

PUBLIC POWER IN NEBRASKA



Public Power in Nebraska



A Legislative Research Office Backgrounder

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INTRODUCTION



Nebraska is often described as a public power state. But what does that mean? How did the state get the public power system that it has today, and where does Nebraska's system fit into the national picture?

This LRO Backgrounder— Public Power in Nebraska—is designed to provide a solid foundation and pertinent information regarding the structure and development of the public power system in Nebraska, what makes public power different, and the current regulatory and market landscape for electricity in the United States.

How is Nebraska's Electricity Industry Structured?

Electricity in Nebraska is supplied to consumers by customer-owned not-for-profit entities, including public power districts, cooperatives, and municipalities. We are the only state where this is true. In every other state, for-profit companies are involved in supplying electricity to consumers.

With the exception of some renewable energy generation facilities owned by private developers, generation and transmission of electricity throughout Nebraska is controlled by publicly owned entities or cooperatives.



Major Players in Nebraska’s Electricity Industry Today

Nebraska Public Power District (NPPD)

NPPD derives its wholesale power supply from agreements with 46 towns and 25 rural public power districts and rural cooperatives in 86 of Nebraska’s counties. NPPD also serves about 80 communities at the retail level. NPPD serves over 600,000 people and has over 5,200 miles of transmission lines.

Omaha Public Power District (OPPD)

OPPD serves a 13-county, 5,000 square mile area in southeast Nebraska. The service area includes over 800,000 people, including 47 towns at retail and five at wholesale.

Tri State Generation & Transmission (Tri-State G&T)

Tri-State G&T serves six public power districts in western Nebraska.

Nebraska Electric Generation and Transmission Cooperative, Inc. (NEG&T)

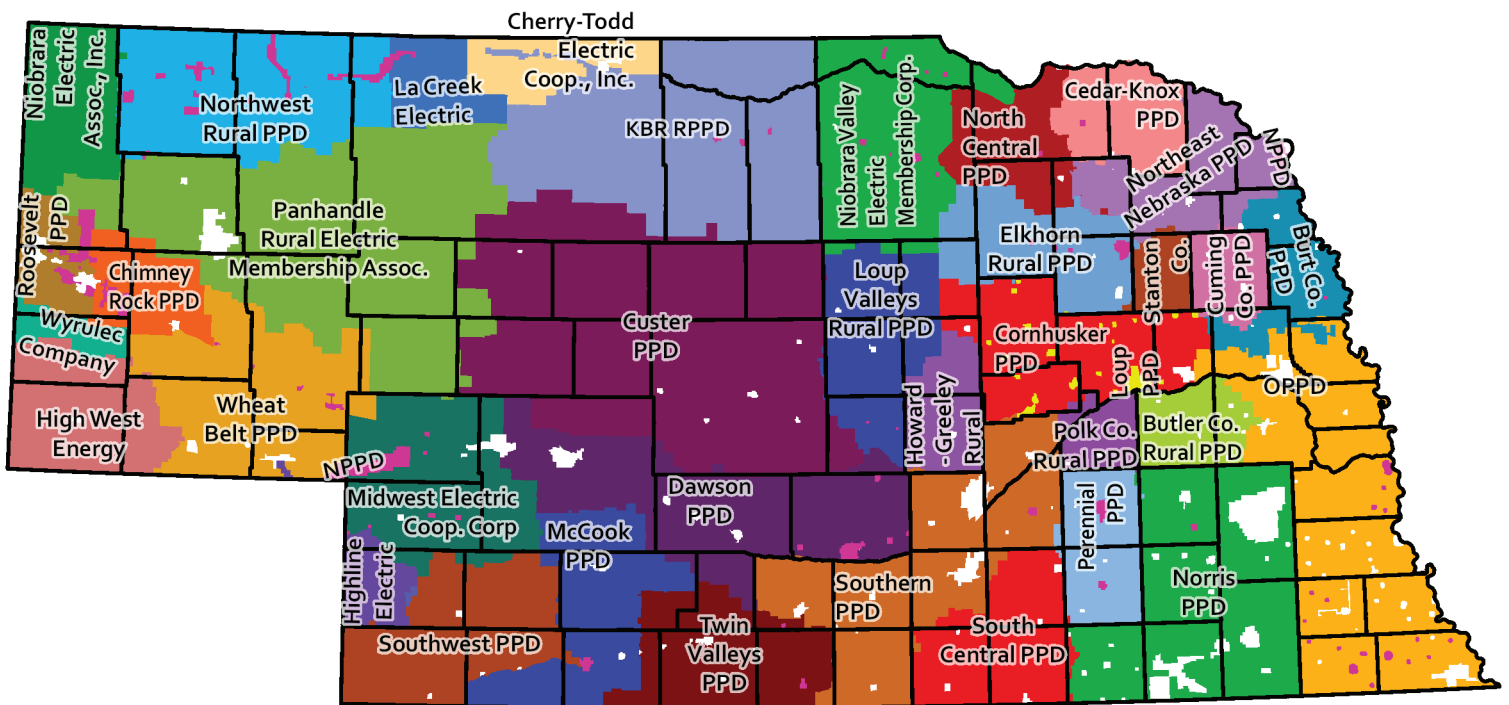
NEG&T’s is a cooperative with membership from 20 public power districts and one electric membership corporation. It serves about 150,000 customers at retail in eastern Nebraska.

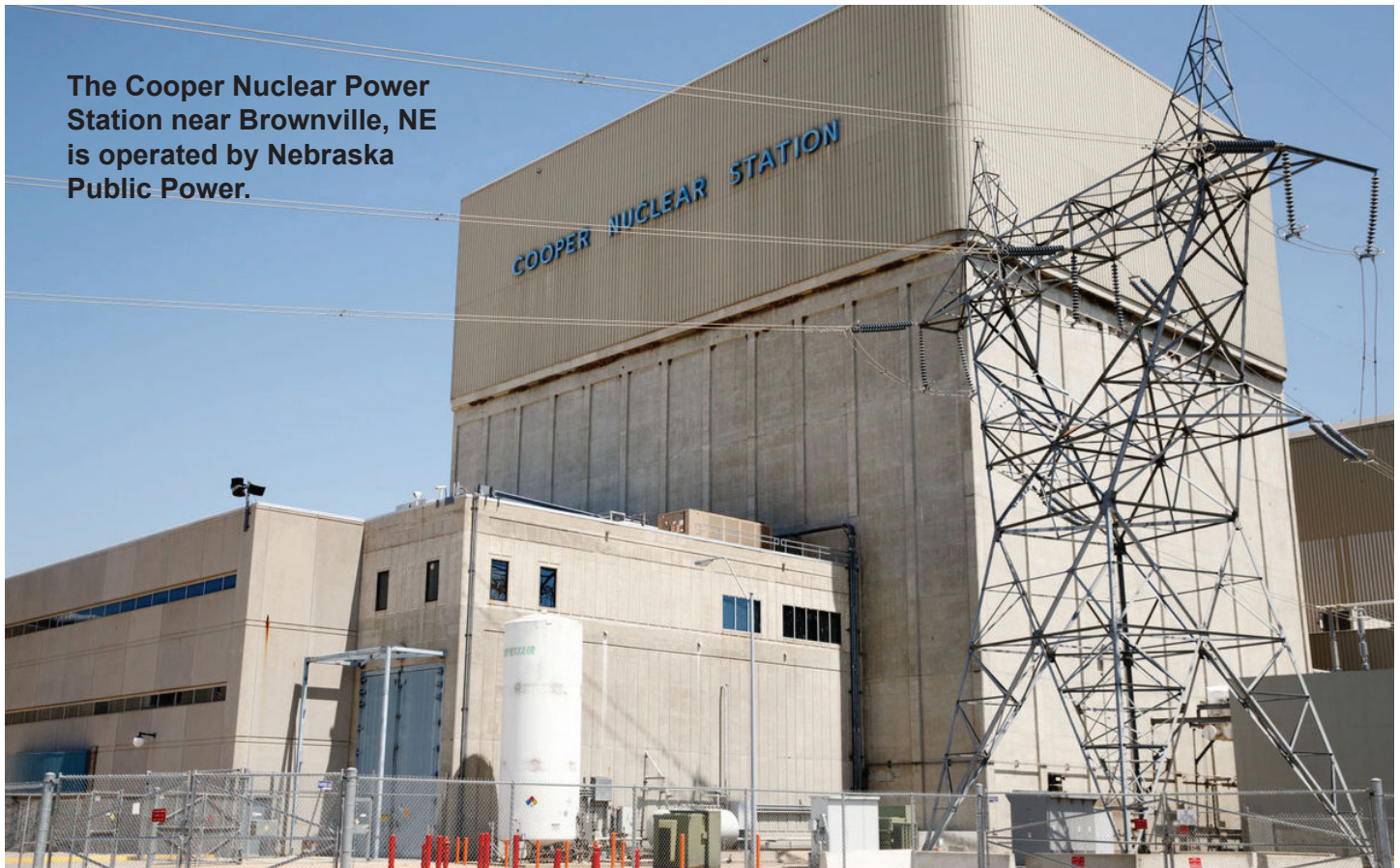
Nebraska Municipal Power Pool (NMPP)

NMPP has nearly 140 members in Nebraska, most of which are municipalities, and provides distribution, management, computer services, and energy research and development funds to its members. In addition, the Municipal Energy Agency of Nebraska is a wholesale supply organization of NMPP that provides supply and transmission to 42 municipalities in Nebraska and additional communities in Colorado, Iowa, and Wyoming.

The following map illustrates Nebraska’s public power districts and rural cooperatives operating in 2017.

Nebraska Public Power Districts and Rural Electric Cooperatives 2017





The Cooper Nuclear Power Station near Brownville, NE is operated by Nebraska Public Power.

Nebraska's Power Review Board

The Nebraska Power Review Board regulates the electricity industry in the state.¹ The review board is composed of five board members, appointed by the Governor to four-year terms. Board members cannot serve more than two consecutive terms, and no more than three members can be from the Governor's political party. Members must include: an accountant, an attorney, an engineer, and two laypersons.

The review board:

- Certifies utility service areas and agreements between public power districts, rural electric cooperatives, municipalities, or joint agencies to provide or sell wholesale and retail energy;
- Approves construction of new generation or transmission facilities with capacity of 700 volts or

more, unless the new generation or transmission is within the utility's own certified service area or the facility is a privately developed renewable energy generation facility that meets certain enumerated requirements;

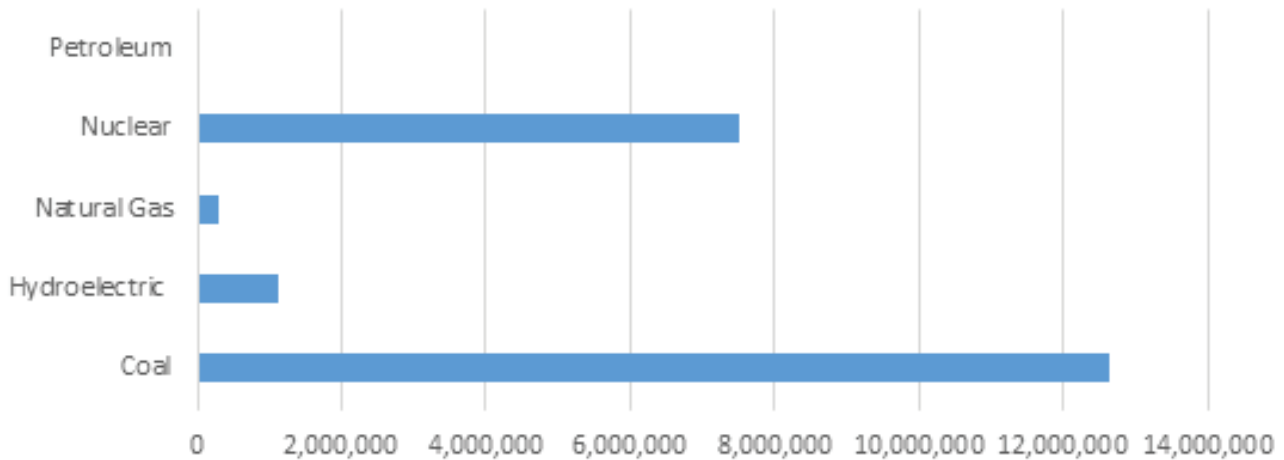
- Approves creation of new public power districts or amendments to districts' petitions for creation;
- Hears certain rate disputes between utilities and customers;
- Approves construction of microwave communication facilities; and
- Prepares an annual Power Supply Plan.

1. *Neb. Rev. Stat. secs. 70-1001 – 70-1028.*

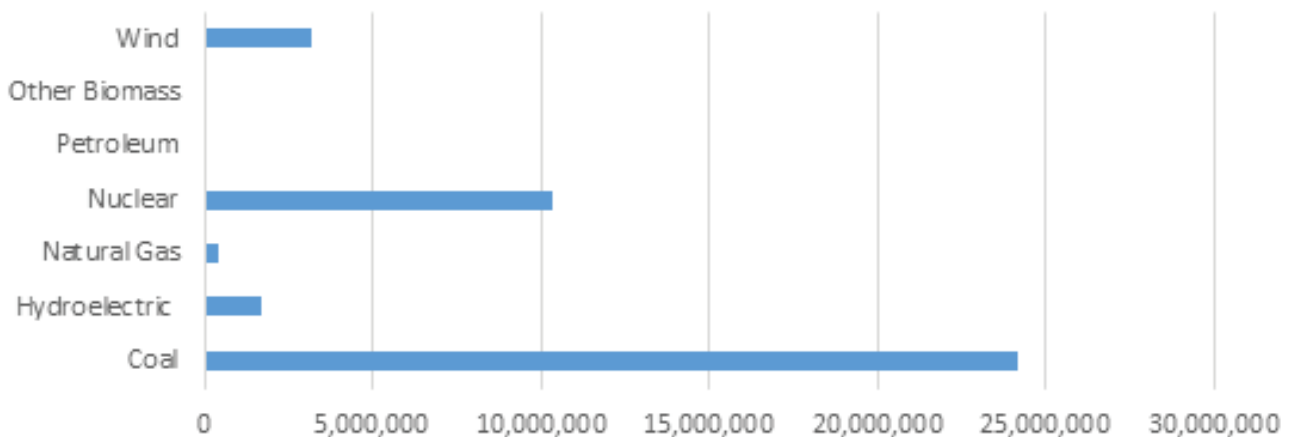
Electricity Generation Statistics

According to the United States Energy Information Administration (EIA), over the past 25 years, the source of electricity generation in Nebraska has changed. In 1990, the majority of electricity generation was produced from coal, with the remainder coming from nuclear or hydroelectric, and a much smaller percentage from natural gas. By 2015, the majority of electricity generation was still produced from coal, followed by nuclear, but in third place was wind generation. The following charts illustrate the net electricity generation for 1990 and 2015, respectively.

Nebraska Net Electricity Generation (MWh) 1990



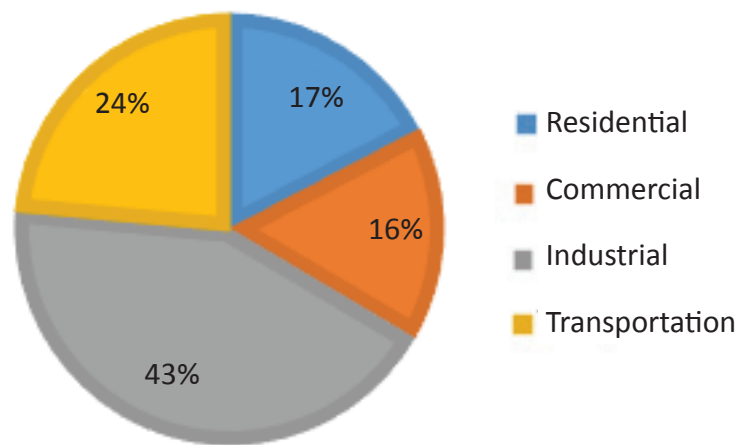
Nebraska Net Electricity Generation (MWh) 2015



Nebraska's Electricity Consumption

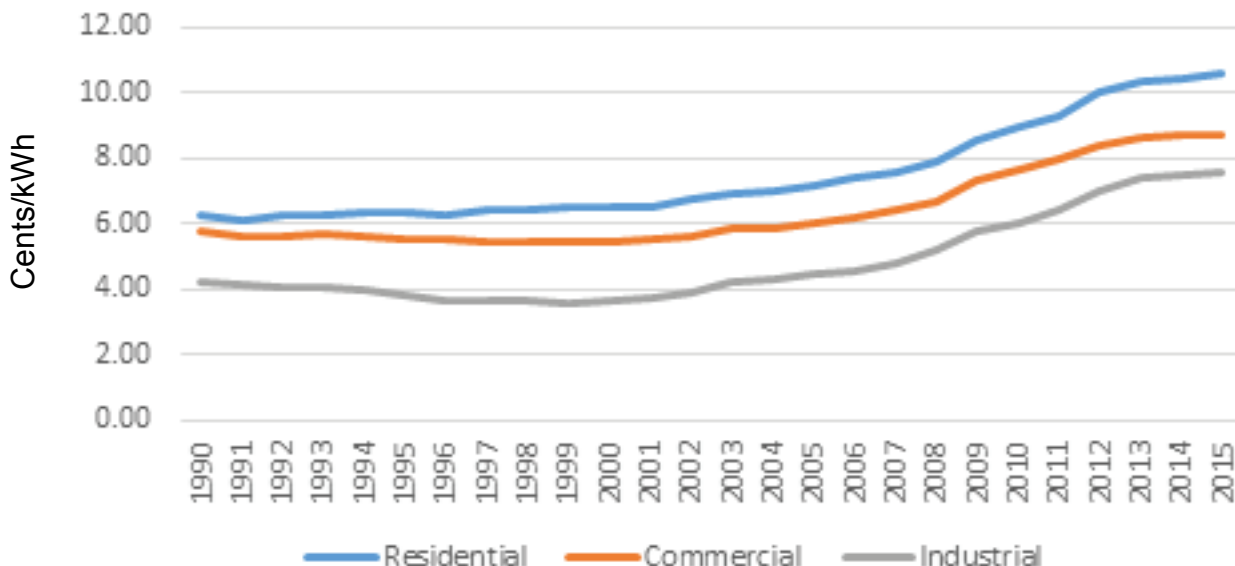
In 2015, Nebraskans used 450 million Btus, ranking 7th nationally in per capita energy consumption, and expenditures were \$4,326 per capita, which ranked 8th nationally. Nebraska had 825,940 residential customers, 149,820 commercial customers, and 60,556 industrial customers for the same time period. Total consumption of electricity by sector in Nebraska for 2015 is shown in the following chart.

Nebraska Energy Consumption by Sector (2015)



As depicted, prices for electricity in Nebraska have risen relatively slowly over the past 25 years for residential, commercial, and industrial users.

Average Electricity Prices in Nebraska (1990-2015)



Compared to other states, Nebraska has relatively low residential electricity prices. EIA releases data on the monthly average prices for electricity sold to residential customers in each state. Nebraska has lower prices in winter months than summer months due to lower demand. For example, in December 2016, Nebraska had an average monthly residential price of 9.73 cents/kWh, which ranked 8th lowest nationally. In June 2017, Nebraska had an average monthly residential price of 12.06 cents/kWh, which ranked 19th lowest nationally. The following table shows each state’s average annual price for 2016 and rank.

Average Annual Residential Electricity Price, cents/kWh (2016)

State	Price	Rank	State	Price	Rank	State	Price	Rank
Louisiana	9.11	1	West Virginia	11.22	18	Kansas	12.95	35
Washington	9.38	2	Florida	11.24	19	Delaware	13.47	36
Arkansas	9.90	3	Indiana	11.39	20	Pennsylvania	14.03	37
Idaho	10.00	4	Georgia	11.41	21	Maryland	14.23	38
Oklahoma	10.07	5	Virginia	11.42	22	Wisconsin	14.38	39
North Dakota	10.24	6	Nevada	11.42	22	Michigan	15.30	40
Kentucky	10.29	7	South Dakota	11.43	24	New Jersey	15.75	41
Tennessee	10.33	8	Colorado	12.02	25	Maine	15.80	42
Mississippi	10.54	9	Alabama	12.04	26	Vermont	17.33	43
Oregon	10.63	10	New Mexico	12.08	27	California	17.40	44
Nebraska	10.87	11	Arizona	12.21	28	New York	17.59	45
Missouri	10.89	12	Illinois	12.23	29	New Hampshire	18.43	46
Texas	11.02	13	Iowa	12.25	30	Rhode Island	18.63	47
Montana	11.04	14	Ohio	12.28	31	Massachusetts	19.11	48
Utah	11.08	15	South Carolina	12.44	32	Connecticut	20.00	49
North Carolina	11.14	16	Minnesota	12.73	33	Alaska	20.61	50
Wyoming	11.18	17	D.C.	12.87	34	Hawaii	27.46	51



Nebraska is among the top 10 states in per capita energy consumption because of its energy-intensive industrial sector, led by food processing, chemical manufacturing, and agriculture.

State Electricity Profiles 2015

EIA publishes state electricity profiles that include the net generation in megawatt hours (MWh), and total retail sales in megawatt hours (MWh) for each state. For 2015, the most current reported year, Nebraska produced more than 10 million MWh of electricity than it sold at retail.

Name	Net generation (MWh)	Total retail sales (MWh)
Alabama	152,477,427	88,845,543
Alaska	6,284,937	6,159,204
Arizona	113,142,048	77,349,416
Arkansas	55,559,428	46,465,154
California	196,703,858	261,170,437
Colorado	52,393,077	54,116,046
Connecticut	37,470,622	29,476,155
Delaware	7,810,006	11,498,205
DC	53,750	11,291,233
Florida	237,412,633	235,599,398
Georgia	128,817,898	135,878,215
Hawaii	10,119,500	9,511,352
Idaho	15,667,095	23,058,814
Illinois	193,952,040	138,619,970
Indiana	104,019,275	104,514,518
Iowa	56,658,918	47,147,293
Kansas	45,527,124	39,849,127
Kentucky	83,543,671	76,038,630
Louisiana	107,812,354	91,676,489
Maine	11,741,265	11,888,168
Maryland	36,365,544	61,781,719
Massachusetts	32,085,969	54,621,088
Michigan	113,008,050	102,479,921
Minnesota	56,979,768	66,579,234
Mississippi	64,757,864	48,691,529
Missouri	83,640,067	81,504,081

Name	Net generation (MWh)	Total retail sales (MWh)
Montana	29,302,401	14,206,911
Nebraska	39,883,391	29,495,073
Nevada	39,046,784	36,019,690
New Hampshire	20,015,893	10,999,149
New Jersey	74,608,860	75,489,623
New Mexico	32,701,398	23,093,553
New York	138,627,721	148,913,655
North Carolina	128,388,445	133,847,523
North Dakota	37,156,612	18,128,948
Ohio	121,893,401	149,213,224
Oklahoma	76,135,596	61,336,385
Oregon	57,866,535	47,263,974
Pennsylvania	214,572,291	146,344,028
Rhode Island	6,939,019	7,664,718
South Carolina	96,532,213	81,328,246
South Dakota	9,633,033	12,101,979
Tennessee	75,214,636	99,632,108
Texas	449,826,336	392,337,354
Utah	41,949,120	30,192,350
Vermont	1,982,047	5,521,109
Virginia	84,411,592	112,009,045
Washington	109,287,458	90,116,086
West Virginia	72,295,269	32,303,026
Wisconsin	66,360,183	68,698,932
Wyoming	48,966,519	16,924,762
U.S. Total	4,077,600,939	3,758,992,390

What Makes Public Power Different?

Electricity in the United States is generated, transmitted, and distributed at retail by many different types of entities, and these entities employ different business models, vary in size and scope, and are subject to different regulatory oversight.

Types of Utility Ownership

The types of entities that generate, transmit, and distribute electricity include:²

- Public power utilities, which are owned by governmental units, including municipalities, states, public utility districts, irrigation districts, or joint agencies. Public power utilities vary in size and scope: Some are small distribution utilities and some are large, vertically integrated utilities. As publicly owned entities, public power utilities are exempt from certain taxes.
- Rural electric cooperatives, which are nonprofit member-owned utilities where members hold voting and ownership rights and management is elected by the membership. Cooperatives receive federal funding through the Department of Agriculture's Rural Utility Service and cooperative banks and are exempt from income tax.
- Federally owned utilities, which operate in many areas of the country. There are five federally owned utilities: (1) Tennessee Valley Authority (TVA); (2) Bonneville Power Administration (BPA); (3) Southeastern Power Administration (SEPA); (4) Southwestern Power Administration (SWPA); and (5) Western Area Power Administration (WAPA).

A public power system differs from other types of electricity systems because of the ownership structure of the utilities that provide the electricity: Electricity is provided to customers by governmental and other types of nonprofit entities, such as cooperatives, in a public power system.

TVA is an independent government corporation that provides electricity for customers and distributors and provides flood control and management of the Tennessee River system. TVA is generally funded by electricity revenue, rather than taxpayer funding.

The other four federally owned utilities are entities within the Department of Energy. BPA, SEPA, SWPA, and WAPA are Power Marketing Administrations (PMAs) that maintain transmission infrastructure and market hydroelectric generation at dams operated

by the Bureau of Reclamation or the Army Corps of Engineers. The PMAs also own and operate thousands of miles of transmission lines linked with the systems of other utilities.

- Investor-owned utilities, which are privately owned, for-profit businesses whose retail service is regulated by state regulatory commissions, and as such, receive a regulated rate of return based on investments made to serve the ratepayers. Investor-owned utilities can be vertically integrated or own transmission or distribution components.
- Independent power producers, which sell electricity through markets and contracts with utilities and other customers. Independent power producers base electricity prices on the market, rather than costs, and often have highly fluctuating returns.
- Competitive retail energy suppliers, which sell electricity to customers in states with retail markets, and therefore, do not earn a regulated rate of return. These companies supply power to customers and can offer competitive pricing and customer service. However, retail energy suppliers do not transmit or deliver the electricity but contract with utilities or other entities for those services.
- Energy service companies, which develop and implement projects aimed at improving energy efficiency, reducing costs of operation, or reducing capacity constraints. These companies provide these services using performance-based contracts that are tied to the cost savings associated with the projects.
- Demand-response aggregators, which contract with customers to reduce electricity consumption in exchange for financial incentives during periods of high demand or prices, system constraints, or emergencies. Existing utilities and third-party providers can serve as demand-response aggregators, and aggregators can participate in the energy and capacity markets.

2. United States Department of Energy, *Quadrennial Energy Review, Second Installment*, January 6, 2017.

Utility Ownership in Nebraska

The following table from the United States Department of Energy, prescribes the most common types of utility ownership nationally:

Utility Type	Number of Utilities	Number of Customers	Miles of Power Lines	
			Transmission	Distribution
Investor-Owned Utilities	169	107,566,949	3,467,216	459,480
Municipal Utilities	1,834	15,151,058	320,953	27,585
Rural Electric Cooperatives	814	19,232,195	2,397,111	116,635
Federal and Publicly Owned Utilities	124	5,280,112	333,720	95,962
Total	2,941	147,230,314	6,519,000	699,662

Nebraska has rural electric cooperatives and publicly owned entities (public power districts and municipally owned entities) that provide electricity service to consumers. Nebraska is also within the 15 state region of the federally owned Western Area Power Administration.

Public power districts in Nebraska are political subdivisions and are subject to:

- The Elections Act in the election of board members;³
- The Open Meetings Act;⁴
- Annual audit requirements by the Auditor of Public Accounts;⁵ and
- Requirements to have all books and records open to public inspection.⁶

Public power districts are exempt from income and property taxation, but do pay in lieu of tax payments to local political subdivisions as a substitute for property taxes.⁷ In 2016, the total in lieu of tax paid by public power

districts was \$46,061,323.73.⁸

Renewable energy generation facilities pay a nameplate capacity tax instead of personal property tax.⁹ The tax is \$3,518 per megawatt of production capacity of the facility. Total nameplate capacity tax collected in 2016 was \$2,649,229.¹⁰

Public power districts cannot levy a property tax or issue general obligation bonds paid by tax revenue for operating expenses, but can issue revenue bonds for capital expenses.¹¹

Rural electric cooperatives are nonprofit organizations where management is elected by members with voting rights. Cooperatives are not political subdivisions, so are not exempt from property tax or subject to the same open meeting or audit requirements as public power districts. Cooperatives can be formed under statutory provisions dealing with power districts or as nonprofit corporations.¹²

Currently, there are no investor-owned utilities, competitive retail energy suppliers, energy service

3. *Neb. Rev. Stat. sec. 70-610.*

4. *Neb. Rev. Stat. secs. 84-1407 – 84-1414.*

5. *Neb. Rev. Stat. sec. 70-623.02.*

6. *Neb. Rev. Stat. sec. 70-622.*

7. *Neb. Rev. Stat. secs. 70-651.01 – 70-651.05.*

8. *Nebraska Department of Revenue, Annual Report, Table 21A, accessible at http://www.revenue.nebraska.gov/PAD/research/annual_reports/2016/annrpt2016_table_21.pdf.*

9. *Neb. Rev. Stat. sec. 77-6203.*

10. *Nebraska Department of Revenue, Nameplate Capacity Tax Summary, accessible at http://www.revenue.nebraska.gov/research/misc_tax_data.html.*

11. *Neb. Rev. Stat. secs. 70-629, 70-631.*

12. *Neb. Rev. Stat. sec. 70-701 et seq. and 70-801 et seq.*

An Example from Iowa

In most other states, the majority of electricity is supplied to consumers by investor-owned utilities. For example, in Iowa, approximately three-fourths of customers are served by two of these utilities.

The Iowa Utilities Board 2016 Iowa Utility Electric Profile details supply of electricity in the state. According to the profile, two investor-owned utilities served 72.21 percent of customers in the state and had 75.08 percent of total retail sales. There were 136 municipally owned utilities, which provided service to 13.47 percent of customers and accounted for 11.07 percent of total retail sales. Forty-four utilities were rural cooperatives, which served 14.32 percent of customers and accounted for 13.85 percent of total retail sales.

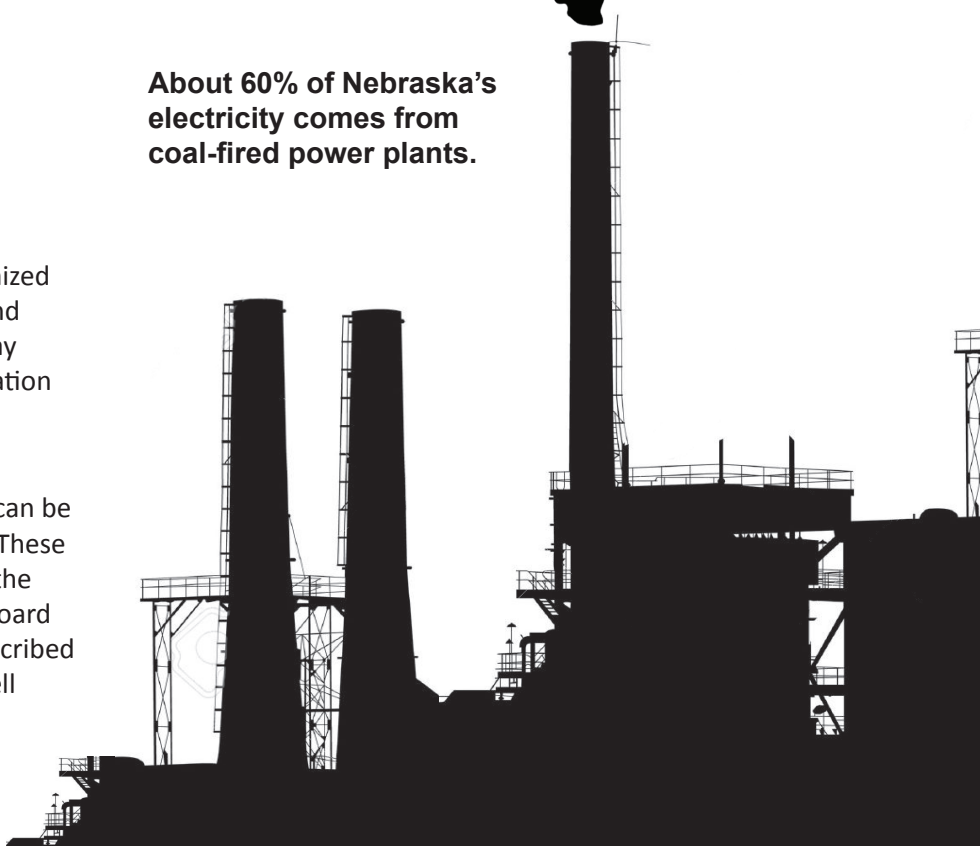
In addition, according to a 2016 Energy Information Administration report listing power plants by state, plants in Iowa are owned by investor-owned utilities, municipalities, rural cooperatives, and independent power producers. Iowa has four cooperatives operating only in generation and transmission of electricity.

companies, or demand-response aggregators operating in Nebraska.

Generally, Chapter 70 of the Nebraska Reissue Revised Statutes limit electricity generation, transmission, and retail activity in the state to public power districts, rural cooperatives organized as power districts or nonprofit corporations, and municipalities. However, private companies may engage in developing renewable energy generation facilities, subject to certain requirements.

Many of Nebraska's wind or solar generation facilities are owned by private companies and can be categorized as independent power producers. These generation facilities are exempt from many of the requirements of the Nebraska Power Review Board and have a simplified approval process, as prescribed in Laws 2016, LB 824, but are not allowed to sell electricity at retail in the state.¹³

About 60% of Nebraska's electricity comes from coal-fired power plants.



13. *Neb. Rev. Stat. secs. 70-1012 – 70-1014.02.*

How Did Nebraska Become a Public Power State?

The Nebraska Legislature first authorized municipalities to contract for and regulate the operations of electric utilities in 1885. The first municipal electric utility was formed in Crete in 1887. By 1926, there were 282 municipal electric utilities in the state. In addition, 56 private companies provided electricity during this time, and rural cooperatives began to develop to provide service to agricultural customers.

During this same time period, five holding companies formed in Nebraska, merging private and municipal utilities. Because public utilities often lacked the capital to improve their facilities, they were more susceptible to the consolidation efforts of holding companies. In 1930 voters passed Initiative 324 authorizing revenue bond financing for municipal utilities, aiding them in obtaining capital financing.

In 1933, Nebraska lawmakers passed Senate File 310, also called the “Enabling Act.” The Enabling Act essentially created public power districts by authorizing 15 percent of eligible voters to petition to form a public power and/or irrigation district in an area (a county, several counties, or a number of voting precincts). The board of directors for the district was prescribed by each petition.

Federal funding via the Public Works Administration and Rural Electrification Act contributed to the support for public power development in the state. In addition, the enactment of the federal Public Utility Holding Company Act of 1935 (PUHCA) forced the dissolution and restructuring of the holding companies after widespread abuse was found. Litigation continued over implementation of the PUHCA until the U.S. Supreme Court’s decision supporting the breakup of the holding companies, causing a sell-off of their assets between 1940 and 1942.¹⁴



The U.S. Rural Electrification Administration was created in 1935 to provide electric service to rural America.

Between 1933 and 1943, 16 public power and/or irrigation districts and 35 rural electrification districts were formed in Nebraska. In 1939, the Legislature amended the Enabling Act, allowing a power district to act as a wholesaler for other power districts.¹⁵ Consumers Public Power District was established as a result. A joint operating agreement for the three hydropower plants in the state was also created in 1940. The Nebraska Public Power System was created to carry out these agreements and to act as a wholesale marketing and transmission agency.

By 1942, most of Nebraska used public power. The exception was the city of Omaha. OPPD was formed in 1946 and acquired the assets of the privately owned Nebraska Power Company. The last privately owned power company was transferred to the North Central Public Power District in 1949, and Nebraska, at that time, became an all-public-power state.

14. *Electric Bond & Share Co. v. SEC*, 303 U.S. 419 (1938).

15. *Laws 1939, LB 170*.

Mid-Century: Growth of Oversight and Organization

During the 1950's and 1960's, access to electricity expanded from 25 percent of rural homes to 95 percent. Tensions arose over contested service areas, construction of new energy generation, and access to power. Legislative efforts focused on reorganization and creating public oversight over the system. Due to the passage of a 1958 ballot initiative amending the Nebraska Constitution, the Legislature enacted a bill the following year requiring public power districts to make payments in lieu of property taxes.¹⁶

Laws 1963, LB 220, created the Power Review Board. The board's primary responsibilities were to resolve disputes over service territory, review and approve proposed generation and transmission facilities, and provide advisory opinions for resolution of rate disputes. The bill required the board to be composed of one engineer, one attorney, one accountant, and two laypersons, all appointed by the Governor. Today, membership remains the same.

Lawmakers were also concerned about overlapping generation and transmission entities. Laws 1965, LB 764, known as the "Grid Bill," forced consolidation of several power districts, but the bill was declared unconstitutional in *Whittler v. Bumartner*, 180 Neb. 446 (1966). A constitutional amendment to create public electrical corporations for wholesale generation and transmission failed on the ballot in 1968.¹⁷

Continuing pressure on public power districts led to the voluntary merger of operations, and as a result, NPPD was formed in 1969. Initially, NPPD served 87 of the 93 counties and more than 200 municipalities in addition to

controlling most of the state's electricity transmission. Tri-State G&T continued to serve rural cooperatives and districts in the western region, OPPD served the southeast region, NEG&T served numerous rural electric systems, and independent municipalities provided their generation and contracts.

In the 1970s rising costs and environmental restrictions led many small municipal systems to look for alternatives, such as signing with NPPD as a wholesale supplier. Some municipal systems formed NMPP in 1975. NMPP allowed its 19-member municipal systems to own larger generating plants and acquire wholesale power supplies.

Studies and legislation during the 1970s related to efforts to reduce electricity costs, negotiate

contracts, and change service requirements. In 1979, legislation authorized arbitration for rate disputes, and the Power Review Board was required to review additions to municipal generating capacity using a three-part test.¹⁸ In 1981, the review board was required to produce and publish power supply planning information or work with the industry to do so.¹⁹ As a result of the 1981 legislation, the Nebraska Power Association developed a statewide plan. The Nebraska Power Association, formed in 1980, is a voluntary organization representing entities involved in generating, transmitting, and supplying electricity in Nebraska.

In 1982, the Legislature adopted the Joint Public Power Authority Act, which authorized entities to create a joint authority to issue revenue bonds for capital financing for large projects.²⁰



16. The ballot initiative was proposed by a voter petition. In lieu of tax payments were implemented by Laws 1959, LB 272.

17. Laws 1967, LB 107, placed the constitutional amendment on the 1968 ballot.

18. Laws 1979, LB 207; Laws 1979, LB 223.

19. Laws 1981, LB 302.

20. Laws 1982, LB 852.

The End of the Century: Deregulation and Competition



Louie the Lightning Bug was NPPD's electrical safety mascot during the 1990s and 2000s.

Following the federal implementation of the Public Utilities Regulatory Policies Act (PURPA) in 1978, throughout the 1980s and 1990s, the Nebraska Legislature and the Power Review Board studied deregulation of the electric industry.

In 1996, the Legislature adopted LR 455, which authorized a two-phase study of the structure of the electric utility industry and potential industry deregulation. LR 455 created a task force of industry representatives, hired an outside firm to prepare a research report and facilitate the process, and created an advisory group of 41 consumer advocates, environmentalists, business representatives, industry leaders, and legislators.

As a result of LR 455, the Legislature passed LB 901 in 2000. The bill required the Power Review Board to hold public hearings on retail electrical competition and to report annually whether the state would benefit from competition in the industry. In 2001, LB 243 was passed. LB 243 accommodated mergers and consolidations of

public power districts by allowing a board of a merged or consolidated district to negotiate rates for consumers in predecessor districts that differ from rates in the remaining service area. LB 243 also allowed districts to negotiate different rates for business and industry customers who have entered into an economic development project, subject to certain limitations.

Enacted legislation in 2004 and 2006²¹ focused on improving efficiency: (1) authorizing public entities to enter into electrical service purchase agreements and ownership agreements for electric facilities so public entities could share the costs of building large power plants; and (2) adopting the Public Entities Mandated Project Charges Act. This act ensured financing for the costs of mandated improvement projects, including generation, transmission, or distribution facilities, for public power entities, by allowing entities to charge customers a surcharge for the costs of such projects and repay bonds with the dedicated revenue collected from the customer payments.

21. *Laws 2004, LB 969; Laws 2006, LB 548.*

The Past Decade: Renewables

Legislation has largely focused on renewable energy in the last ten years.

Laws 2007, LB 629 created the Community-Based Energy Development (C-BED) program, a framework for local initiatives in wind energy development. Program projects must meet certain local ownership requirements, must be approved by the Power Review Board, and can negotiate power purchase agreements. In 2014, via passage of LB 402, the C-BED program was expanded to include other types of renewable energy. LB 402 also changed the local ownership restrictions to make C-BED more accessible.

A statewide net metering policy was adopted in 2009 by LB 436, which allows for interconnection between customer-generators and local distribution systems. Net metering policies apply to renewable energy facilities, including methane, wind, solar power, biomass, hydropower, or geothermal power at the premises of customer-generators.

Laws 2010, LB 1048 encouraged private renewable energy generation by creating a process for the Power Review Board to authorize certified renewable export facilities (CREFs) that meet certain requirements. Laws 2014, LB 1115 authorized the Power Review Board to commission a study of transmission infrastructure and policy, relating specifically to renewable energy. The resulting study, known as the Brattle report, identified several concerns relating to development of renewable energy generation, including the number of requirements in the CREF approval process and transmission constraints. As a result, LB 824 passed in 2016. LB 824 exempted privately owned renewable energy generation facilities from various requirements, simplifying the CREF approval process, but prohibiting private electric suppliers from selling or delivering electricity at retail in Nebraska.

The National Renewable Energy Laboratory estimates that more than 90% of Nebraska has suitable conditions for commercial-scale wind-powered electricity generation.



How Does Nebraska Fit into the National Landscape?

Nebraska’s public power industry fits into a larger national picture, participating in organizations that (1) enforce federal regulations and (2) coordinate interstate transmission and markets for electric generation. A discussion of these organizations, and how they impact Nebraska, follows. A more detailed discussion of significant federal legislation and rulemaking is found in Appendix A.

First created in 1920 as the Federal Power Commission, the Federal Energy Regulatory Commission (FERC) is the main national regulatory authority. FERC is an independent agency within the Department of Energy and regulates the transmission and wholesale sale of electricity, provides market oversight, and ensures reliability of the electric grid in the United States.

The National Energy Policy Act, enacted by Congress in 2005, created a certification process for an electric reliability organization (ERO) to approve and enforce reliability standards, subject to FERC oversight, for all users, owners, and operators of the bulk-power system in the country. The North American Electric Reliability Corporation (NERC) is the certified ERO responsible for

enforcing standards, assessing reliability, monitoring the electric system, and certifying personnel. NERC’s authority spans most of North America and is subject to government oversight in the United States and Canada.

Eight regional entities work with NERC to maintain the electrical system by assisting with monitoring and enforcement of reliability standards across the country.

These entities include the:

- Western Electricity Coordinating Council (WECC);
- Midwest Reliability Organization (MRO);
- Northeast Power Coordinating Council (NPCC);
- Southwest Power Pool (SPP);
- Texas Reliability Entity (TRE);
- ReliabilityFirst (RFC);
- SERC Reliability Corporation (SERC); and
- Florida Reliability Coordinating Council (FRCC).



Important Acronyms

- FERC:** Federal Energy Regulatory Commission
- NERC:** North American Electric Reliability Corporation
- ERO:** Electric Reliability Organization
- RTO:** Regional Transmission Organization
- MRO:** Midwest Reliability Organization
- SPP:** Southwest Power Pool

Approximately 1,400 U.S. entities are registered with NERC and meet applicable reliability standards. Nebraska's utilities—NPPD, OPPD, and Lincoln Electric System—are members of MRO in its capacity as an ERO. Tri-State G&T, which operates in the western part of the state, is a member of the WECC ERO. Map 1 depicts the eight regional entities in their capacity as EROs.

The map also shows the three separate electrical grids in the U.S.: one in the eastern part of the country, one in the west, and one that covers most of Texas. The portion of western Nebraska served by Tri-State G&T is in the Western Interconnection. Notably, the grid in Texas is not interconnected to the rest of the country, and therefore, is not regulated by FERC.

In addition to regional EROs assisting with enforcement of reliability standards, there are also organizations that serve as regional transmission organizations (RTOs). RTOs are often the same organizations as EROs, but may cover different areas for this separate purpose. RTOs operate and manage the transmission system and offer a market structure for entities selling electric generation.

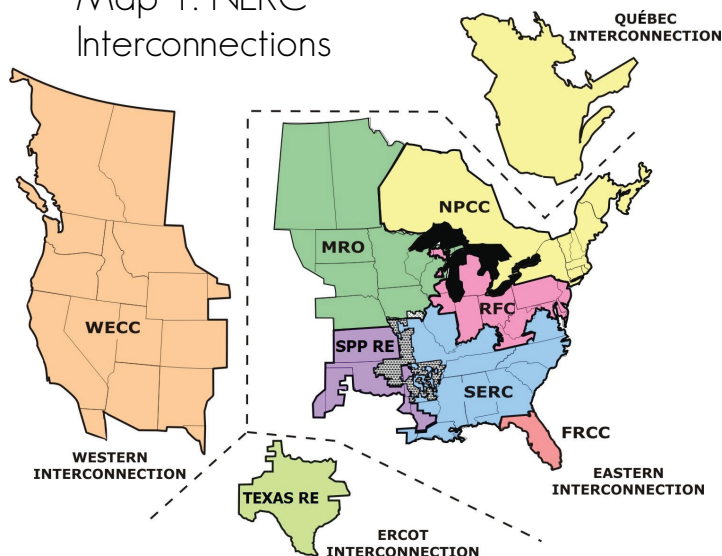
Nebraska's utilities are members of the Midwest Reliability Organization for enforcement of reliability standards but members of the Southwest Power Pool (SPP) in its capacity as a regional transmission organization. SPP became an RTO in 2004 and manages transmission and wholesale markets in 14 states, serving about 17.5 million people. Members of SPP include investor-owned utilities, municipal systems, generation and transmission cooperatives, state agencies (such as NPPD), independent power producers, power marketers, and independent transmission companies. SPP oversees 790 generating plants, 4,835 substations, and 65,755 miles of transmission lines.

Map 2 shows the area served by the SPP in its capacity as an RTO as of July 2017. This area is larger than the area currently served by the SPP in its capacity as an ERO (see Map 1.)

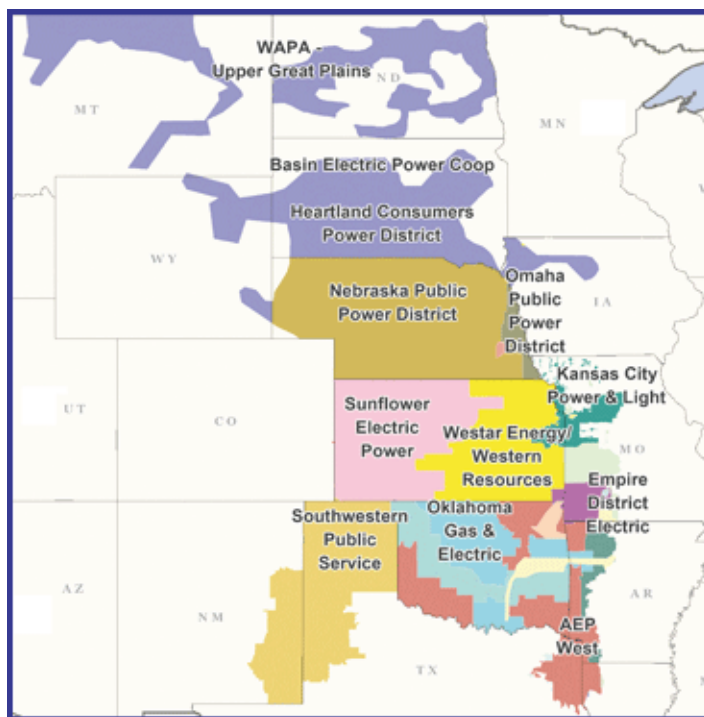
SPP assists members with planning new transmission projects, interconnecting transmission projects to the current grid, and studying potential upgrades to meet transmission service needs. SPP also manages the wholesale marketplace for energy in its member states through the Integrated Marketplace by:

- Providing infrastructure and systems to facilitate the market;
- Setting prices and handling monetary exchanges to financially settle the market; and

Map 1: NERC Interconnections



Map 2: Southwest Power Pool



- Monitoring the market to provide oversight.

SPP has a Regional State Committee, comprised of representatives from its member states' retail regulatory commissions. The committee allocates transmission rights, allocates costs for transmission upgrades, and addresses regional resource adequacy. One member of the Nebraska Power Review Board is designated to represent the board on the committee.



Looking to the Future

Policymakers continue to study Nebraska's public power system. In 2017, bills were introduced relating to development of wind, solar, and other forms of renewable energy; net metering; and the authority of public power districts to use eminent domain.

Additionally, legislation was introduced to allow private companies to supply electricity to customers in competition with public entities. This past summer, the Legislature's Natural Resources Committee conducted an interim study, LR 125, evaluating public power and potential for competition in retail markets in Nebraska. Ongoing discussion of these issues continues.



Appendix: Federal Law

Federal law has shaped the regulatory landscape for electric utilities and created the framework for utilities to function over the years. Following is a timeline of major federal legislation impacting the electricity industry. This federal structure serves as the backdrop for the industry today.

- 1920: The Federal Water Power Act created the Federal Power Commission (now the Federal Energy Regulatory Commission (FERC)) to oversee the development of hydropower in the United States by entities not owned by the federal government. Amended in 1935, the act expanded the jurisdiction of the commission to regulate interstate electricity transmission and wholesale electricity sales, including rates, terms, and conditions of service.
- 1935: The Public Utility Holding Company Act (PUHCA) authorized regulation of public utility holding companies' financial transactions by the Securities and Exchange Commission and prohibited certain business structures. The act significantly reduced the number and impact of holding companies in the electricity markets in the United States.
- 1978: The Public Utilities Regulatory Policies Act (PURPA), part of the National Energy Act, required utilities to buy power from qualifying facilities at "avoided-cost" prices that were: (1) just and reasonable to the electricity consumers and in the public interest, (2) nondiscriminatory with respect to qualifying facilities, and (3) less than or equal to the incremental cost to the electric utility of alternative electric energy. As a result, PURPA led to creation of a new generation-only sector of the electricity market. PURPA also required state regulatory commissions and utilities to implement policies, such as time-of-day rates, cost-of-service for different classes of customers, master metering, and load management techniques.
- 1992: The National Energy Policy Act (NEPA) required transmission providers to provide service to third parties; adopted energy efficiency measures, such as requiring states to adopt building codes and equipment standards; and offered incentives for renewable energy development.
- 1996: FERC Order 888 and Order 889 encouraged competition in wholesale electricity markets. Order 888 required utilities that own or operate transmission to separate transmission and power marketing functions, offer transmission service to others under the same conditions they use it, and offer transmission service to all eligible wholesale buyers and sellers. Order 889 created an open access same-time information system and implemented standards so employees engaged in transmission activities and employees engaged in wholesale market tasks functioned independently. Together, the two orders led to the development of Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs).
- 2005: NEPA was amended to authorize mandatory reliability standards and certify a reliability organization to enforce those standards; study transmission congestion and evaluate alternatives for constraints and congestion, including siting and incentives to alleviate problems; increase tax incentives for renewable energy development; and weaken PURPA "avoided-cost" purchase requirements in certain circumstances.
- 2007: The Energy Independence and Security Act changed lighting energy efficiency standards, allowed subsidized loans to certain facilities, and called for smart grid interoperability standards to be developed.
- 2009: The American Recovery and Reinvestment Act funded energy efficiency and infrastructure programs as well as research in the Department of Energy.
- 2011: FERC Order 1000 established new rules for interregional transmission planning and cost allocation for all public utility transmission providers and eliminated a federal right of first refusal in FERC tariffs and agreements.

In addition, environmental legislation and rulemaking have affected development of new electricity generation, including the: Clean Air Act (1970); National Environmental Policy Act (1970); Clean Water Act (1972); Resource Conservation and Recovery Act (1976); New Source Performance Standards (1979); Clean Air Act Amendments (1990); Cross-State Air Pollution Rule (2011); Mercury and Air Toxics Standards (2011); and Carbon Pollution Standards and Clean Power Plan (2015).



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