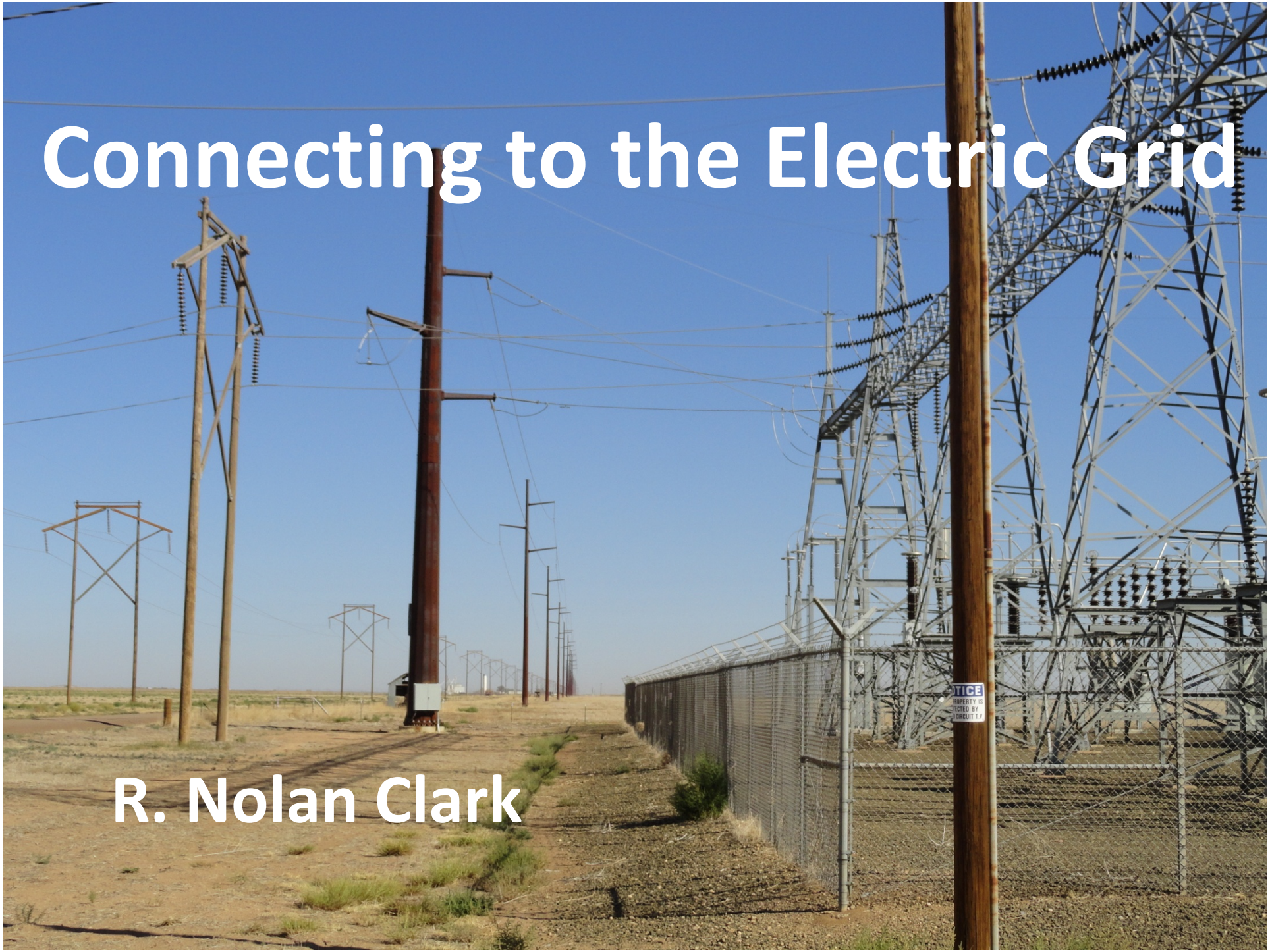


Connecting to the Electric Grid

R. Nolan Clark

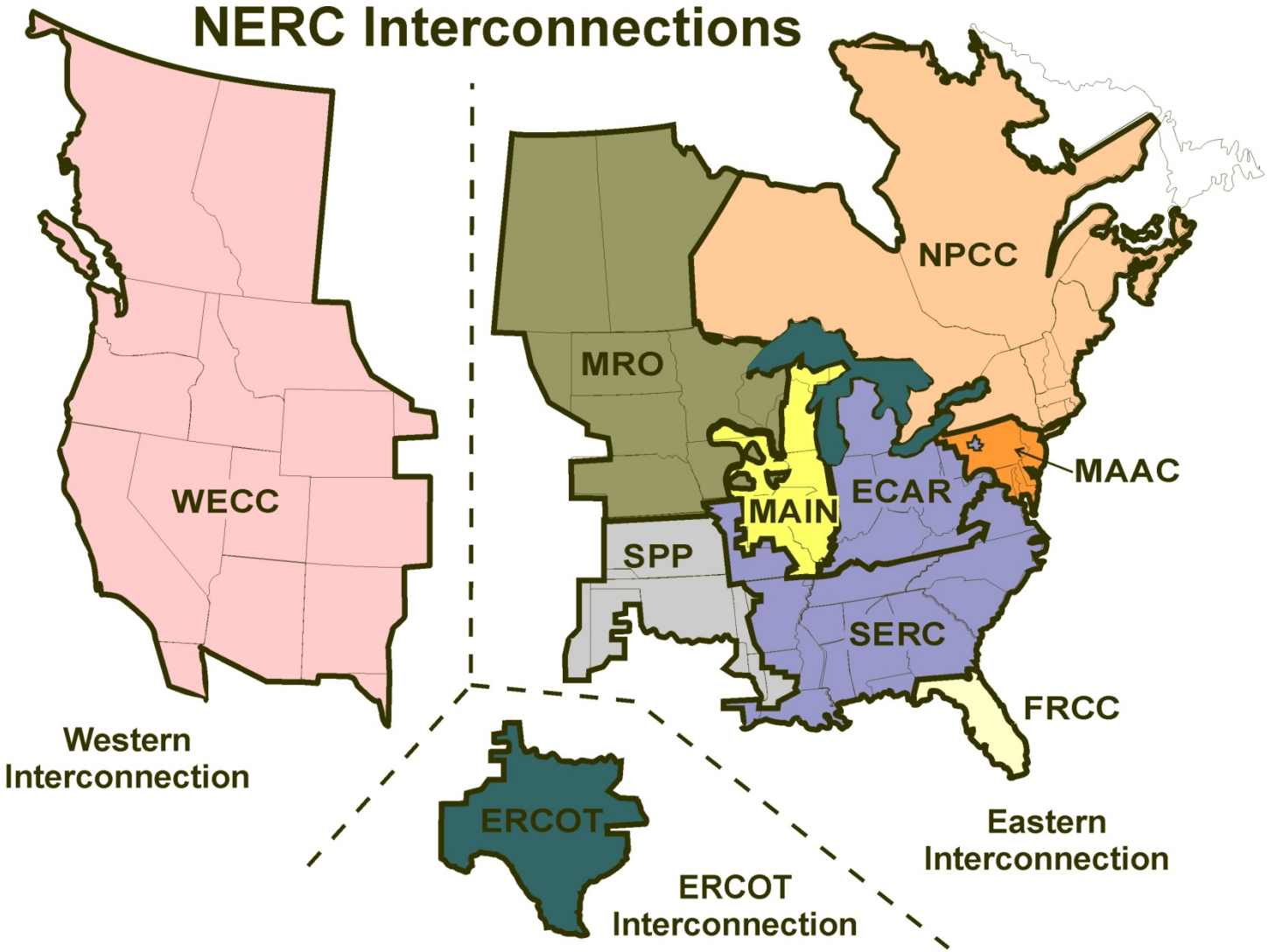
Commission Responsibilities

- Review and approve wholesale sales of electricity and transmission in interstate commerce for jurisdictional utilities, power marketers, power pools, power exchanges and independent system operators
- Certification of qualifying small power production and cogeneration facilities

State Regulatory Agencies for Electric Utilities

- Arizona Corporation Commission
- New Mexico Public Regulations Commission
- Oklahoma Corporation Commission
- Texas Public Utilities Commission

The Electric Power Grids of North America



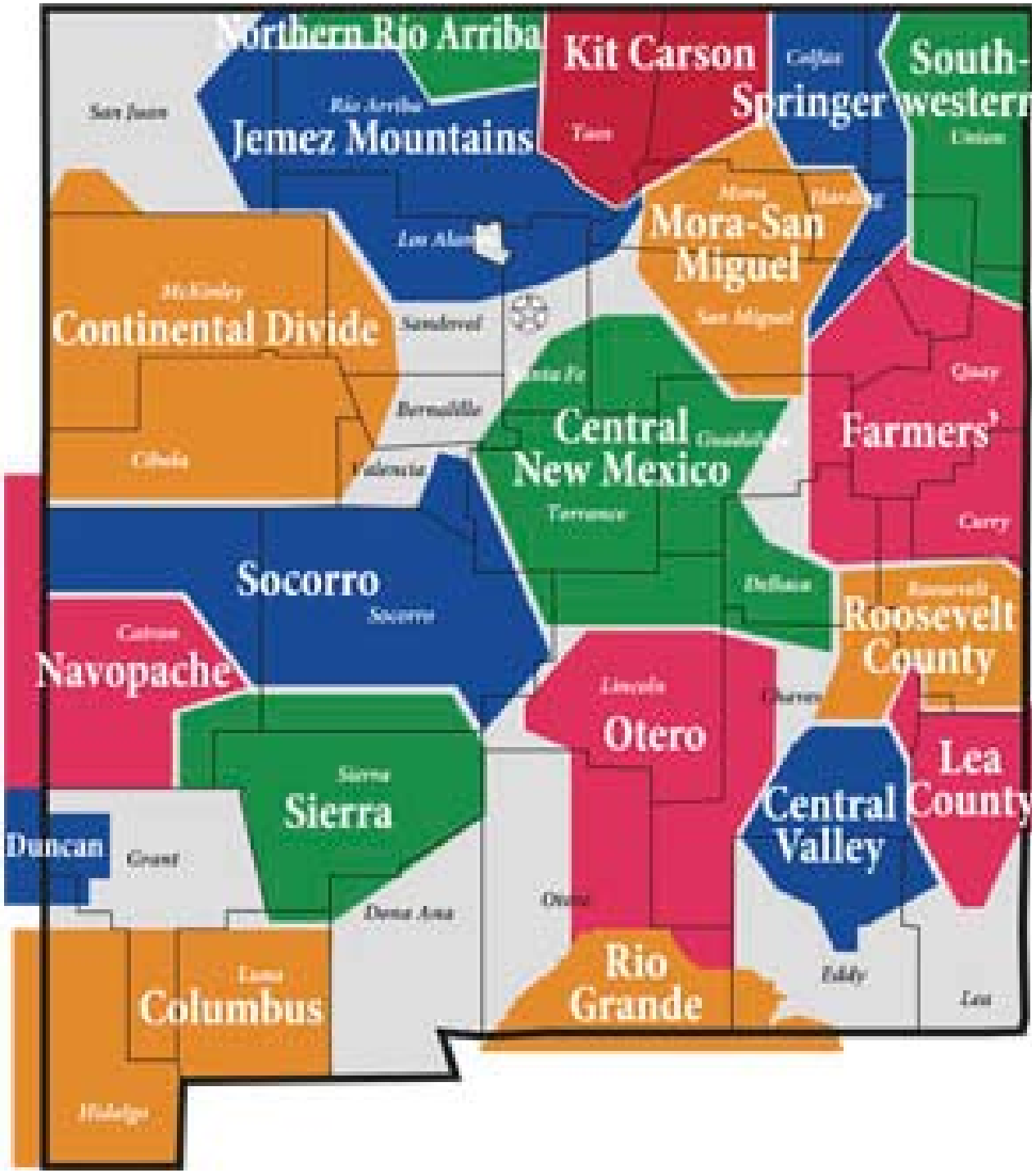
Types of Electric Companies

- **Generation** – Own and operate generating plants (hydroelectric dams, coal plants, etc.)
- **Transmission** – Own and operate transmission lines to move electricity across the countyside (usually high voltage)
- **Distribution** – Provide electrical services to local consumers (local low voltage lines, meters, and billing)

Local Utilities

- **Investor Owned** – Owned by individuals or a corporation of investors (Xcel Energy)
- **Municipal Owned** – Owned and operated by a city (Lubbock Power and Light)
- **Cooperative** – Owned by the people who purchase electricity from the utility (Rural Electric Cooperatives)

New Mexico's Rural Electric Cooperatives



Investor Owned

- Large companies that usually do generation, transmission and distribution
- Have set rules for small power producers
- Have established rates for purchased power
- Often accept small power producers to meet state requirements for renewable energy standards

Cooperatives

- Follow policies by the USDA Rural Electric Administration
- Almost all cooperatives purchase power from a wholesale source (Tri-state Generation)
- Many are just now developing policies for connecting independent generators to their systems

What to Do!

- Determine who your local electric company is and learn what type of company they are.
- Ask if they have written policies about connecting a generator to their system.
- Read and study the policies.
- Study their purchase rates.

Simplified Interconnection

- Median size generator is 300 kilowatts from a 1200 head dairy (EPA, AgStar)
- Average size generator is 487 kilowatts from a 1965 head dairy (EPA, AgStar)
- Dual metering required with a disconnect


MILBANK
MILBANK

PNM Purchase Rates 2011

Month	Off-peak Rate	On-peak Rate
February	$0.037117	$0.039328
April	0.028405	0.040160
June	0.025513	0.082084
August	0.031873	0.034442
October	0.020692	0.026244
December	0.028297	0.034075

Problem??

- Buying electricity at retail rate for milking parlor, refrigeration storage, feed mill, water pumping, etc.
- Selling electricity at wholesale or less from your generator

Solution!!!

- Maximize the use of the electricity you produce
- Sell as little electricity to the utility as possible
- Manage your digester system to produce electricity when you have peak electrical use
- Operate generator during feed mill operation times, peak refrigeration times, water pumping