	NM	90	30	12	0
	OK	615	21	260	0
▪ Commercial before 2024					
	NM	0	220	0	0
	OK	250	250	0	200

WFEC GENERATION OVERVIEW

- **Generating Plants**
 - Anadarko (natural gas – 300 mw CC, 40 mw steam, 225 mw CT)
 - Mooreland (natural gas – 322 mw steam)
 - Hugo (coal – 400 MW)
 - Lea County (47 mw Wartsilla, NG)

- **Long-Term Power Purchases**
 - Southwestern Power Administration (SWPA) hydro allocation (260 MW)(2027)
 - Western Area Power Administration (WAPA)(12 mw)
 - GRDA – (200mw through 2025, coal/ng/water)
 - Oneta – (280 mw through 2035, combined cycle ng)
 - Southwest Public Service – (200 Mw (system) through 2026)

- **Wind Energy Oklahoma – State Renewable Goal – 15% by 2015 (20% wind, 8% water)**
 - Blue Canyon 74 MW - ≈280,000 MWH annually
 - Buffalo Bear 18.9 MW - ≈65,000 MWH annually
 - Red Hill 123 MW – ≈430,000 MWH annually
 - Rocky Ridge 150 MW, = 525,000 MWH annually
 - Balko 100 MW =395,000 Mwh Annually
 - Grant County 50 MW, 197,000 MWH Annually
 - Minco IV 100 MW, 395,000 Mwh Annually

WFEC GENERATION OVERVIEW

- **Wind Energy New Mexico (93.7 Mw, 328,000 Mwh)**
 - Braums 1 & 2, 19.8 Mw (69,000 Mwh annually)
 - Anderson 14.9 Mw (52,000 Mwh Annually)
 - Sterling 30 Mw (105,000 Mwh Annually)
 - Wildcat 29 Mw (102,000 Mwh Annually)
- **Solar Energy Oklahoma and New Mexico (50.1 Mw, 128,000 Mwh)**
 - Tucumcari Solar 25 Mw (65,000 Mwh Annually)
 - Oklahoma Solar 20.1 Mw (50,000 Mwh Annually)
 - Middle Daisy Solar 5 Mw (13,000 Mwh Annually)
 - Tip Top Solar 220 Mw (697,000 Mwh Annually)(2022)
- Wind Portfolio in Oklahoma is 20-25 years in length at a fixed cost below 3 cents per kwh.
- Solar Portfolio is 20 – 25 years in length at a fixed cost near 2 cents per kwh

WFEC DEMAND AND ENERGY

Oklahoma

- **2019 demand – 1,560 MW**
- Energy sales – 8,650 GWh

New Mexico

- **2019 demand – 480 MW**
- Energy sales – 2,850 GWh

Total

- **2019 demand – 2,040 MW**
- Energy sales – 11,500 GWh

WFEC ENERGY IN 2019 AND 2024

	Today	2024
▪ Wind, Solar, Hydro	32%	48%
▪ Fossil Fuel	15%	15%
▪ SPP Market	21%	20%
▪ Long term Power Contracts	32%	17%
▪ GRDA, Oneta, SPS		

WFEC'S OPERATION

- Wholesale Power Cost delivered members at the low side or high side of the substation is \$55 since 2015, \$53 budget for 2020
- Unbundled Wholesale Power Tariff (\$47/\$5/\$2)
 - Generation Fixed Cost (manageable and base demand), Transmission (formulary), Sub Transmission (Formulary), Generation Variable Cost (energy) and Fuel

G&T VALUE

- As a member of a G&T members take advantage of larger, cheaper, utility scale projects
- Minimize cost for RTO and Integrated Market and Reliability Organization interactions
- Diversity between New Mexico (M.S.T.) and Oklahoma (C.S.T.) yield benefits in renewable delivery, generation peaking requirements and Load usage patterns
- Access to real-time information and control through shared communication
 - Distribution facilities in substations, Substation metering, Use of substation communication, Use of existing towers and poles for communication or under-build
- Access to Skilled Employee Support
 - Marketing, Engineers, Communication, Cyber-security, IT
 - Local and Community involvement, Training, Safety, Political
 - Assistance in developing Statewide EV and Ground Source Heat Pump programs

Questions