

Forward

The Michigan Public Power Agency celebrated its 25th Anniversary in 2003. With that celebration the officers and commissioners thought it was the opportune time to memorialize the early history leading to the establishment of this Agency and those business developments that have transpired since that event.

Way back in the 1970's, the electric industry was going through changes that could be considered evolutionary and many of those changes resulted from technological advancements. Wholesale rates, terms and conditions were then cost-of-service based tariffs that were approved by the Federal Energy Regulatory Commission. The traditional electric utility was vertically integrated and solely in the electric utility business.

Today, wholesale purchases are made at market prices through bi-lateral contracts. Holding companies own numerous subsidiaries both domestically and internationally in addition to the retail electric utility company. Electric transmission assets have been spun-off into separate and new companies. Regional transmission organizations have been created with new pricing structures designed to eliminate multiple rates across the region (pancaking) into a single rate. The Midwest Independent System Operator is implementing an energy market with congestion pricing and financial arrangements in place of physical rights. Michigan retail customers of regulated electric utilities have the choice of generation suppliers. Environmental laws and rules have gotten more inclusive and stringent. Fuel prices are increasing and volatile. Independent power producers and most utilities have seen their financial ratings nosedive. The global economy is causing significant offshore relocation of basic industry, manufacturing and even services. The American homeland was attacked on 9/11/01 and is at war with Islamic terrorists around the world. All these changes and uncertainties are revolutionary in the U.S. electric industry.

Needless to say, municipal utilities have been stressed and strained to just keep abreast of these changes and avoid being swamped. Having an established joint action agency has been most beneficial in provision of a formal framework for sharing the financial, personnel, legal and consulting resources necessary to monitor, understand, respond and represent our utilities and their customers' best interests in all the various matters that affect them and their businesses. Public utilities' compass always points toward the **best public policy** and we trust that will carry us through to an even brighter future.

We are thankful for the dedicated public servants who worked long and hard to put in place the enabling legislation (PA 448) that allowed the establishment of this municipal electric joint action agency. We are also grateful for the friendship and business partnerships we have forged with the Detroit Edison Company, Consumers Energy Company and others. We are pleased Wall Street has found our assets and their management to provide attractive and sound investments. MPPA's asset investments, power pool and other relevant activities have provided a firm foundation from which to weather the tidal wave of change.

We hope you enjoy and profit from reading our story and look forward to your participation in the next, yet to be written, chapter!

David Walters
Chairman

Gary L. Zimmerman
General Manager

June 17, 2004

Board of Commissioners – MPPA



L-R seated: Vice-Chairman Loren Howard, Holland Board of Public Works; Secretary-Treasurer William Cook, Lansing Board of Water & Light; Chairman David Walters, Zeeland Board of Public Works; Edward Whitley, City of Charlevoix; Gary Zimmerman, General Manager, MPPA

L-R standing: Annette Allen, Grand Haven Board of Light & Power; Reid Charles II, City of Hart; Thomas Richards, Lowell Light & Power; Andy Johnston, Village of Chelsea; Phil Newton, Bay City Electric Light & Power; Richard Smith, Traverse City Light & Power; Fred Geuder, City of Harbor Springs; Michael Robbins, City of Petoskey. Not pictured: Jon Hyland, Portland Light & Power Board

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~ Written by Bill Beck ~



Chapter 1 – Public Power in Michigan

Public power has deep roots in the Wolverine State.

Shortly after the city of Wabash, Indiana voted for citizen ownership of a small electric dynamo to power arc lights on the courthouse square in the spring of 1880, cities and towns across Michigan began investigating the possibility of establishing municipally-owned electric utilities.¹

Public power has since become a major force in the economic and social well-being of Michigan. Thanks to the Michigan Public Power Agency (MPPA), low-cost, reliable electricity is provided to the residents of 13 Michigan communities. The Agency's 25-year history has been marked by financial success that has resulted in millions of dollars of cost savings that have been passed along to the residents of member communities. But MPPA's creation in 1978 was also an affirmation of the viability of the nearly century-old tradition of publicly-owned electric power in the Wolverine State.

Electricity in the 1880s was a breakthrough technology with enormous potential, but one that had yet to prove itself either profitable or widely adaptable. Like personal computers and the Internet in the late 20th century, electricity was a technology that had to experience a decades-long period of trial and error before it was universally accepted in American homes, offices and factories.

Thomas Edison developed a practical incandescent electric light bulb in 1879, and he unveiled his first practical generating station at Pearl Street in New York City four years later.² Although he has gained the reputation of being the inventor of electric light, Edison's experiments were consistently duplicated by others across America during the 1880s and early 1890s. Charles Brush of Cleveland designed the arc lights installed on the roof of the courthouse in the Wabash town square in 1880.³ Lynn, Massachusetts inventor Elihu Thomson was developing incandescent and arc lighting systems that at the time were considered superior to Edison's.⁴

Early electric entrepreneurs such as Edison, Brush and Thomson planned to make money from electric power in two ways. They would provide the equipment needed to generate and distribute electric power directly to cities and towns, and they would license franchisees to sell their equipment in specific regions of the country. Franchisees essentially were middlemen, taking a commission on the sale and operation of electric light plants in their region and in turn paying a fee to the electrical manufacturers.

Like any 19th century business activity, the sale of electrical equipment and franchises was frequently chaotic and rife with graft. Consequently, citizens in communities across America began to investigate the feasibility of municipal ownership of electric light plants.

As a political concept, public power had emerged from the Progressive Movement in late 19th century America. Progressives believed that electric and water utility services were as vital to the health and well-being of American communities as the maintenance of streets, police and fire protection, or the construction of sewage treatment facilities.

Founding Dates for MPPA Members

Michigan Public Power Agency's membership has a rich tradition of public power dating to the 19th century. Eight of the Agency's 13 members were founded during the 1890s, a time when the Progressive Movement was particularly active in the Wolverine State. The Lansing Board of Water & Light is the Agency's oldest member. The Zeeland Board of Public Works, founded during the depths of the Great Depression, is the Agency's youngest member.

- Bay City Electric Light & Power • 1905
- City of Charlevoix • 1900
- Chelsea Light and Power • 1898
- Grand Haven Board of Light & Power • 1896
- City of Harbor Springs • 1898
- Hart Hydro-Electric • 1896
- Holland Board of Public Works • 1893
- Lansing Board of Water & Light • 1892
- Lowell Light & Power • 1896
- City of Petoskey • 1898
- City of Portland • 1896
- Traverse City Light & Power • 1912
- Zeeland Board of Public Works • 1935¹

Endnote

1. "1998 Annual Directory & Statistical Report," *Public Power*, January-February 1998, pp. 97-99.

A growing number of citizens agreed with the Progressives. In 1889, Hazen Pingree, the Progressive mayor of Detroit, issued a clarion call for public power in the state. “Good municipal government is an impracticality,” Pingree said, “while valuable franchises are to be had and can be obtained by corrupt use of money.”⁵

Public Power Pioneers



By the time Pingree challenged the private capital interests that were attempting to control electric power production in Detroit, public power advocates across the state were beginning to exert their influence. Marquette, the iron mining town on Michigan’s Upper Peninsula, was in 1889 the first community in the state to form a municipal utility. At the time, fewer than 70 municipal utilities existed in the United States.⁶

But public power was building momentum, both in Michigan and the nation. During the next 10 years, nearly 25 other Michigan communities would opt for citizen ownership of the local electric utility.⁷ By 1900, there were more than 800 municipal utilities nationwide, with half located in the Great Lakes states and the Midwest.⁸

Most Michigan municipalities simply scheduled an election to authorize bonds to purchase the equipment and franchises of an existing privately-owned utility serving the city. The state capital city of Lansing held an election in 1892 that authorized city hall to buy an existing private arc light firm and create the Lansing Board of Water & Light.⁹ In 1893, the citizens of Hillsdale approved the city council’s purchase of a Corliss engine from the F.W. Stock & Sons Feed Mill. The engine had been used to provide electricity to the mill and several surrounding businesses. The newly-formed Hillsdale municipal utility began erecting street lights in the downtown business district.¹⁰

That same year of 1893, the city of Holland, tiring of promises from potential electric light franchisees, decided to light the streets of the Lake Michigan community. Holland’s Board of Public Works had operated a successful waterworks for 10 years, and the city council was confident that it could run an electric light plant as well or better than a privately-owned utility could. In September 1893, the Board selected a site on Fifth Street near Lake Macatawa and awarded a \$12,000 contract to a Detroit engineering firm to build an electric light plant.¹¹

In 1894, a Holland newspaper proclaimed that “our electric streetlighting is a success.”¹² So successful, in fact, was the electric light plant that the Board of Public Works soon dedicated a generator to produce current for incandescent lighting, which was far more suitable for homes and stores than the bright, hot arc lights used to illuminate the streets of the community. Within months, 300 customers had signed up for the incandescent service. By 1895, Holland had doubled the capacity of its electric light plant. Holland in 1899 became one of the first Michigan municipal utilities to offer customers daytime power and light service.

In the days before the turn of the 20th century, most Michigan municipal electric systems operated on what was called a “moonlight schedule.” On bright, moonlit nights, the arc street lights in the vast majority of public power communities didn’t operate. The community’s electric light plant typically shut down at 10 p.m. Just before 10 p.m., the operator at the local light plant would flick the power off and on, signaling to residential lighting customers that the plant would close down for the night within 10 minutes.

Not all Michigan municipal utilities enjoyed the relatively peaceful births of Lansing, Hillsdale and Holland. Detroit's Public Light Commission was the focus of a pitched, three-year battle between Progressives and private power companies that wasn't settled until the Michigan General Assembly passed several pieces of legislation to allow residents of Detroit to own and operate an electric street lighting system. Soon after his election as Mayor of Detroit in 1890, Hazen Pingree initiated a study of street lighting costs in the city. A city commission investigated lighting costs in 92 other municipally-owned utilities nationwide and discovered that the community was paying far more than it should to light Detroit streets with gas-jet lamps.¹³

For the next two years, Pingree fought the privately-owned gas and electric companies that held the franchises to light Detroit's 1,760 street lamps. One of the companies, Detroit Electric Light & Power Company, was charging the city \$134 annually to light each lamp.¹⁴ Pingree promised voters that the annual charge for lamps could be cut in half if the city took over the franchise.

Unable to win concessions from the private power companies, Pingree turned to the state's lawmakers in Lansing. In March 1893, the Michigan General Assembly passed the Public Lighting Act approving the construction of a municipally-owned electric light plant. The governor quickly signed the legislation, and Pingree immediately appointed a six-member Public Lighting Commission.¹⁵

In 1894, the Detroit Public Lighting Commission began construction of the city's municipally-owned Atwater station. The coal-fired Atwater plant boasted 18 Western Electric dynamos for direct current arc street lighting, and three Westinghouse dynamos for alternating current commercial arc lighting purposes. The new plant went into operation on April 1, 1895. By October, it was providing electric power to nearly 1,500 arc lights citywide.¹⁶

Pingree made good on his promise to reduce lighting costs in the city. By 1898, costs per lamp per year had dropped to \$87. Four years later, the costs per lamp per year were \$63, an even greater savings than Pingree had predicted during the early 1890s battle with the private power companies.¹⁷

Into the 20th Century



The municipal power movement in Michigan gained momentum from 1900 to 1920 as Michiganders discovered the cost and reliability benefits of public power. But technological advances during the era created conditions that would dramatically reduce the number of municipal utilities in Michigan and nationwide during the 1920s.

Transmission voltages increased rapidly during the period from 1900 to 1920. Engineers had discovered through trial and error that higher voltages reduced line loss. The higher voltages also allowed more power to be transmitted across the same wire. In a sense, power transmission followed the same principal of water flowing through a pipe. More water can be forced through a pipe at high pressure than at low pressure. Engineers realized that they could send more electricity across a transmission line further distances at higher voltages than lower voltages.¹⁸

Technological advancements in coal-fired steam generation allowed investor-owned utilities to build much larger power plants farther from load centers. The rapid growth of kilowatt-hour demand during the 1920s spelled the demise of many of the small-town electric utilities that had

Chapter 1 Endnotes

1. Peter Tocco, "The Night They Turned the Lights On in Wabash," *Indiana Magazine of History*, December 1999, pp.350-363
2. "Edison's Light," *The New York Herald*, Sunday, December 21, 1879, p.5
3. Pat Cline, One Hundred Years of Public Power: Crawfordsville Electric Light & Power, 1890-1900, p.33; See Also, Shirley Wilcox, "A Brush With Fame," *Rural Electrification*, August 1995, p.36
4. Beck, PP&L: 75 Years of Powering the Future Allentown, Pennsylvania: Pennsylvania Power & Light Co., 1995, p.35
5. Scott Ridley, Profile of Power (Washington, D.C.: American Public Power Association, 1996), p.7
6. *Ibid.*, p.6
7. "1998 Annual Directory & Statistical Report," *Public Power*, January-February 1998, pp.97-99
8. *Public Power in America: A History* (Washington, D.C.: American Public Power Association, n.d.), p.5
9. *Ibid.*, p.3
10. "The Centenarians," *Public Power*, September-October 1993, p.40
11. *Ibid.*, p.41
12. *Ibid.*, p.41
13. *Ibid.*, p.38
14. Ridley, Profile of Power, p.7
15. "The Centenarians," *Public Power*, September-October 1993, p.38
16. *Ibid.*, p.38
17. Ridley, Profile of Power, p.7
18. Transmission Voltage Grows, <http://www.americanhistory.si.edu/csr/powering/hirsh2/frmain.htm>

been the backbone of the industry's pioneer period. With their antiquated steam plants and mediocre distribution systems, small-town utilities were not able to compete with the holding companies which had been established early in the 20th century to own the stock of dozens of large electric utilities, nor could they keep up with surging local kilowatt-hour demand in their communities.

Holding companies built modern, efficient generating stations in central locations and then ran transmission lines to neighboring communities. Most of the transmission lines that served the small-town customers of the 1920s were rated at 22,000, 33,000, 44,000 or 66,000 volts. Utilities also routinely erected double-circuit 138,000-volt transmission lines to tie together generating plants on their systems.¹⁹

Development of the ceramic suspension insulator and improvements in transmission line lightning protection after 1925 made long-distance, high-voltage transmission more reliable as the decade progressed. Increased reliability meant the holding companies could be more aggressive in signing up small-town customers located miles from a central station generating plant. Holding companies were the only firms with the financial ability to erect bulk power transmission lines hundreds of miles across the countryside.

With centralization and consolidation of the industry, utility holding companies grew rapidly. Between 1918 and 1926, nearly 3,750 U.S. utilities merged or combined into holding companies.²⁰ The utilities reflected trends in American business at the time. The wave of mergers and consolidations that characterized the U.S. business community in the 1990s had its beginnings in the merger mania of the 1920s. Big business is an American phenomenon rooted strongly in the past.

For small-town America, access to high-voltage transmission lines in the 1920s ushered in a new era of prosperity. Most people called transmission lines "the high line." Transmission lines served as an umbilical cord to progress.

Bucking the Trend



Still, a number of Michigan communities bucked the trend of utility consolidation during the first quarter-century of the 1900s. In 1908, a group of local citizens organized the Queen City Light & Power Company six miles south of Traverse City on the Boardman River. They built the Keystone Dam across the river and furnished hydroelectric power to Traverse City.²¹

The private company charged high rates for unsatisfactory service. In 1912, the city council asked voters to approve a \$125,000 bond issue to purchase the hydroelectric plant. The measure overwhelmingly passed. The city-run plant was so successful that Traverse City Light & Power built a second hydroelectric facility – the Brown Bridge dam and plant – in 1919. Kilowatt-hour demand skyrocketed during the 1920s. In 1925, the municipal utility announced plans to install its first coal-fired steam turbine at the then new Bay Street plant.²²

Nearby Petoskey also had been served by hydroelectric power. In 1898, the city had purchased a dam and a generator near the mouth of the Bear River from a privately-owned utility. The small waterwheel served the community's electric power needs until 1917, when the Petoskey Municipal Light Utility installed two new 75-kilowatt generators and demolished the old plant.

Growth of electric power demand in the wake of World War I created a power supply crisis for the local municipal utility. In 1926, Petoskey Municipal Light Company negotiated the purchase of a block of power from the Petoskey Cement Company, an arrangement that lasted for most of the next 20 years.²³ To supplement the purchased wholesale electric power, the municipal utility in 1933 built the Mitchell Dam on the Bear River just south of Petoskey.

The city of Hart was another municipality that traced its heritage to Michigan's abundant hydroelectric resources. When the Michigan Public Service Company's franchise to serve the city expired in 1923, the city council engaged an engineering firm to survey the hydroelectric potential of the Pentwater River. The firm reported that a hydroelectric project generating 300 kilowatts could be completed for just over \$125,000. With costs of upgrading the community's electric distribution system estimated at an additional \$120,000, the council took the issue to voters in the summer of 1924.²⁴

The landslide yes vote authorized the city council to issue \$180,000 in bonds for construction of the new hydroelectric plant, which went into commercial operation in November 1927. Even before the hydroelectric plant began generating electricity, the city council started planning to supplement hydroelectric power with diesel-engine driven turbines. In 1931, Hart Hydroelectric spent \$40,000 to install a 600-horsepower Fairbanks Morse diesel engine. In 1940, an additional 805-horsepower diesel unit was ordered for the plant, and a third unit rated at 1,400 horsepower was installed in 1948.²⁵

As diesel technology improved during the 1920s and 1930s, a number of Michigan municipal utilities switched from coal-fired to diesel-fired generators. The Hillsdale Municipal Electric Utility, which had placed a 1,500-kilowatt coal-fired turbine generator in service in 1927, built a new plant and added two 1,500-kilowatt diesel units in 1939. A third, 2,500-kilowatt diesel generator was installed in 1947.²⁶ The Sebewaing Electric System, which was founded in 1911, changed from coal to diesel generation in 1928. In 1933, 1938 and 1947, the municipal utility ordered additional diesel units as kilowatt-hour consumption in the community more than doubled.²⁷

A handful of Michigan municipal utilities relied on wholesale purchase power to meet their electricity needs. Shortly after the turn of the 20th century, Chelsea Light and Power closed its small, coal-fired generating plant and negotiated a wholesale power contract with Consumers Power Company of Jackson. Chelsea bought substantially all of its electric power needs from Consumers Power for the next 100 years.²⁸

By the time World War II ended in 1945, Michigan's municipal electric utility sector was firmly established as a vital component of the state's energy infrastructure. The next 25 years would be a golden era for Michigan public power utilities. Demand for electric power skyrocketed and generating costs dipped as the industry benefited from economies of scale. Michigan municipal utilities shared in the industry's growth by supplementing internal generation with wholesale power purchases. A steady rise in wholesale electricity prices after 1970, however, convinced the state's municipal utilities to investigate banding together to pool generation resources.

19. William W. Corbitt, And There Was Light: The Story of American Electric Power – Its First 85 Years – 1906-1991 (Columbus, Ohio: American Electric Power Service Corporation, 1992), p.204

20. Carol Pine, NSP: Northern States People: The Past 70 Years (Minneapolis: North Central Publishing, 1979), p.25

21. F.M. Hageman, "The Traverse City Light and Power Department," *Michigan Municipal Utility Association Newsletter* (hereinafter cited as *MMUA Newsletter*), October 31, 1955, p.2

22. *Ibid.*, p.2

23. Ernest L. Neumann, "A Brief History of the Petoskey Municipal Light Utility," *MMUA Newsletter*, September 28, 1955, p.2

24. Bernard Passage, "A Brief History of the Hart Hydro," *MMUA Newsletter*, September 10, 1955, p.7

25. *Ibid.*, p.7

26. James Taylor, "The Hillsdale Municipal Electric Utility," *MMUA Newsletter*, August 31, 1955, pp.4-5

27. Harold Wagner, "A Brief History of Sebewaing Electric System," *MMUA Newsletter*, November 14, 1955, p.4

28. Beck, "100 Years of Service – Chelsea Light and Power," 1998, n.p.