The Value of your Municipal Utility

2014 IAMU Leadership Conference
Thursday, February 6, 2014
Bob Haug
1. Where we’ve been – a brief history of the U.S. electricity business and how municipal utilities and IAMU fit into the story

2. Where we’re going – the value of municipal utilities in a transforming industry
In the beginning...

• Electric power has a long history
  – In 1746 electricity was transmitted over a two-mile long iron wire in England
  – By 1840, electromagnets, telegraph, and crude electric motors had been developed
  – The 1850s saw lighting demonstrations in London, Paris, and throughout Europe - the lighthouse at Blackwell, England was electrified in 1857
In the beginning...

• Electric power history
  In 1877 Cleveland engineer Charles Brush invented a new dynamo generator and perfected the arc light. Lighting utilities popped up across the country.
The accepted beginning

• **Question**: So why is the beginning of the industry pegged to September 1882, when Thomas Edison’s Pearl Street Station lit 50 Wall Street offices?

• **Answer**: Edison was backed by J.P. Morgan and a brilliant administrator, Samuel Insull, who rewrote history and led a long war against public ownership.

• **Iowa Connection**: 16 days after Pearl Street Station went into business, Fairfield, Iowa, began operating one of the nation’s first municipal electric utilities.
1880 - 1900

- This period saw huge numbers of electric utilities formed and cut-throat competition over city franchises. This led to corruption and then to reformers who called for establishment of municipal utilities.

- Thus began the “Power Struggle – the Hundred-Year War Over Electricity” Richard Rudolf & Scott Ridley, 1986, Harper & Row
Iowa Municipal Electric Utilities
Founded in the 1880s and 1890s

- Tipton 1880s?
- Bloomfield 1889
- Winterset 1889
- Atlantic 1890
- Greenfield 1890
- Indianola 1890
- Webster City 1890
- Harlan 1891
- Stuart 1891
- Independence 1893

- Wilton 1893
- Hawarden 1894
- Onawa 1894
- Alta 1895
- Vinton 1895
- Ames 1896
- Rock Rapids 1896
- Mt. Pleasant 1897
- Algona 1898
- State Center 1899
1900 – 1920

• Regulation and the golden monopoly, rise of holding companies and political corruption
• The number of private and public utilities continued to grow – competition was often street to street
• Consolidation was on the horizon, as AC technology advanced, allowing central stations to provide power over greater distances (200 miles in the San Francisco area by 1902)
1900 – 1920

• Political corruption and high rates led to more public systems. In the first decade of the new century, public power systems were increasing at twice the rate of private systems

• By 1917, there were 218 electric systems in Iowa – of these, 44 were municipal utilities

• Samuel Insull, Pres. of Chicago Edison, proposed to stop municipal utilities by creating legal monopolies regulated by state commissions – the first of these came in 1907 in Wis. and N.Y. Other states followed.
In addition to being Pres. of Chicago Edison, Insull was president of the National Electric Lighting Association, which was formed in 1885. He called for state regulated monopolies as early as 1898 at NELA’s convention in Alabama. What Insull believed is that private utilities could control state regulatory bodies, either through corruption or by overwhelming them with their money and power. Private utilities could spend unlimited amounts on rate cases and hire the experts. As one consulting economist explained, “engineers and accountants experienced in electric lighting. . . Are in the employ of private companies or expect to be.”

“Between 1907 and 1912, of 91 cases heard by the Wisconsin commission, the power companies were granted increases in 52 cases.” “When a company disagree with a decision, they could appeal to the courts, where the case might languish for years. There seems to be a revolving door between regulators and the regulated. Consider that, except for a few recent exceptions, most IUB members who left office during my 35 years working for municipal utilities, have gone to work for regulated utilities. Many staff experts have come from investor-owned utilities; that’s where you find them.
Iowa Municipal Electric Utilities
Founded from 1900 to 1920

- New London 1901
- Spencer 1901
- Denver 1902
- New Hampton 1903
- Ogden 1903
- Waverly 1904
- West Liberty 1904
- West Point 1904
- Panora 1906
- Hartley 1909
- Neola 1910
- Paullina 1910
- Pocahontas 1912
- Cedar Falls 1913
- Denison 1914
- Farnhamville 1914
- Fontanelle 1914
- Lake View 1914
- Sibley 1914
- West Bend 1914
- Danville 1915
- Larchwood 1915
- Manilla 1915
- Mapleton 1916
- Long Grove 1919
- Maquoketa 1919
- Traer 1919
1920 - 1940

• 1920 – 1928 monopoly profits, stock-watering, the crash, and political corruption

• The first wave of consolidation took place as corporations sought monopoly profits. By the mid-1920s, 16 holding companies controlled 85% of the nation's electricity. By 1932 just 3 holding companies controlled 45% and far fewer new public power systems were being started.
1920 - 1940

• These were heady times for what came to be known as the Power Trust. Their wealth and political influence grew exponentially.

• By 1937, Iowa had 138 municipal electric utilities – 18 fewer than in 1927.

• Quiz time
If there is a theme running through much of the history of the U.S. power industry is it political corruption. In one scandal, Insull freely admitted that he had donated $125,000 to the Senate campaign of Frank Smith, former chairman of the Illinois Commerce Commission. In the same election, the power trust, as the leaders of the private utilities came to be known – was financing a Senate Republican primary campaign in Pennsylvania against Gifford Pinchot, and public power supporter. Smith from Illinois and William Vare, who won in the general election in Pennsylvania were both denied their seats after Senate investigations into election fraud.

In his autobiography, Pinchot said: “The power trust is the greatest monopolistic corporation that has been organized for private greed.” It has bought and sold legislatures. It has interested itself in the election of public officials, from school directors to the President of the United States.” “Its representatives have been carefully placed in seats of honor and trust. Its lobbyists have control of legislation in practically every state of the Union.” “It will continue to fight; and the people must be on guard, because it is resourceful, intelligent, and relentless.”
Quiz: What and where is this building?

Answer: The Chicago Civic Opera House, also known as Insull’s Throne. It was rumored that utility magnate Samuel Insull had the building designed in the shape of a throne upon which his wife could figuratively sit as the star of the opera. Having been rejected by the New York Metropolitan Opera, she could sit with her back to New York.
Quiz: What and where is this building?

Chicago Civic Opera House
“Insull’s Throne”

Samuel Insull
Iowa Municipal Electric Utilities
Founded 1920-1940

- Glidden 1921
- Muscatine 1922
- Orange City 1923
- Coggon 1928
- Lenox 1931
- Villisca 1931
- Gowrie 1934
- Corning 1935
- La Porte City 1935
- Lamoni 1935
- Milford 1935
- Cedar Falls GAS - 1928

- Rockford 1935
- Sumner 1935
- Coon Rapids 1937
- Manning 1937
- Primghar 1937
- Dayton 1938
- Hopkinton 1938
- Anita 1939
- Bancroft 1939
- Forest City 1939
- Montezuma 1939
1920 – 1940

• Stock watering schemes of the Insull & other holding companies contributed to the crash of 1928 and there would be consequences.

• The Power Trust made an unsuccessful attempt to defeat the nomination of FDR at the 1932 Chicago convention.
1920 – 1940

- Roosevelt with help from Republicans like Sen. Norris (NE) and Gov. Pinchot (PA) won passage of New Deal acts that would change the industry.
1920 – 1940

- New Deal legacy - **Public Utilities Holding Company Act**, Federal Power Act, also TVA and REA - usher in quieter, more reliable, yet profitable industry.

- 1932 – Delegates to Iowa League of Cities convention formed a utilities subdivision.
Reflections of the national battles between public and private power were evident in Iowa. One turning point was an October 1937 District Court decision to award the City of Corning $9,066.04 in its suit against the Iowa-Nebraska Power Company for a series of legal delays following voter approval of the light plant in 1934. The award represented the increase in the price of generators that occurred during the delays. The Iowa Supreme Court upheld the judgment in 1939.
1940 – 1960

• A period of steady growth followed the Roosevelt years and WWII. From 1947 to 1973 growth was steady at 8% per year.

• The 1940s also saw the extension of interstate gas pipelines across Iowa and new municipal gas utilities in the 1950s
• By the late 1940s, tension had begun to grow within the League of Iowa Municipalities between cities with municipal utilities and those often aligned with their IOU service providers.

• February 3, 1947, IAMU formed as independent organization within the League and retained its first lobbyist in 1955.
Iowa Municipal Utilities
Founded 1940 to 1960

ELECTRIC
- Grundy Center 1940
- Orient 1940
- McGregor 1941
- Osage 1941
- Woodbine 1941
- Durant 1942
- Graettinger 1942
- Sanborn 1947
- Lake Park 1948
- Laurens 1949

- Sioux Center 1949
- Keosauqua 1950
- Bellevue 1958

GAS
- Coon Rapids 1953
- Guthrie Center 1953
- Harlan 1954
- Sioux Center 1954
- Sanborn 1958
1960 – 1980

• This was an era of new vigor in the industry with subsidized nuclear energy, expansion, interconnection of generation, more and larger central power plants, and development of municipal joint action agencies.

• A 1969 IOU plan to get rid of municipal utilities was uncovered. Resulting investigations tuned down anti-muni rhetoric for a time.
1960 – 1980

• 1973 OPEC oil embargo
• 1977 DOE established
• Federal Power Commission becomes FERC
• 1978 Public Utilities Regulatory Policies Act (PURPA) ushers in competition for generation and demands for more deregulation
1960 – 1980

• Utilities within the League had long pressed for representation on the League board. Repeatedly rebuffed, IAMU separated from the League in 1952.

• In 1968, IAMU opens a 200 square foot office in the Insurance Exchange and hired former Waterloo mayor Pat Touche and wife Jean.

• Gene Kennedy was retained as IAMU lobbyist and, in 1978, Bart Rule replaced Pat Touche.
1960 – 1980

• The water section in IAMU was formally recognized in 1978
• I joined the staff in 1979 to work on regulatory issues and energy efficiency (and stayed for 18 months)
• 1979 also saw the beginning of the Safety Group Insurance Program.
From before it organized as a separate entity (IAMU), the utilities within the League pressed representation on the League board. Repeatedly rebuffed, IAMU separated from the League in 1952. Gene Kennedy was retained as IAMU’s lobbyist and Bart Rule replaced Pat Touche, when he and Jean retired.
Iowa Municipal Utilities
Founded 1960 to 1980

**ELECTRIC**
- Alton 1968
- Aurelia 1973

**GAS**
- Lamoni 1960
- Cascade 1961
- Emmetsburg 1961
- Graettinger 1961
- Manning 1961
- West Bend 1961
- Manilla 1962
- Osage 1962
- Woodbine 1962
- Morning Sun 1963
- Tipton 1964
- Wayland 1965
- Wellman 1965
- Brighton 1966
- Waukee 1966
- Lenox 1967
- Montezuma 1967
- Brooklyn 1968
- Gilmore City 1968
- Rolfe 1968
- Lineville 1969
- Winfield 1969
- Lorimor 1971
- Sac City 1976

**Also**
- NMDG 1969
- RPGI 1975
1980 – 2000

- Consolidation and deregulation: Iowa Utility Mergers in the 1990s

Now part of MidAmerican Energy:
1. Iowa Power
2. Iowa Public Service
3. Iowa Illinois Gas & Electric

Now part of IPL (Alliant West)
4. Iowa Electric Light & Power
5. Union Electric (Iowa territory)
6. Iowa Southern
7. Interstate Power
1980 – 2000

- 1995-99 Iowa considers retail competition
  - IUB inquiry on deregulation NOI-95-1
  - Summer of 1998 spent in endless restructuring meetings
  - Legislation drafted in 1999. IAMU finds workable position for municipals, but calls it a high-risk proposition for consumers
  - Warning signs from California slow down process ($ billions transferred from distribution companies to their holding company affiliates)
1980 – 2000

- 1999 Iowa Utility Replacement Tax
- 1999 Legislation passed confirming municipal authority to form telecommunication utilities
1980 – 2000

- Municipal utilities began an impressive record in energy efficiency
  - In 1980 IAMU received grant to support an infrared camera project – a full time person with van travelled the state for two years
  - The IAMU Energy Race sent 46,650 data collection sheets to muni customers for energy audits
  - IAMU members received 6 APPA Energy Innovator awards in the award’s first 7 years
  - In 1988 IAMU received grants for commercial lighting and Options 2000
1980 – 2000

• For IAMU – new members and services
  – Group health insurance in 1983
  – In 1986 I returned as Executive Director with 3 on staff and soon after our first computers
  – Welding standards developed in 1988
  – Safety Circuit Rider in 1989 (Larry Milroy)
  – Drug testing program 1990
  – Lineman Apprenticeship program 1990
  – Iowa Energizer started in 1991
  – OSHA Compliance Services 1992
In 1997, IAMU purchased 25 acres for an office and training field, the office was completed in December 1999.
1980 – 2000

- 1997, IAMU conducts study resulting in DOE funding for the Iowa Distributed Wind Generation Project, jointly owned by 7 IAMU members and in operation since 1998.
Iowa Municipal Utilities
Founded 1980 to 2000

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2000 – Present

• 2001 Enron scandal revealed
• 2001 TransLink RTO
• 2003 MISO
• 2003 Northeast Blackout
• 2005 Energy Policy Act
• 2007 IPL transmission sale to ITC
• 2009 ARRA
• 2012 RICE rules implemented
Enron’s stock traded at $90.75 per share in mid-2000. The stock was worth less than a dollar a share in November 2001. California ratepayers were hit hard by the deregulation fiasco. IOU’s split off and protected their generation and transmission assets. To which their competitive distribution affiliates transferred $21 billion between 1998 and mid-2000.

[“California Utilities made $21 Billion in Revenue from Deregulation,” Chris Knap and Mark Katches, The Orange County Register, January 27, 2001.]
2000 – Present

Some municipal utility highlights:

• 2001 Joint finance legislation passed
• 2001 MMTG established
• 2001 IPPA established
• 2001-05 Iowa City municipalization
• 2003 Iowa Stored Energy Project
• 2004-08 Joint municipalization attempt
2000 – Present

- 2005 MEC Transmission Investment rights
- 2005 Opportunity Iowa (29 muni BB elections – 17 pass)
- 2004 and 2006 Biodiesel testing
- 2006 IAMWind
- 2007 Iowa Energy Project
- 2009-10 Whole Town Audit
2000 – Present

- 2010-13 Smart Grid Investment Grant
- 2011-12 EECBG Community Energy Plans
- 2012 Street lighting handbook and RFP
- 2012 E-PAYS $1.2 million loan program
- 2013 Traer community solar project
- 2013 IAMU solar arrays
- 2014 Sun-Shot Grant
- 2014 Energy Independent Community
Iowa Municipal Utilities
Founded 2000 to Present

**ELECTRIC**
- (none)

**GAS**
- Orange City 2002
- Alton 2009
- Mapleton 2009

**BROADBAND**
- Alta 2000
- Hartley 2000
- Reinbeck 2000
- Pocahontas 2001
- Algona 2002
Municipal Value Going Forward

• Substituting competition for regulation has not served us all so well – the struggle to make reality fit economic theory has been difficult, but we are managing.

• The exciting thing is what lies ahead – transformative technologies (EEI calls them “disruptive technologies”) that fit the municipal model like a glove. Let’s take a look at some of them:
Energy Efficiency

• In the latest energy efficiency filing with the IUB, energy efficiency costs the typical municipal electric utility less than 2 cents per kWh. Compare that with any alternative.

Presentation notes: Typically, 8 to 20% of electric utility revenue pays for all distribution costs, including poles, lines, transformers, meters, vehicles, metering, and the personnel to maintain them and send out bills. Unless you own or share generation or transmission, all the rest goes to owners of gas wells, pipelines, coal mines, railroads, transmission, power plants, and investment banks. Costs with a decidedly upward trajectory.
Distributed generation

- Solar
- Wind
- Small hydro
- Combined heat/power
- Micro turbines
- Anaerobic digesters
Most of these technologies are scaleable. They fit nicely behind the transmission grid. By the way, the wind turbine shown here is a 100 kW turbine installed one week ago in Winterset. (Installation completed January 30, 2014). Small turbines are right-sized for many municipal utilities.)
Storage

- Ice
- Heat
- Batteries
- Pumped hydro
- Geothermal heating and cooling
- Fly wheels
- Compressed air
- Micro storage technologies
Yesterday morning 2-5-14 on NPR:
Uni Energy Technologies: The Uni.System™ delivers 125kW power; 400kWh energy per 20’ container
Engineered & built from the ground up for MW-class applications
Designed for rapid deployment and dispatch flexibility
Uses a single, cost-effective, adaptable product platform
Produced with mature core components
Applies UET's breakthrough electrochemistry, originating from Pacific Northwest National Laboratory, with support from US DOE, Office of Electricity
Standard string configuration of four 20’ battery containers and one 20’ inverter & transformer container, providing 500kW power; 1.6MWh energy
Building a Smarter Grid

• “The electric grid must be transformed from a centralized, producer-controlled network to a decentralized, user-interactive one.”

• From: The Impact of the Smart Grid on Utilities, Customers, and National Security, 1st Edition, ResearchandMarket.com
Smart grid technologies

- Advanced metering
  - TOU rates
  - Automated Demand Response
  - Two-way communication for data collection and analysis
- Dynamic voltage control
- Micro grid strategies
- Customer education, information, and tools to change electricity use
- Integration of customer generation
Advanced appliances

- Indoor and outdoor lighting
- Smart appliances
- Advanced motors and pumps

- These technologies make sense for municipal utilities. Embrace them and adopt those that make sense for your community.
• QUESTIONS?

• Thanks for giving me this opportunity to highlight some of our history and present my optimistic view of what lies ahead for Iowa’s municipal utilities.

• Thanks especially for allowing me to lead this great organization for 27 years.

THE END