# Decorah Municipalization Feasibility Analysis

Presented by:
Ann Bulkley
February 5, 2018

CONCENTRIC
ENERGY ADVISORS

# Benefits of Alliant Energy Service in the Future

- Customer costs will be lower if Alliant Energy continues to provide service
- Customer reliability will be better if Alliant Energy continues to provide service
- Customers will be safer if Alliant Energy continues to provide service
- Customers will benefit from our successful sustainability efforts and an increasing percentage of renewable energy if Alliant Energy continues to provide service
- Customers will not be subject to the many risks and uncertainty associated with a start-up utility if Alliant Energy continues to provide service

**Lower cost, better reliability, a safer system, successful and aggressive sustainability initiatives, and less risk**

**We believe that is what our customers want and that is what we intend to continue to deliver to our Decorah customers**

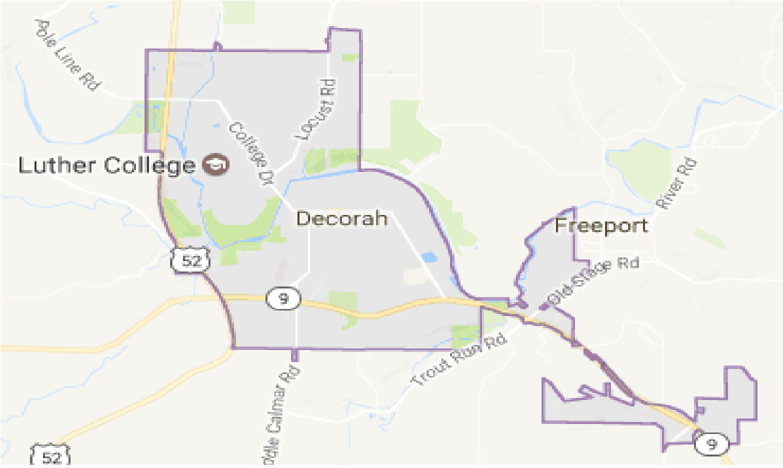
# What you will hear tonight:

- **Acquisition:** Decorah Power estimated cost to acquire the system is only ~25% of Concentric's estimated acquisition cost, based on historical IUB decisions
- **Sales:** Decorah Power's estimated energy sales are about 50% higher than actual energy sales
- **Rates:** Decorah Power has overstated Alliant Energy's Decorah average retail electric rate
- **Boundaries:** A plan to municipalize outside city boundaries is not consistent with Iowa Utilities Board rulings in 6 prior cases
- **Response:** Outsourcing of system operations will result in delayed response times and a less reliable system
- **Renewables:** Decorah Power's proposed 30% renewable energy mix in year one of operation is less than Alliant Energy's plan for 40% of renewable energy by 2021
- **Start date:** A proposed 2018 start of operation is not realistic, past cases took up to four years

**The proposed Decorah Municipal Electric Utility will result in higher costs, a less reliable system and less renewable energy than continued service by Alliant Energy**

# Introduction

- Alliant Energy engaged Concentric Energy Advisors (Concentric) to conduct a feasibility study of a proposed Decorah Electric Municipal and compare results to those presented by Decorah Power.
- Concentric used the same methodologies that have been used and approved in prior electric municipalization cases that came before the Iowa Utilities Board (IUB) in 1998 and 2006.
  - Aurelia, the last new electric municipal, was created in 1974
  - 6 communities have unsuccessfully attempted to create electric municipal utilities in their communities since 1974
  - Sheldon 1998; Everly, Kalona, Rolfe, Terril, Wellman 2006
  - Concentric developed a feasibility study that provides service on an apples-to-apples basis



# Presentation overview

Comparisons

- Acquisition costs
- Power supply costs
- Sales forecasts
- Customer rate forecasts
- Start-up costs
- Operation costs
- Total costs
- Financial Assumptions
- Future customer rates
- IUB process and precedent
    - Approval process
    - City borders rulings

# Acquisition of Physical Assets – Concentric

**The cost of the physical asset acquisition alone is ~$20 million**

| FERC Account | Description | Replacement Cost New (2021$) | Percent Condition (%)* | Replacement Cost New Less Depreciation |
|---|---|---|---|---|
| **Assets Acquired** | | | | |
| 362.1 | Substation | $5,519,064 | 57.16% | $ 3,154,670 |
| 364 | Poles, Towers, Fixtures | $9,743,537 | 55.29% | $ 5,387,202 |
| 365 | Overhead Conductor | $4,059,809 | 62.49% | $ 2,536,794 |
| 366 | Underground Conduit | $4,652,389 | 72.16% | $ 3,357,141 |
| 367 | Underground Conductor | $2,114,722 | 56.07% | $ 1,185,670 |
| 368.1 | Transformers- Overhead Line | $2,435,885 | 46.64% | $ 1,136,085 |
| 368.2 | Transformers- Padmount | $1,691,778 | 46.64% | $ 789,037 |
| 369.1 | All Service [illegible] | [illegible] | [illegible]7.18% | $ 1,627,977 |
| 370 | Meters [illegible] | [illegible] | [illegible]5.00% | $ 629,173 |
| | Streetlights [illegible] | [illegible] | [illegible]8.05% | $ 177,882 |
| *Subtotal* | | [illegible] | | *$ 19,981,630* |
| **Real Property Acquired** | | | | |
| Land and Land Rights | | $0 | N/A | $0 |
| **Total Property Acquired** | | **$34,797,362** | | **$ 19,981,630** |

* Concentric shows percent of value retained, whereas Decorah Power table shows proportion depreciated

# Acquisition of Physical Assets – Comparisons

**Decorah Power's estimated asset acquisition cost is ~25% of Concentric's estimated asset acquisition cost**

| Description | Concentric Replacement Cost New Less Depreciation | DP Replacement Cost New Less Depreciation | Difference |
|---|---|---|---|
| **Assets Acquired** | | | |
| Substation | $ 3,154,670 | $1,376,680 | $1,777,990 |
| Poles, Towers, Fixtures | $ 5,387,202 | $772,358 | $4,614,844 |
| Overhead Conductor | $ 2,536,794 | $176,358 | $2,360,436 |
| Underground Conduit | $ 3,357,141 | $520,420 | $2,836,721 |
| Underground Conductor | $ 1,185,670 | $234,152 | $951,518 |
| Transformers- Overhead Line | $ 1,136,085 | $255,040 | $881,045 |
| Transformers- Padmount | $ 789,037 | $324,381 | $464,656 |
| All Service | $ 1,627,977 | $219,688 | $1,408,289 |
| Meters | $ 629,173 | $1,121,198 | ($492,025) |
| Other | $ 177,882 | $37,500 | $140,382 |
| *Subtotal* | *$19,981,630* | $5,037,775 | $14,943,855 |
| **Real Property Acquired** | | | |
| Land and Land Rights | $0 | $50,000 | ($50,000) |
| **Total Property Acquired** | **$19,981,630** | **$5,087,775** | **$14,893,855** |

- **Decorah Power will need to take on more debt than the DP study assumes**
- **Decorah Power rates will have to go up to pay for this increased debt**

# Acquisition of Physical Assets - Methodology

**System Inventory**

- Determined miles of line, number of services, other facilities from Alliant Energy's GIS Mapping System
- Approximately 53 miles of distribution line within the City limits

**Reproduction Cost New**

- Developed cost of new construction on a like-for-like basis using Alliant Energy's design tool
- Contains cost of material and labor

**Depreciation**

- Concentric applied depreciation rates using Iowa Curves
- Iowa Curves are a statistical analysis of remaining life of assets

**Methodology**

- Determination of cost of physical assets used by Alliant Energy/Concentric is the same methodology used in the 2006 proceeding before the IUB
- IUB accepted this methodology with no adjustments and it was the basis for the determination of the cost to acquire the system

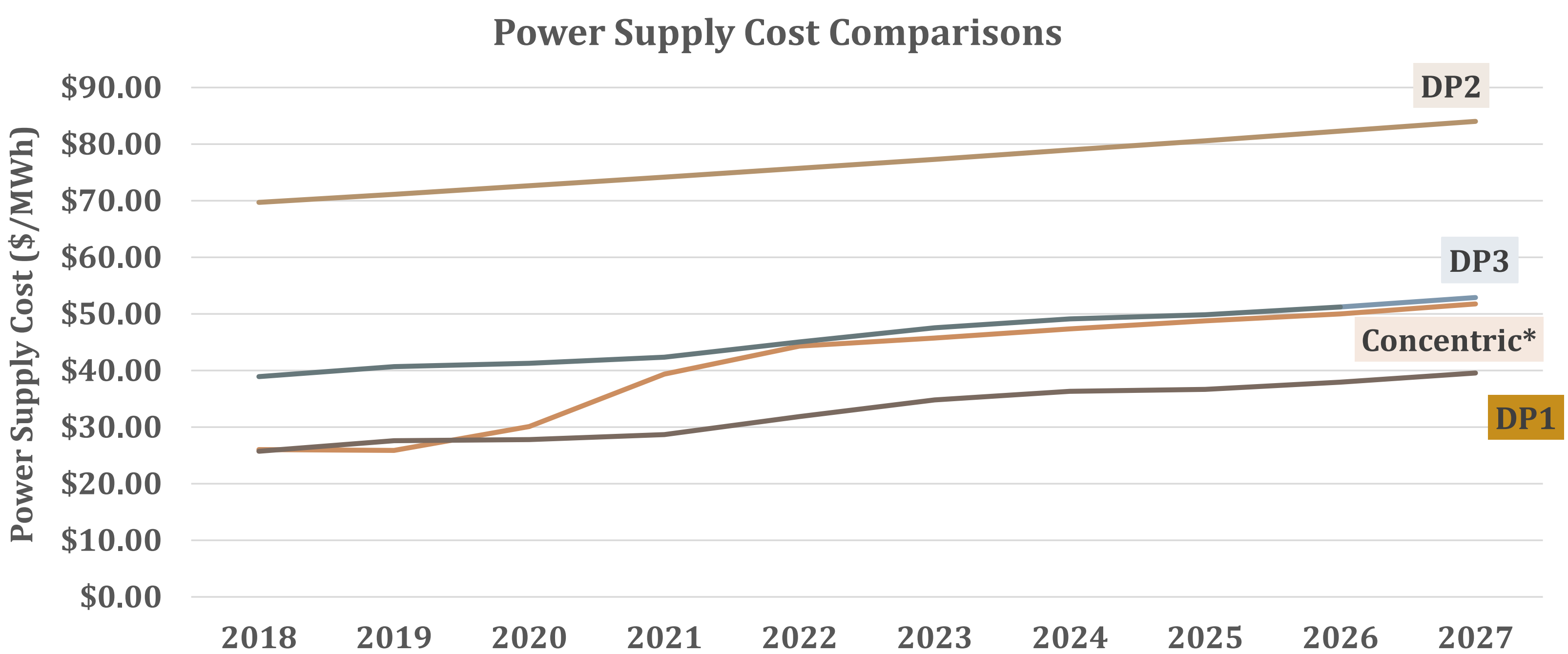
# Power Supply Scenarios ($/MWh) – Comparisons

**Decorah Power and Concentric have similar power supply estimates**

| Year | Concentric (Wood Mackenzie) | Market Prices Option 1 | JAA/G&T Prices Option 2 | Combined Prices Option 3 |
|---|---|---|---|---|
| 2018 | $26.03 | $25.74 | $ 69.70 | $ 38.93 |
| 2019 | $25.88 | $27.61 | $ 71.16 | $ 40.68 |
| 2020 | $30.08 | $27.81 | $ 72.66 | $ 41.27 |
| 2021 | $39.37 | $28.70 | $ 74.18 | $ 42.35 |
| 2022 | $44.31 | $31.89 | $ 75.74 | $ 45.05 |
| 2023 | $45.73 | $34.83 | $ 77.33 | $ 47.58 |
| 2024 | $47.35 | $36.34 | $ 78.96 | $ 49.13 |
| 2025 | $48.76 | $36.68 | $ 80.62 | $ 49.86 |
| 2026 | $50.01 | $37.93 | $ 82.31 | $ 51.25 |
| 2027 | $51.75 | $39.56 | $ 84.04 | $ 52.90 |

# Power Supply Scenarios ($/MWh) – Comparisons

**Power costs are similar**
**Concentric uses Wood Mackenzie data, which has been utilized in many IUB cases**




* All cases

**Decorah Power's 'Power Supply Option 3' cost is roughly 8 percent higher than Concentric's in 2018, though the two are similar by 2021**

# Sales Forecast – Comparisons

**Decorah Power estimated sales are 50% greater than Alliant Energy's actual sales in Decorah**

## Decorah Power Estimated Customers and Sales

| Customer Class | Number of Customers | kWh/Month/ Customer | Total Annual kWh Sales |
|---|---|---|---|
| Residential | 2,770 | 772 | 25,654,278 |
| Small Commercial | 561 | 4179 | 28,130,820 |
| Large Commercial | 102 | 49091 | 60,087,972 |
| Luther College | 1 | 1,017,100 | 12,205,200 |
| **TOTAL** | **3,434** | | **126,078,270** |

(1) Estimated customers / load based on information provided by Decorah Power and Alliant/IPL

## Alliant Energy 2016 Actual Customers and Sales within Decorah City Limits

| Customer Class | Number of Customers | kWh/Month/ Customer | Total Annual kWh Sales |
|---|---|---|---|
| Residential | 3,020 | 597 | 21,634,000 |
| Commercial | 632 | 4,108 | 31,157,000 |
| Industrial | 20 | 119,400 | 28,656,000 |
| Municipal Lighting | 1 | 17,083 | 205,000 |
| **TOTAL** | 3,673 | | **81,652,000** |

- **Costs/units sold = Customer energy cost per kWh**
- **Lower actual sales mean higher rates for a Decorah municipal**

# Projections for Alliant rates to serve Decorah – Comparisons

**Decorah Power's rate for Alliant Energy is ~3% too high**

**Decorah Power**

| Customer Class | Average Retail Rate by Class ($/kWh) | kWh Load (Annual) | % of Customers by Load for Decorah | 2017 Weighted / Average Rate - Alliant |
|---|---|---|---|---|
| Residential | $0.16583 | 25,654,278 | 20.3% | $0.0337 |
| Small Commercial | $0.15643 | 28,130,820 | 22.3% | $0.0349 |
| Large Commercial | $0.11264 | 60,087,972 | 47.7% | $0.0537 |
| Luther College | $0.08315 | 12,205,200 | 9.7% | $0.0081 |
| **TOTAL** | | **126,078,270** | | **$0.13037** |

**Concentric**

| Customer Class | Average Retail Rate by Class ($/kWh) | kWh Load (Annual) | % of Customers by Load for Decorah | 2017 Weighted / Average Rate - Alliant |
|---|---|---|---|---|
| Residential | $0.1638 | 21,634,000 | 26.50% | $ 0.0434 |
| Commercial | $0.1404 | 31,157,000 | 38.16% | $ 0.0536 |
| Industrial | $0.0833 | 28,656,000 | 35.10% | $ 0.0292 |
| Municipal Lighting | $0.2744 | 205,000 | 0.25% | $ 0.0007 |
| **TOTAL** | | **81,652,000** | | **$ 0.1269** |

- **Based on 2017 actual sales and revenues-adjusted to reflect full 12 months of proposed price increase**

# Comparison of Estimated Transaction and Startup Costs

**Decorah Power Feasibility Study excludes or underestimates expected startup costs**

| Startup Cost Category | Concentric Base Case (2021$) | Decorah Power (2018$) |
|---|---|---|
| **Transaction Costs** | | |
| Legal/Consulting Fees | $2,207,626 | $500,000 |
| Regulatory Fees | - | $250,000 |
| Other Fees | $____ | $150,000 |
| *Subtotal* | *$2,207,626* | *$1,000,000* |
| **Startup Costs** | | |
| 1 Year of A&G Labor Costs | - | $420,000 |
| Software/Billing Systems | - | $50,000 |
| Operations Startup Costs | $1,103,813 | - |
| Initial Capex (4 yrs.) | $3,663,512 | - |
| Initial Debt Service Reserve | $1,692,763 | - |
| Flotation Costs | $719,253 | |
| Inventory(Transformer, Conductor) | $466,012 | $23,355 |
| Power Supply Startup Costs | $1,103,813 | - |
| Working Capital | $1,327,014 | $500,000 |
| *Subtotal* | *$10,076,180* | *$993,355* |
| **Total Estimated Transaction and Startup Costs** | **$12,283,806** | **$1,993,355** |

- **Resulting startup cost estimate is ~16% of Concentric's base case assumption**
- **Total startup costs are approximately 6 times Decorah Power's total estimate**
- **Dollars shown are in the year of estimated MEU startup, assuming IUB approval**

# Local Operating Costs

**Decorah Power's average expected operating cost ($/kWh) will be 35% more than predicted by Decorah Power, which will impact customer rates**

| Cost Category | Concentric Base Case (2021$ 000) | Decorah Power (2021$ 000) |
|---|---|---|
| Operating Revenues | $11,357 | $12,046 |
| Projected Operating Expense | | |
| Replacement Energy and Capacity | $3,214 | |
| Power Supply Expense | - | $5,802 |
| Transmission Expense | $2,302 | $2,339 |
| Distribution Expense | - | $745 |
| Customer Expense | $223 | $298 |
| G&A Expense | $819 | $447 |
| O&M Fee | $1,247 | $112 |
| EE/DSM Programs | $403 | $602 |
| Energy Assistance Program | $3 | |
| Total Operating Expenses | $8,213 | $10,346 |
| General Fund Transfer (5% of Gross Revenue) | - | $602 |
| Replacement Property Taxes | $83 | - |
| Renewals and Replacements (15 Yr. Asset Life) | - | $339 |
| Total Debt Service<br>(includes debt financed renewals/replacements) | $3,582 | $549 |
| Total Expense | $11,879 | $12,046 |
| Margin/Operating Reserves | N/A | $210 |
| Average Retail Rate Analysis | | |
| Total Sales (kWh) | 81,652,000 | 126,078,269 |
| **Average MEU Rate ($/kWh)** | **$0.1455** | **$0.0908** |
| **Average Alliant Rate ($/kWh)** | **$0.1391** | **$0.1331** |
| **Updated Rate Analysis (corrected sales - kWh)** | | **81,652,000** |
| **Average MEU Rate ($/kWh)** | | **$0.1197** |
| **Average Alliant Rate ($/kWh)** | | **$0.1417** |

# Total Costs – Comparisons

| Assumption | Concentric Base Case (2021$ million) | Decorah Power (2018$ million) |
|---|---|---|
| **System Acquisition Costs** | | |
| Physical Assets | $20.0 | $5.6 |
| Incremental Pre-Muni Capex | $3.3 | - |
| Separation/Reintegration | $11.0 | - |
| Going Concern | $4.4 | - |
| **Total** | **$38.7** | **$5.6** |
| **Transaction Costs** | | |
| Legal/Consulting | $2.2 | *(included in Startup Costs below)* |
| Flotation | $0.7 | - |
| **Total** | **$2.9** | |
| **Startup Costs** | **$9.4** | **$2.0** |
| ***Total Acquisition, Transaction and Startup Costs*** | ***$51.0*** | ***$7.6*** |

- Expected acquisition date affects the Total Cost difference by $3.3 million, as Concentric has included the ongoing replacement capital until an assumed transaction date of 2021
- Excluding that difference, Total Costs differ by roughly $40 million:

  **$51.0mm - $3.3mm - $7.6mm = $40.1mm**

  (Total Costs) – (pre-muni capex) – (DP Total Costs) = Cost Differential

# Financial Assumptions

| Assumption | Concentric Base Case (2021$) | Decorah Power (2018$) |
|---|---|---|
| **Asset Financing** | | |
| Debt Issue | $23,300,591 | $5,562,000 |
| Taxable Rate | 6.00% | 5.00% |
| Taxable Bond Term | 30 years | 20 years |
| Annual Debt Payment | $1,692,763 | $446,000 |
| **Startup Cost Financing** | | |
| Debt Issue | $24,649,635 | $2,000,000 |
| Tax Exempt Rate | 4.50% | 3.50% |
| Tax-Exempt Bond Term | 30 years | 20 years |
| Annual Debt Payment | $1,559,503 | $160,000 |
| Reserve Fund Interest | $42,319 | - |

- **Concentric estimates total debt of $48.0 million (in addition to working capital and reserve fund of $3.0 million) to acquire and run the municipal utility, compared with Decorah Power's estimate of $7.6 million**
- **This would be approximately $13,100 of debt for each customer of the Decorah MEU**

# Average System Retail Rate Estimates

**When including comparable costs in rates, a Decorah MEU will be more expensive from day one –and the costs will continue to increase more over 20 years**

| Year | Decorah Power Option 3 MEU 70/30 ($/kWh) | Decorah Power Projected Alliant Rate ($/kWh) | Decorah Power Difference ($/kWh) | Concentric Projected Municipal Rate ($/kWh) | Concentric Projected Alliant Rate ($/kWh) | Concentric Difference ($/kWh) |
|---|---|---|---|---|---|---|
| **2018** | $0.0908 | $0.1331 | ($0.0423) | | | |
| **2019** | $0.0934 | $0.1359 | ($0.0425) | | | |
| **2020** | $0.0947 | $0.1388 | ($0.0441) | | | |
| **2021** | $0.0967 | $0.1417 | ($0.0450) | $0.1455 | $0.1391 | $0.0064 |
| **2022** | $0.1006 | $0.1447 | ($0.0441) | $0.1507 | $0.1391 | $0.0116 |
| **2023** | $0.1043 | $0.1477 | ($0.0434) | $0.1539 | $0.1391 | $0.0148 |
| **2024** | $0.1070 | $0.1508 | ($0.0438) | $0.1564 | $0.1433 | $0.0131 |
| **2025** | $0.1087 | $0.1540 | ($0.0453) | $0.1636 | $0.1433 | $0.0203 |
| **2026** | $0.1112 | $0.1572 | ($0.0460) | $0.1651 | $0.1433 | $0.0218 |
| **2027** | $0.1141 | $0.1605 | ($0.0464) | $0.1687 | $0.1476 | $0.0211 |

- **The average U.S. home uses 10,700 kWh per year**
- **In year one, Decorah MEU customers would pay <u>$69 more</u> than Alliant Energy customers each year**
- **By 2027, Decorah MEU customers would <u>pay $226 more each year</u>**

Comparison Summary

# Estimated Savings

**While Decorah Power's study projects savings, by 2027, a MEU would cost Decorah's citizens an extra $1.7 million each year**

| Item | Decorah Power Year 1 (2021) | Decorah Power Year 10 (2027) | Concentric Year 1 (2021) | Concentric Year 10 (2027) |
|---|---|---|---|---|
| Total Annual Sales (kWh) | 126,078,269 | 126,078,269 | 81,652,000 | 81,652,000 |
| Decorah MEU Average Rate ($/kWh) | $0.0967 | $0.1141 | $0.1455 | $0.1687 |
| Total Decorah MEU Revenue | $12,189,000 | $14,382,000 | $11,878,965 | $13,776,592 |
| Projected Alliant Energy Average Rate ($/kWh) | $0.1417 | $0.1605 | $0.1391 | $0.1476 |
| Total Projected Alliant Energy Revenue | $17,865,000 | $20,236,000 | $11,356,865 | $12,048,498 |
| Difference between Decorah MEU and Alliant Energy Revenue (Savings) | **($5,676,000)** | **($5,854,000)** | **$522,100** | **$1,728,095** |
| % Difference | (31.8%) | (28.9%) | 4.4% | 14.3% |

# Standard for Reviewing a Proposed Municipalization

**The IUB looks at numbers and many other factors not included in the feasibility study to determine if municipalization is in the interest of customers**

**Factors considered by the Iowa Utilities Board when deciding if municipalization is in the public interest include:**

1. Efficiency of Service
2. Adequacy of Service
3. Implementation Plan
4. Net Present Value (NPV) of Economic Benefits
5. Other Non-Economic Factors:
   - Effect on coordinated electric service at retail level.
   - Promotion of efficient and adequate service.
   - City's plan for operating the electric utility

# Service Boundaries – IUB Precedent

**History suggests that Decorah Power would not be allowed to serve customers outside of city limits**

- Cities requesting municipalization in the last two cases proposed to include selected service territory beyond city limits. The IUB has drawn a line at the city limits.
- The IUB has previously determined that a new municipal utility would have to pay for the infrastructure needed to separate Alliant Energy's customers outside the city from the new municipal system.
- Decorah Power has not included any costs for this process. Concentric is estimating this cost at $11 million.

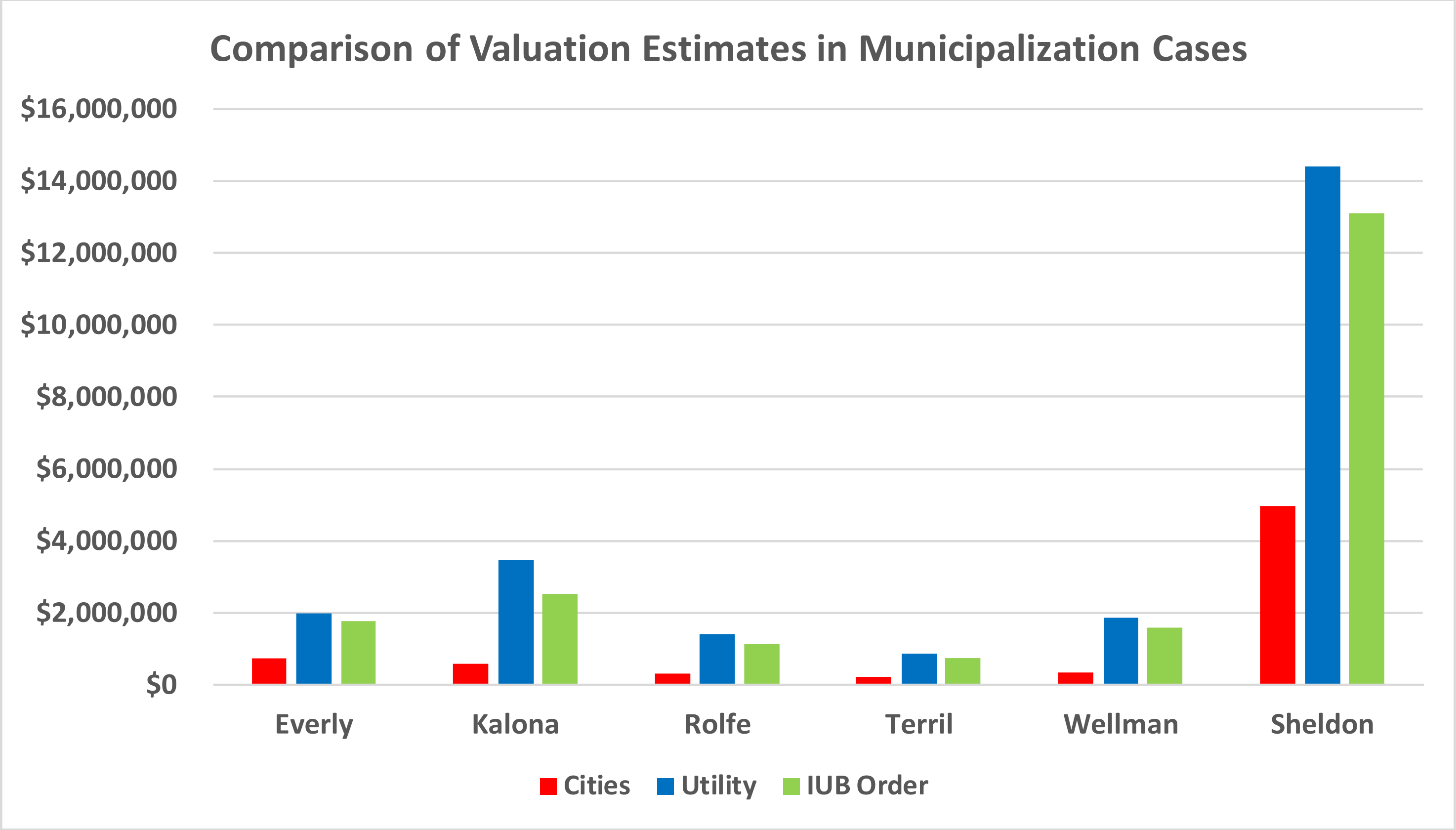
**Takeaways:**

- **Even if allowed to serve areas outside the city, a Decorah MEU would have higher costs than Alliant Energy**
- **Without those additional customers to offset costs, the negative impact on Decorah citizens of higher costs would grow larger**

# Valuation Methodology – IUB Precedent

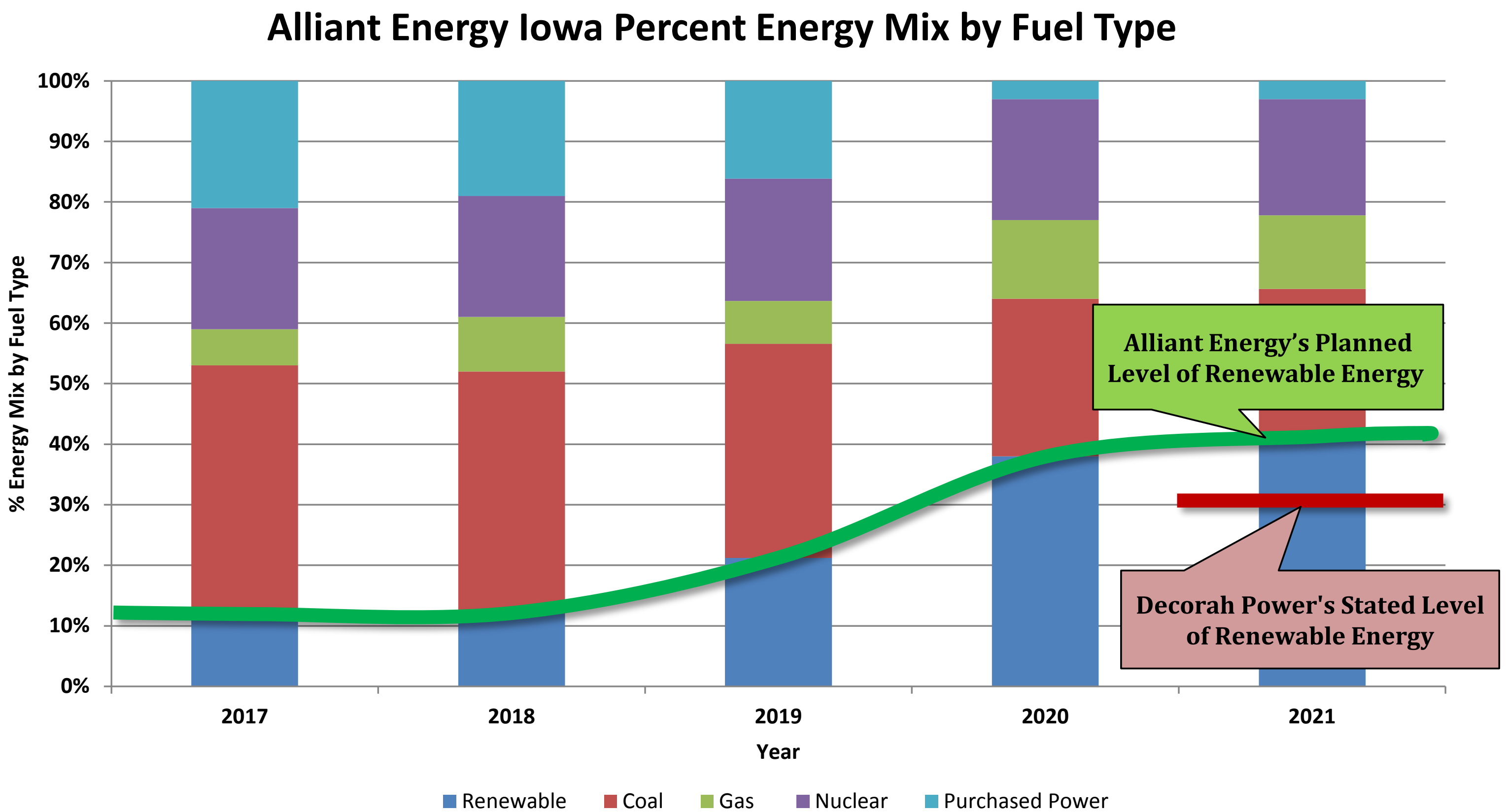
**Concentric's methodology is consistent with IUB precedent**

**Municipal Valuation:** In the most recent case, the IUB ruled that the asset buyout and reintegration costs averaged approximately 80% of Alliant Energy's estimate.



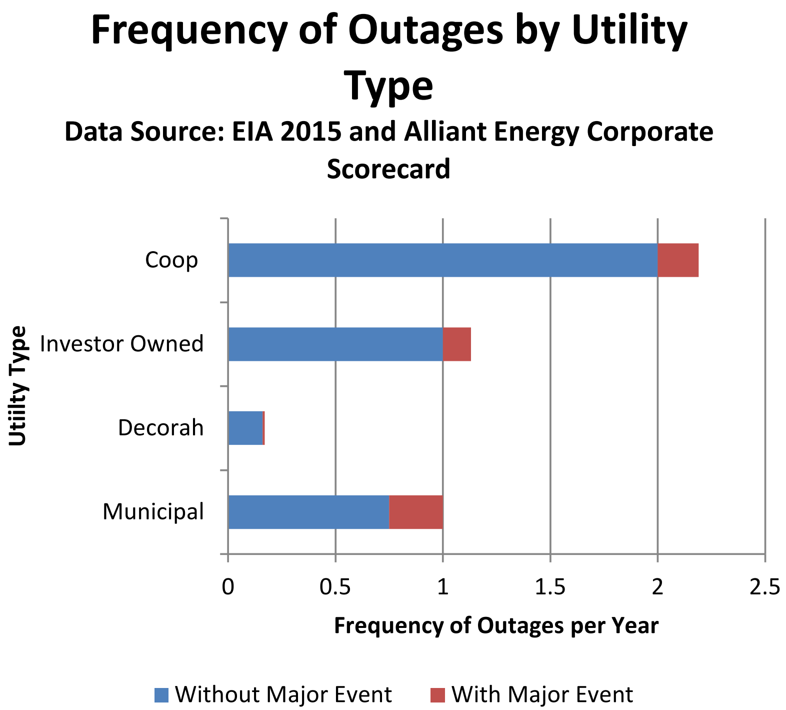
# Sustainability – Comparisons

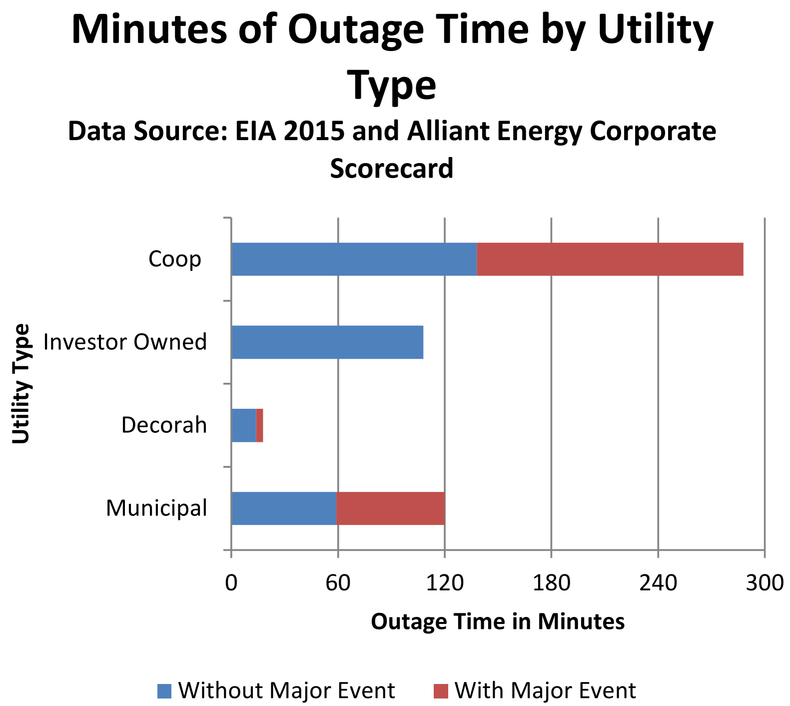
**Alliant Energy will consistently deliver more renewable energy than Decorah Power plans to provide**



# Reliability

**Alliant Energy provides reliability that exceeds the average municipal utility**

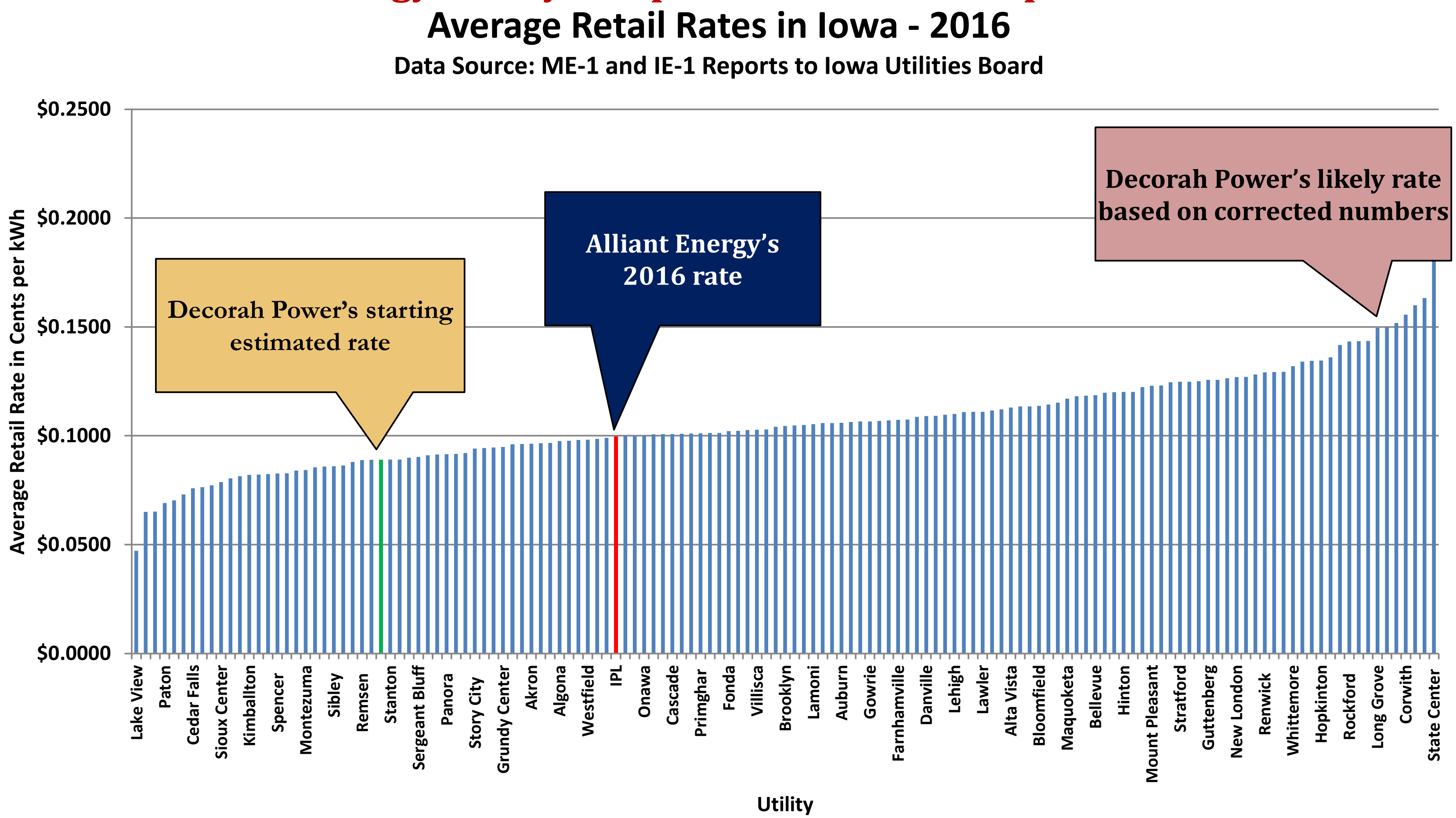



**Customer reliability will be better with Alliant Energy than with a start-up municipal utility or an outsourced service**

# Rate Comparisons

**Alliant Energy is very competitive with municipals in Iowa**




- The above data is based on 2016 information, which is the most recent available. This data does not include any price increases since the data was filed with the IUB.

# Conclusions:

- **Acquisition:** Decorah Power estimated cost to acquire the system is only ~25% of Concentric's estimated acquisition cost, based on historical IUB decisions
- **Sales:** Decorah Power's estimated energy sales are about 50% higher than actual energy sales
- **Rates:** Decorah Power has overstated Alliant Energy's Decorah average retail electric rate
- **Boundaries:** A plan to municipalize outside city boundaries is not consistent with Iowa Utilities Board rulings in 6 prior cases
- **Response:** Outsourcing of system operations will result in delayed response times and a less reliable system
- **Renewables:** Decorah Power's proposed 30% renewable energy mix in year one of operation is less than Alliant Energy's plan for 40% of renewable energy by 2021
- **Start date:** A proposed 2018 start of operation is not realistic, past cases took up to four years

**The proposed Decorah Municipal Electric Utility will result in higher costs, a less reliable system and less renewable energy than continued service by Alliant Energy**

# Conclusions:

Continuing with Alliant Energy will provide:

- Lower costs
- Better reliability
- Safer service
- Greater benefits from sustainability and renewable energy
- Fewer risks than a startup utility

**Rather than municipalizing, let's work together toward mutual goals for Decorah!**

# City of Decorah, Iowa Municipalization Preliminary Feasibility Study

February 5, 2018

CONCENTRIC ENERGY ADVISORS

www.ceadvisors.com

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# DEFINED TERMS

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|---|---|
| City | City of Decorah, Iowa |
| Commission | Colorado’s Public Utilities Commission |
| Concentric | Concentric Energy Advisors, Inc. |
| IUB | Iowa Utilities Board |
| NEM | Net Energy Metering |
| OATT | Open Access Transmission Tariff |
| RCLD | Reproduction Cost Less Depreciation |

| | |
|---|---|
| RCNLD | Replacement Cost New Less Depreciation |
| STORMS | Alliant's Work Management System |

## QUALIFICATIONS

Concentric Energy Advisors, Inc. ("Concentric") is a management consulting and financial advisory firm focused on the North American energy industry. Concentric has offices in Marlborough, Massachusetts and Washington, D.C., and specializes in utility regulation, energy markets, finance, mergers and acquisitions, valuation, management operations and planning, as well as civil litigation and alternative dispute resolution. Neither Concentric nor any of its employees have any present or contemplated future interest in the assets appraised in this report. Neither our engagement by Alliant nor our compensation is in any way contingent upon the value estimates contained in this report.

This report was prepared under the direction of Ann E. Bulkley, Senior Vice President, of Concentric. Ms. Bulkley is a certified general appraiser licensed in the Commonwealth of Massachusetts and the states of Michigan and New Hampshire. Ms. Bulkley has more than two decades of management and economic consulting experience in the energy industry. Ms. Bulkley has directed and supported numerous valuations of public utility and industrial properties for ratemaking, purchase and sale considerations, ad valorem tax assessments, and other accounting and financing matters. These valuations require expertise in utility finance and regulation, electricity and natural gas markets, and utility risk assessment. Prior to joining Concentric, Ms. Bulkley held senior expertise-based consulting positions at several firms, including Reed Consulting Group and Navigant Consulting, Inc., where she specialized in valuation. Ms. Bulkley holds an M.A. in economics from Boston University and a B.A. in economics and finance from Simmons College.

All statements, assumptions, opinions, positions, and conclusions set forth in this Preliminary Feasibility Study are solely and exclusively provided by and attributable to Concentric and to no other party whatsoever. Concentric is solely responsible for the contents of this Preliminary Feasibility Study. Nothing in this Preliminary Feasibility Study is intended, nor shall be construed, to be information, admissions, statements, assumptions, opinions, positions, or conclusions made or provided by or on behalf of Alliant.

## EXECUTIVE SUMMARY

Concentric has performed this preliminary independent assessment of the costs and implications of the City of Decorah, Iowa ("City") acquiring Alliant's existing utility assets and assuming responsibility for providing electric service to Alliant's customers in the City.[1] Our report presents facts and industry insights for the primary stakeholder constituencies regarding a choice between the establishment of a new municipal electric utility by the City or the continuation of service from Alliant. This includes information that pertains to the rates that may be charged either by Alliant or the City, as well as the services that are currently provided by Alliant or may be provided by the City. It is appropriate to jointly consider the rates and services to be provided by Alliant or the City to provide an apples-to-apples comparison between the two alternatives.

It is important to understand the process by which a city can acquire utility property in the State of Iowa. The Iowa Code §476.23 governs municipalization cases. The decision to municipalize requires an affirmative vote in a city election. If there is support for municipalization through that election, the city is then required to submit a petition the Iowa Utilities Board ("IUB") for a certificate to municipalize the electric utility. If there are no objections to the petition, the IUB issues a certificate authorizing the municipality to provide service to the city. If there is an objection, the IUB is required to conduct a hearing that determines whether the municipal ownership and operation of the system is in the public interest. That determination includes many factors such as the capability and preparedness of the city to provide the service, unnecessary duplication of facilities, the plans established to maintain the system, a cost and benefit analysis, as well as other factors.

The key determinants of the rates that customers can expect to pay under the two alternatives are: (1) the City's cost of acquiring Alliant's utility assets and other initial actions necessary to prepare to serve as the electric utility, (2) the City's annual costs of providing electric service, including operating and maintaining, continuing to invest in utility assets, and acquiring power supplies and having them delivered to Decorah, (3) a forecast of the City's expected cost of providing service based on the initial investment and ongoing operating costs, and (4) a forecast of Alliant's rates to serve as a benchmark for comparing the municipal electric utility alternative.

There are several other financial and non-financial factors that should also be considered when making an informed decision. The City will have more control over decisions that uniquely affect its electric utility, the services that it provides, and the rates that customers pay. For example, the City could decide to expand the net metering program for customers or increase spending on energy efficiency programs. Of course, the ability to make these decisions comes with the knowledge that Decorah customers will pay for all the costs of these programs.

Customers will continue to care about the quality of service that they receive and their interactions with the utility when requesting a new service, asking questions or registering concerns. Alliant is organized to provide this function in a centralized manner with staffing, processes and systems that

[1] It will be appropriate to update this assessment and any subsequent formal valuation studies as new information becomes available that will have a meaningful impact on the results.

are sized to serve the needs of its customer base in Iowa. The City may be able to replicate this function with local personnel or may decide to rely on a combination of outside vendors and City functions. In either case, the City will be challenged to achieve the economies of scale that are possible at a large utility. On the other hand, the claim is often made that local personnel may be more responsive to customer concerns. There is also a difference in governance between the two alternatives as it relates to oversight of customer service, pricing, key decisions, and other matters. Alliant is regulated by the IUB with its staff of attorneys, economists, accountants, and engineers. The City will need to establish a governance organization to approve key decisions and oversee the quality of service provided by the municipal electric utility.

The estimate of electricity rates under the City utility option begins with the costs of forming the utility, composed of acquisition costs that are established by the condemnation process as well as certain transaction and startup costs. As shown in Figure ES-1, Concentric estimates the cost of forming a utility at $51.1 million, assuming a 2021 acquisition.[2]

**Figure ES-1: Preliminary Estimate of Acquisition Costs**

| Cost Category | 2021 ($ million) |
|---|---|
| Acquisition Costs | $38.7 |
| Transaction Costs | $2.9 |
| Startup Costs | $9.5 |
| **Total** | $51.1 |

Acquisition costs include acquiring Alliant's distribution assets in service as of the transaction date, land and easements, and compensation that is due to Alliant for modifying facilities to "separate" the Decorah utility system and establish a new point of delivery for the City to receive its supply of electricity. Transaction costs include legal fees and underwriting costs necessary to issue debt to finance the acquisition costs and fund the startup efforts that prepare the municipal electric utility to exercise its responsibilities. Startup costs include new systems, inventory, facilities, and machinery that will be necessary to operate and maintain theand distribution system, manage customer relationships, and provide detailed billing of the electric service and financial reporting.

Federal law prohibits the use of tax-exempt debt to finance the acquisition of utility property from an investor-owned utility. Concentric assumed that the acquisition costs would be financed with 30-year taxable revenue bonds.[3] All other costs are assumed to be financed with 30-year tax-exempt debt. Debt service costs are a major element of the cost of providing service as shown in the Figure ES-2.

[2] This is a preliminary estimate that can only be refined after a complete system inventory is conducted. Additional scenarios have been included in Section 6, assuming a transaction close date of 2020, which is optimistic, and 2024, which may be more reasonable.

[3] Public Finance Network. "Tax-Exempt Financing: A Primer", p. 22.

**Figure ES-2: Preliminary Cost Estimate of Providing Service**

| | 2021 | 2026 | 2031 | 2036 | 2041 | 2046 |
|---|---|---|---|---|---|---|
| | ($000) | | | | | |
| **Debt Service (Principal & Interest)** | $ 3,584 | $ 3,807 | $ 4,118 | $ 4,464 | $ 5,321 | $ 5,489 |
| **Power Supply & Delivery** | | | | | | |
| Purchased Power and Capacity | $ 3,214 | $ 4,084 | $ 4,831 | $ 5,484 | $ 6,215 | $ 7,032 |
| ITC Transmission Expense | $ 2,302 | $ 2,443 | $ 2,669 | $ 2,832 | $ 3,094 | $ 3,283 |
| **O&M Expenses** | | | | | | |
| Operations and Maintenance Expense | $ 1,247 | $ 1,411 | $ 1,597 | $ 1,807 | $ 2,044 | $ 2,313 |
| Customer Accounting | $ 223 | $ 253 | $ 286 | $ 323 | $ 366 | $ 414 |
| Administrative & General | $ 819 | $ 927 | $ 1,049 | $ 1,186 | $ 1,342 | $ 1,519 |
| Energy Assistance Program | $ 3 | $ 4 | $ 4 | $ 5 | $ 6 | $ 6 |
| Energy Efficiency | $ 403 | $ 456 | $ 516 | $ 583 | $ 660 | $ 747 |
| **Total Decorah Municipal Electric Utility Cost of Service** | $ 11,796 | $ 13,384 | $ 15,069 | $ 16,684 | $ 19,049 | $ 20,802 |
| Replacement Property Taxes | $ 83 | $ 94 | $ 106 | $ 120 | $ 136 | $ 153 |
| **Total Decorah Cost** | $ 11,879 | $ 13,478 | $ 15,175 | $ 16,804 | $ 19,184 | $ 20,955 |

Excluding the debt service, the largest cost of providing service is the power supply and delivery costs, which include the cost of acquiring supply and the transmission charges to transport power to Decorah. Concentric has assumed that the City municipal electric utility would purchase power at market rates. In addition, Concentric has assumed that the City will pay the firm point-to-point transmission costs and corresponding costs for use of the ITC transmission system.

For comparison purposes, Concentric assumed that Alliant's rates will increase by approximately 6 percent in 2018 based on Alliant's current rate case request and 3.0 percent every third year beginning in 2021 based on analysis of Midwestern rate case frequency and magnitude. The Base Case analysis estimates that of municipal ownership will result in an increase in costs of $11 million on a net present value (NPV) basis over 10 years.

However, given the uncertainties of projecting costs over such an extended period, Concentric prepared alternative "Lower Bound" and "Upper Bound" scenarios to reflect the timing of the municipal acquisition of the system and that costs may be lower or higher than expected. The "Lower Bound" Scenario is considered the less risky scenario for a Decorah municipalization, while the "Upper Bound" Scenario reflects more conservative assumptions, resulting in a riskier scenario for the City. These scenarios are based on an internally consistent set of assumptions developed around transaction dates that are either aggressive (2020 for the Lower Bound Scenario) or reflect an extended condemnation process (2024 for the Upper Bound Scenario). In addition, these scenarios reflect the range of potential operating and acquisition costs. Residents and businesses of Decorah will want to consider the expected costs of the two alternative scenarios and the potential that the costs of either alternative will be significantly higher than expected. The figure below summarizes the differences between the scenarios. As mentioned, the Upper Bound Scenario includes assumptions that would make a municipalization riskier (i.e., costlier), whereas the Lower

Bound Scenario includes assumptions that would make a municipalization less risky than the Base Case.

**Figure ES-3: Key Scenario Assumptions**

| Assumption | Base Case | Upper Bound | Lower Bound |
|---|---|---|---|
| Municipal Start Date | 2021 | 2024 | 2020 |
| Replacement Capital Investment | 4.00% | 4.50% | 3.50% |
| Energy Efficiency Incentive Factor | 100.00% | 100.00% | 50.00% |
| Cost of Debt | 6.00% | 6.50% | 5.75% |
| Operating Costs (2021$/customer) | $623 | $865 | $504 |
| Rate Increase | 3.00% every three years starting 2021 | 2.20% every three years starting 2021 | 4.00% every three years starting 2021 |
| Asset Buyout % Inventory | 2.00% | 3.00% | 1.50% |
| Going Concern (2021$mm) | 4.40 | 9.55 | 2.38 |

The results of the Base Case and the two alternative scenarios are presented in Figure ES-4. In all cases, the 10- and 20-year net present value ("NPV") is negative.

**Figure ES-4: Scenario Results**

| | 2020 | 2021 | 2026 | 2031 | 2036 | 2041 |
|---|---|---|---|---|---|---|
| | | ----------------------------------($000)---------------------------- | | | | |
| **Base Case** | | | | | | |
| Total Cost | | | | | | |
| Decorah | $ - | $ 11,879 | $ 13,478 | $ 15,175 | $ 16,804 | $ 19,184 |
| IPL | $ - | $ 11,357 | $ 11,698 | $ 12,410 | $ 13,166 | $ 13,561 |
| Net Savings/(Costs) | $ - | $ (522) | $ (1,780) | $ (2,765) | $ (3,638) | $ (5,624) |
| 10-Year Net Present Value | | $ (11,039) | | | | |
| 20-Year Net Present Value | | $ (26,302) | | | | |
| **Upper Bound** | | | | | | |
| Total Cost | | | | | | |
| Decorah | $ - | $ - | $ 15,104 | $ 16,960 | $ 19,236 | $ 21,298 |
| IPL | $ - | $ - | $ 11,517 | $ 12,029 | $ 12,564 | $ 12,840 |
| Net Savings/(Costs) | $ - | $ - | $ (3,587) | $ (4,932) | $ (6,672) | $ (8,458) |
| 10-Year Net Present Value | | $ (30,188) | | | | |
| 20-Year Net Present Value | | $ (57,946) | | | | |
| **Lower Bound** | | | | | | |
| Total Cost | | | | | | |
| Decorah | $ 9,986 | $ 10,824 | $ 12,355 | $ 13,916 | $ 15,754 | $ 17,451 |
| IPL | $ 11,026 | $ 11,467 | $ 11,926 | $ 12,899 | $ 13,952 | $ 14,510 |
| Net Savings/(Costs) | $ 1,040 | $ 643 | $ (429) | $ (1,017) | $ (1,802) | $ (2,942) |
| 10-Year Net Present Value | | $ (65) | | | | |
| 20-Year Net Present Value | | $ (6,560) | | | | |

Finally, in addition to considering the cost of electric service, Decorah voters will want to make a realistic assessment of the ability of a City-owned utility to execute on its obligations to provide safe and reliable electric service at levels that approximate or exceed the level of service provided by Alliant. This is referred to as "operating risk" and often receives short shrift in municipalization assessments where the municipality is entering a new business that is critically important to the health and safety of its citizens. A realistic view with respect to future system investments is part of this analysis.

## SECTION 1: INTRODUCTION

Concentric has performed a preliminary independent assessment of the costs and implications of the City acquiring Alliant's existing utility assets and assuming responsibility for providing electric service to Alliant's Decorah customers (a "Preliminary Feasibility Study").[4] As an independent assessment, the Preliminary Feasibility Study presents certain facts and perspectives that inform the primary stakeholder constituencies: Alliant as the current asset owner and service provider, the City of Decorah and its officials, and the residents and businesses that depend on reasonably priced, reliable and safe electric service.

The Iowa Code §476.23 governs municipalization cases. The decision to municipalize requires an affirmative vote in a city election. If there is support for municipalization through that election, the city is then required to submit a petition the IUB for a certificate to municipalize the electric utility. If there are no objections to the petition, the IUB issues a certificate authorizing the municipality to provide service to the city. If there is an objection to the municipalization, the IUB is required to conduct a hearing that determines whether the municipal ownership and operation of the system is in the public interest. That determination includes many factors such as the capability and preparedness of the city to provide the service, unnecessary duplication of facilities, the plans established to maintain the system, and a cost and benefit analysis, as well as other factors.

Concentric has considered the current costs and projected future cost of providing electric service under the two alternatives: (1) continuation of Alliant as the service provider, and (2) service provided by a newly formed City municipal electric utility. The City alternative requires the purchase of certain distribution, and other assets from Alliant at a price that will either be agreed upon or determined through a regulatory approval process under the oversight of the IUB. There will be additional costs related to the separation of the municipal system from the Alliant system and the reintegration of the remaining Alliant system. Financing of the acquisition will be included in the cost of a city owned municipal electric utility and recovered along with other costs through the rates that will be charged by the City.

It is not sufficient to only compare the rates under the City and Alliant options; it is also necessary to ensure that the comparison reflects a fair comparison between the services that would be provided by either the City or Alliant. For example, certain services are currently provided by Alliant throughout its service area and are included within the charge for basic electric service. The costs of those services (e.g., energy efficiency, support for solar energy, local property tax) will need to be considered as part of the service provided by the City to provide a fair comparison to the Alliant tariffed service.

There are also certain nonfinancial factors that should be considered by the City and residents in deciding whether to assume responsibility for providing electric service. For example, the City will have greater control over decisions that relate to the specific services to be provided by the City and

[4] This Preliminary Feasibility Study will provide a high-level analysis of the valuation of Alliant's assets within the Decorah city limits. A more detailed review and certified appraisal report is likely to be required should the acquisition be approved by a vote of Decorah voters.

control over spending priorities that determine the capital and operating budget. However, the City will also be responsible for operating and maintaining the electric system, including responding to outages and other unforeseen challenges. The City will also need to determine which of the many oversight and regulatory services currently provided by the IUB will need to be replicated by the City with appropriate governance procedures.

The Preliminary Feasibility Study begins in Section 2 with a discussion of the municipalization process as informed by Iowa law and the precedent of the IUB. This review provides important context for the decision faced by the City. Section 3 presents various factors that are relevant to the determination of a fair acquisition price and presents a preliminary range for acquisition costs that the City can expect based on a reasonable set of assumptions. The section also addresses the costs of considering, planning and starting an electric utility, referred to as "Transaction and Startup" costs. Section 4 summarizes the City's cost of providing electric service, including the financing costs attributable to the acquisition along with all other costs of providing service. Section 5 presents the alternative of continuing Alliant services. Finally, Section 6 brings all the relevant considerations together in a summary comparison of the two alternatives. In addition, Section 6 provides a sensitivity analysis that demonstrates the effect of key assumptions on the Preliminary Feasibility Study.

# SECTION 2:
# THE MUNICIPAL ALTERNATIVE

## 2.1 OVERVIEW

Forming a municipal electric utility can be challenging, even when there is a compelling economic and public benefits case to be made. The municipality is making a likely irrevocable decision to finance and acquire assets from the existing utility provider, assume the obligations of providing reliable, safe and affordable electric service, and form an organization and governance structure to manage and operate the utility. The municipality is not only committing to acquiring existing assets, but to maintaining electric facilities according to national standards and to continue making investments that support the services that local residential and business customers expect. The Decorah City Council and residents, as the ultimate decision makers, will need to make a well-informed decision that considers economic and other considerations, recognizing that expected electricity prices may turn out to be higher or lower due to factors that are both within and beyond the municipality's control.

The impetus for considering municipalization varies but often centers around issues such as: (1) desire for local control; (2) the prospect of obtaining a greener electricity supply; (3) dissatisfaction with the existing utility supplier attributable to price and/or perceived service issues; and/or (4) perception that electricity prices will be lower with municipal ownership due to financing advantages or the belief that it will be possible to bypass costs that are incurred by the existing utility to provide service.

## 2.2 STATE OF IOWA LAW AND MUNICIPAL AUTHORITIES

The Iowa Code §476.23 governs municipalization cases. The process requires that there be an affirmative vote in a city election to pursue municipalization efforts. If there is support for municipalization through the election, the city is required to submit a petition to the IUB for a certificate to municipalize the electric utility. If there are no objections to the petition, the IUB issues a certificate authorizing the municipality to provide service to the city. If there is an objection, the IUB is required to conduct a hearing that determines if a city's service to customers is in the public interest. That determination includes consideration of any unnecessary duplication of facilities.

If the certificate is granted, it includes a requirement that the city pay the electric utility that is serving the customers a reasonable price for the facilities that are used to serve the customer. The statute provides that the IUB consider the following in establishing a reasonable price:

1) The cost of the facilities being acquired;

2) Any generation and capacity dedicated to the customer, including, but not limited to, electric power generating facilities and alternate energy production facilities not in service but for which the IUB has issued an order pursuant to Section 476.53;
3) Electric power generating facility emissions plan budgets approved by the IUB;
4) Depreciation;
5) Loss of revenue; and
6) Cost of reintegration of the system after the detached portion is sold.[5]

It is important to note that, other than stating that a reasonable price must be paid by the city for the electric utility's facilities and listing various factors to consider in making the price determination, the statute does not give explicit guidelines as to how the IUB is to determine a reasonable price.

In addition to acquiring the physical assets of the existing utility, the city will need to secure contractual arrangements to acquire electricity supply and have it delivered to the city via interconnections with transmission facilities that are owned by ITC Midwest or by other third parties. Efforts to secure electricity supply contracts and transmission service typically proceed in parallel with the condemnation process.

Just compensation is a primary driver in determining whether municipalization makes economic sense. However, public consideration of the municipal option often proceeds on a more accelerated path than a final determination of just compensation, creating a risk that the City Council and voters will decide to acquire assets based on a price that is well below the final determination. A typical sequence of activities is as follows:

- The City or entity supporting municipalization decides to retain an outside contractor to perform a feasibility study addressing the cost of and plan for acquisition and subsequent operation of the electric utility.
- The City decides whether or not to move forward by establishing a public election.
- If approved by a majority of voters, the the City submits a petition to the IUB.
- If the petition is challenged, regulatory proceedings commence through an IUB proceeding. The IUB determines whether or not the municipal operation of the electric utility system is in the public interest. This process can take years to complete and the decisions made by the IUB are reviewable by courts of appeal.
- After the legality of the acquisition and just compensation are determined, the community prepares to assume responsibility for management and operation of the utility, a process that can take up to a year to complete.

The process for municipalization of an electric utility can take many years and require considerable out-of-pocket expense to retain legal and consulting services.[6]

5 IUB decision, at para 3.

### 2.3 FEASIBILITY STUDY

The Feasibility Study is a report that provides the financial and operational considerations for the municipalization effort. As the primary source of information relied upon by municipal officials and voters, it is essential that a feasibility study be performed, meeting at a minimum the following criteria:

- Understandable: should be understandable by any voter interested in making an informed decision, relying on plain language to explain electric industry concepts to the extent possible;
- Informed by Relevant Law, Policy, and Precedent: as necessary to accurately define the requirements that a municipality must satisfy and the future operating environment in which investment and other decisions will need to be made;
- Objective: avoid any bias in the framing of the analysis or specifying assumptions, with conclusions and recommendations informed by relevant expertise and experience;
- Comprehensive: inclusive of all relevant quantitative and qualitative considerations;
- Rigorous: analytically sound, consistent with professional standards;
- Includes Risk Analysis: both "Acquisition Risks" through the presentation of analyses that reflect a reasonable range of acquisition and startup costs based on alternative sets of reasonable assumptions that capture the range of uncertainty and "Operational Risks" that will be assumed by the City when it assumes responsibility for operating the utility, including the obligation to respond to severe storms and other extraordinary events; and
- Documented: all source materials, assumptions, and calculations should be fully documented.

Among these criteria, elaboration is required with respect to the "Comprehensive" criterion. As noted above, the Feasibility Study should address quantitative, hard-to-quantify, and qualitative considerations. The quantitative assessment should produce a comparison of the municipal option and the continuation of the current electric service by the incumbent utility. There are several assumptions to consider as "Base Case" or "Most Likely" assumptions as well as realistic alternative scenarios. These assumptions include energy prices, operating costs, the impact of the acquisition on the municipality's financial condition, the ability to access capital markets on reasonable terms, and any foregone municipal revenues (e.g., property taxes). The cost of providing electric service includes the following costs:

[6] The process prior to filing a petition with the IUB can take several years. In the most recent municipalization cases in Iowa, Docket Nos. SPU-06-05, 07, 08, the IUB issued its decisions two years after the petitions were filed. In those cases, the IUB concluded that it was not in the public interest to proceed with the municipalization of Alliant's electric distribution system assets.

- Debt Service: principal and interest payments on the debt incurred to fund the acquisition costs and finance incremental investments.
- Working Capital: the cost associated with maintaining cash balances to support day-to-day operations of the utility and respond to unanticipated events, including securing outside crews and equipment to assist with emergency storm restoration.[7]
- Energy and Capacity : the cost of purchasing delivered power supply in MISO- Iowa.
- Transmission Expense: the cost of transporting power under the ITC tariffs to the expected point of delivery to the Decorah system.
- Operations and Maintenance Expense: the cost to operate and maintain the transmission and distribution systems, including substations, and distribution lines, transformers, and communication facilities, as well as costs attributable to vegetation management and utility crews and equipment.
- Administrative and General Expense: salaries and wages, office supplies, outside services, rents, and other expenses not attributable to a specific utility function (i.e., distribution, transmission, or supply).
- Customer Service: the cost of billing and collection, including maintaining customer information systems.
- Taxes: Replacement local property taxes.
- Customer Programs: the cost of providing energy efficiency and energy assistance programs.
- Replacement Capital: investments required to replace distribution system assets, including assets that have failed and assets beyond their economic and functional life.

The financing costs for the municipal option are based on borrowing costs and the amount being financed, where the latter is the sum of the just compensation for acquired assets and startup costs. As described in Section 4.3, while municipal utilities can issue low-interest, tax-exempt debt to finance their *future* capital needs, the City's initial acquisition of the utility assets must be financed with taxable debt, similar to the debt relied upon by Alliant and other investor-owned utilities that finance investments to replace aging infrastructure, modernize the network, and support new services.[8] All financing costs are included in the total costs of providing basic electric service (commonly referred to as "revenue requirements") and recovered through electricity rates charged to customers.[9]

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7 Concentric relied on 45 days of working capital, estimated at $1.4 million in the first year, for the Base Case. Working capital is included in total debt service.

8 Public Finance Network. "Tax-Exempt Financing: A Primer", p. 22.

9 Under both the IPL and municipal options, the utility will need to recoup the investment through an annual charge (i.e., depreciation) and a separate financing cost. These are frequently referred to as the return "of" and "on" capital, respectively.

Most utilities offer services that are more than what is required to meet "basic" service. These services may be provided to all customers, offered to all customers as an option, or offered to a subset of customers based on the specified criteria, such as the presence of solar panels on their rooftops. It is necessary to consider these harder-to-quantify factors in order to present a valid apples-to-apples comparison between the City and Alliant ownership alternatives. For example, there may be aspects of the existing utility service that the municipality may decide to expand, reduce or abandon. These include public benefits programs and services provided by Alliant overseen by the IUB, including conservation and energy efficiency programs (e.g., in-home audits; insulation and appliance rebates), low-income assistance, and financial support for solar energy that is located on the customer's premises, but connected to the utility distribution grid. The municipality may also include potential value-added utility services that require an investment in infrastructure and new information systems, such as net metering that provides customers with compensation for the on-site generation of power that is put back on the distribution system. Alliant currently offers all of these services and recovers the costs from its entire base. However, if these same programs are to be provided by the City, these costs will now be borne (or avoided) only by customers in Decorah. An illustrative example: A greater proportion of Decorah customers taking part in energy efficiency programs or moving to net metering (through installation of rooftop solar panels) could put upward pressure on electricity rates for the remainder of the Decorah customers after the acquisition. The comparison between the City-owned utility and continuation of service from Alliant will need to take these harder-to-quantify considerations into account to provide a fair comparison.

Finally, there are several qualitative considerations that will affect the comparison between the municipal option and continuation of Alliant service. These include comparable levels of service quality, including customer service, reliability under favorable weather conditions and the ability to respond to storm-related and other extraordinary outages. Alliant's service quality is subject to oversight by the IUB. The City will need to establish a governance structure to oversee the municipal electric utility's reliability, safety and affordability of service, as well as a process for resolving customer billing and other inquiries.

### 2.4 RECENT MUNICIPALIZATION EXPERIENCE

As shown in Figure 1, only 16 of 51 national municipalization efforts since 2001 have been approved; 15 of these have been completed and another (Boulder, CO) is continuing to pursue municipalization. Four additional communities are currently considering or seeking the necessary approvals for municipalization. One community acquired the system from the regulated utility and sold the system back to the utility 12 years later. The remaining communities have decided not to proceed either because the municipalization effort has been rejected by voters, denied by regulatory commissions or otherwise abandoned by the municipality during the process. Municipalizations fail to proceed for a variety of reasons, including abandonment by the municipal government after consideration of a feasibility study or rejection by voters after government officials decided to bring the decision to a vote. Municipalization efforts have also been abandoned if costs and time necessary to complete the effort greatly exceed original estimates.[10] Feasibility studies performed on behalf of municipalities frequently underestimate both the time and cost of completing municipalization efforts that do not have the cooperation of the existing utility service provider.

**Figure 1: United States Municipalization Efforts: 2001–2017**

| Municipality | Utility | Date | Status | State |
|---|---|---|---|---|
| Hermiston, OR | Pacific Power & Light | 10/1/2001 | Completed | OR |
| Village of Hamburg, NY | New York Gas & Electric | 2001 | Abandoned | NY |
| Oakland, CA | Pacific Gas & Electric Company | 2002 | Abandoned | CA |
| Saint Henry, OH | Dayton Power & Light, Midwest Electric | 2002 | Abandoned | OH |
| Hercules, CA | Pacific Gas & Electric Company | 10/1/2002 | Completed (sold back to PG&E in 2014) | CA |
| Corona, CA | Southern California Edison | 5/7/2003 | Abandoned by City Council | CA |
| Chula Vista, CA | San Diego Gas & Electric | 2004 | Abandoned | CA |
| Clackamas, OR | Portland General Electric Co. | 2004 | Abandoned | OR |
| Elk City, OK | American Electric Power Co. | 2004 | Completed | OK |
| Rancho Cucamonga, CA | Southern California Edison | 2004 | Completed | CA |
| Huron, OH | Ohio Edison | 2004 | Completed | OH |
| Moreno Valley, CA | Southern California Edison | 2/6/2004 | Completed | CA |
| San Marcos, CA | San Diego Gas & Electric | 5/1/2004 | Abandoned | CA |
| Berea, KY | Berea College Electric Utility | 2005 | Completed | KY |
| Fairfield, IA | Alliant Energy Corp. | 3/4/2005 | Abandoned | IA |
| Winter Park, FL | Progress Energy Florida | 6/1/2005 | Completed | FL |
| Cerritos, CA | Southern California Edison | 7/1/2005 | Completed | CA |
| Oregon Mutual Utility Development | Portland General Electric Co. | 7/25/2005 | Rejected by Governor | OR |
| Maitland, FL | Progress Energy Florida | 8/8/2005 | Rejected by City Council | FL |
| Iowa City, IA | MidAmerican Energy | 11/1/2005 | Rejected by Voters | IA |
| Belleair, FL | Progress Energy Florida | 11/8/2005 | Rejected by Voters | FL |
| Island Power, Pittsburg, CA | Former Military Base | 2006 | Completed | CA |
| City of Paris, IL | Ameren Illinois | 2007 | Abandoned | IL |
| Titonka, IA | Interstate Power & Light Co. | 2/1/2007 | Abandoned | IA |
| City of Atka | Andreanof Electric Corp. | 2008 | Completed | AK |
| Everly, IA | Interstate Power & Light Co. | 5/13/2008 | Rejected by Iowa Utilities Board | IA |
| Kalona, IA | Interstate Power & Light Co. | 5/13/2008 | Rejected by Iowa Utilities Board | IA |
| Rolfe, IA | Interstate Power & Light Co. | 5/13/2008 | Rejected by Iowa Utilities Board | IA |
| Terril, IA | Interstate Power & Light Co. | 5/13/2008 | Rejected by Iowa Utilities Board | IA |
| Wellman, IA | Interstate Power & Light Co. | 5/13/2008 | Rejected by Iowa Utilities Board | IA |
| San Francisco, CA | Pacific Gas & Electric Company | 11/4/2008 | Rejected by Voters | CA |
| Skagit County, WA | Puget Sound Energy | 11/4/2008 | Rejected by Voters | WA |
| Whidbey Island, WA | Puget Sound Energy | 11/4/2008 | Rejected by Voters | WA |
| Jefferson County, WA | Puget Sound Energy | 11/4/2008 | Completed | WA |
| Marin Energy Authority | Pacific Gas & Electric Company | 2009 | Completed | CA |
| City of Egegik | Egegik Light & Power Company | 2011 | Completed | AK |
| South Daytona, FL | Florida Power & Light Co. | 11/1/2012 | Rejected by Voters | FL |
| Thurston County, WA | Puget Sound Energy | 11/6/2012 | Rejected by Voters | WA |
| Toledo Public Power | First Energy | 8/1/2012 | Completed | OH |
| City of Klamath Falls, OR | PacifiCorp | 2013 | Abandoned | OR |
| Santa Fe, NM | PNM Resources Inc. | 3/13/2013 | Considering | NM |
| Boulder, CO | Xcel Energy Inc. | 4/22/2013 | Approved | CO |

10 In the case of Las Cruces, New Mexico, in 1991, the consultant projected it would cost that city $13 million to $26 million to acquire the system. In 1999, Las Cruces abandoned its takeover effort after the costs escalated to over $105 million.

| Municipality | Utility | Date | Status | State |
|---|---|---|---|---|
| Minneapolis, MN | Xcel Energy Inc. | 8/1/2013 | Abandoned | MN |
| Klamath County, OR | PacifiCorp | 2014 | Considering | OR |
| Davis, California | Pacific Gas & Electric Company | 1/28/2014 | Abandoned | CA |
| Cape Coral, FL | LCEC | 2014 | Considered | FL |
| Island of Maui, HI | Hawaiian Electric Industries | 2015 | Considering | HI |
| Millersburg, Oregon | PacifiCorp | 5/12/2015 | Rejected by Voters | OR |
| DC Public Power | Pepco | 10/1/2015 | Abandoned | DC |
| California Electrical Utility District | PG&E, SDG&E SCE | 11/8/2016 | Abandoned | CA |
| Bainbridge Island, WA | Puget Sound Energy | 7/9/2017 | Abandoned | WA |

*Source: Data derived from various news publications, and SNL Financial.*

In 2006, several Iowa municipalities petitioned the IUB to municipalize their electric utility systems (Everly, Kalona, Rolfe, Terril, and Wellman, shown in Figure 1). The IUB addressed these requests in a consolidated docket in 2008. In its decision in that proceeding, the IUB determined that the municipalization of the electric utility assets was not in the public interest in each city, and therefore, rejected each of the petitions filed by these cities. In that case, the IUB relied on the public interest standard, requiring a demonstration that municipalization would be in the public interest, taking into consideration financial benefits, as well as operational preparedness, and the due diligence and planning that are necessary to provide safe, reasonable and adequate service into the future. [11]

Several municipalizations have been completed at costs that greatly exceeded original estimates. For example, Winter Park, Florida's costs escalated from an original estimate of $16 million to nearly $50 million by the time the takeover was completed. The initial feasibility study for Jefferson County Public Utility District's acquisition of Puget Sound Energy's electric assets estimated an acquisition cost of $47 million, less than half of the final acquisition cost of $103 million, excluding startup expenses. Increased acquisition and transaction costs translate directly into higher than projected municipal electricity rates.

[11] IUB decision, July 11, 2008, at para. 22.

# SECTION 3:
# DECORAH PROJECTED COSTS TO FORM AN ELECTRIC UTILITY

## 3.1 INTRODUCTION

The City will incur three major categories of costs to acquire and establish an electric utility:

1. Acquisition Costs: costs of acquiring Alliant's physical transmission and distribution system assets (e.g., distribution poles, lines, meters) at a reasonable price. Iowa code (476.23) identifies that the reasonable price shall consider the cost of the facilities being acquired, including electric generation and any Board-approved generation projects not yet in service, depreciation, loss of revenue, and the cost of reintegration of the system. These other categories include land and right-of-way easements that represent the fair market value of property owned by Alliant and easements that provide access to land that may be used by Alliant. These costs include system separation costs incurred by Alliant that are required to reconfigure the remaining Alliant facilities to maintain safe and reliable service for both Alliant and Decorah and compensation for assets acquired by Alliant or contractual obligations entered into to serve Decorah, but that will not have any continuing value to Alliant after the transaction. These are referred to as severance or stranded costs. Just compensation includes an estimate of the "going concern" value of the assets sold by Alliant to Decorah, recognizing that the value of the business being acquired by Decorah is greater than a collection of physical assets.
2. Transaction Costs: legal, consulting, and financing costs incurred by the City to pursue the condemnation process and close the transaction.
3. Startup Costs: startup costs incurred by the City necessary to prepare to perform as an electric utility, including new systems, inventory and machinery that will be necessary to operate and maintain the distribution system, manage customer relationships, provide detailed billing of the electric service and provide financial reporting. In addition, this category includes initial debt service reserve and working capital.

Each of these categories will be addressed in the balance of Section 3, including a summary of total costs that will be incurred by the City to begin serving as an electric utility. As noted above, the acquisition costs will be financed with taxable debt; the City is allowed to finance the transaction and startup costs with tax-exempt debt. These annual financing costs, combined with salaries and other costs required to maintain and operate the distribution system, are addressed in Section 4.

This section assumes that a condemnation process will be pursued initially and that any negotiation, should it occur, would also result in just compensation for Alliant's assets, as determined pursuant to Iowa laws.

### 3.2 ACQUISITION COSTS

A valuation methodology is necessary to arrive at a fair value or just compensation for the various components of acquisition costs. Physical transmission and distribution utility assets are usually valued by employing a cost-based valuation methodology; land and Going Concern value is generally estimated based on market principles that may include recent comparable transactions or the value of a future income stream.

The methodology that has been consistently relied on in Iowa for determining the value of the assets that are proposed to be included in the acquisition is the Replacement Cost New Less Depreciation ("RCNLD") approach. The RCNLD methodology develops the Replacement Cost New ("RCN") of the assets by replacing the existing assets with functionally equivalent assets of current materials and technology. The fair market value of the assets is determined by deducting from the RCN the estimated depreciation of the assets to establish the RCNLD. The RCNLD value represents an estimate of the cost to construct a new system today with commercially available equipment and technology and considering the current construction limitations and the current condition of the existing assets. It is likely, however, that it would not be possible to reconstruct the electric distribution assets in the same configuration or to apply the same development and construction practices. Some existing distribution routes might not be feasible under current regulations, and as a practical matter, it may not be possible to site all of the existing distribution lines in the same location today if they were built in areas that are currently classified as wetlands, environmentally sensitive, or are densely populated. Each of these factors increases the costs associated with approvals and construction. Even routes that are acceptable under current regulations might face local opposition if the attempt was made to establish those routes today

#### 3.2.1 DISTRIBUTION SYSTEM ASSETS

Concentric developed a preliminary estimate of the value of the assets in the City of Decorah based on the replacement cost methodology. The asset inventory was based on Alliant's estimate of the cost of the assets. The RCN estimate was developed based on an estimate of the current inventory of assets in Decorah. The current replacement cost was estimated for these assets based on Alliant's cost estimating team.

A cost per mile estimate was applied to determine the replacement cost for the primary and secondary distribution system within the City limits of Decorah. Mileage data was gathered from the Alliant (GIS) Mapping System and the average cost per mile was based on the 2014 to 2016 Alliant average costs per mile from STORMS. STORMS is Alliant's Work Management System, which contains both labor and material costs. Due to known rocky soil, a heavy concentration of trees and recognition of work around existing facilities, a complexity factor was applied to those costs contained in STORMS. This is consistent with Alliant estimating practices for normal rebuild and replacement projects in the Decorah Zone and within Alliant.

Metering costs were included, based upon the contract values on a cost per meter for the Iowa Smart Meter Project for which deployment is scheduled to begin in January of 2018. The customer meter count was extracted from the Alliant (GIS) mapping system.

The substation cost estimate includes the cost to construct the substation, the land purchase, feeder exits, and the transmission extension to the substation based upon other similar projects that Alliant has constructed within its service territory.

A cost per mile estimate was used to determine the cost to construct distribution facilities to serve customers within the Decorah area, but outside the City Limits that would be required to separate the Alliant distribution system from that the City of Decorah proposes to acquire. Consistent with the approach to the replacement cost calculation, mileage data was gathered from the Alliant (GIS) mapping system and the average cost per mile was based on the 2014 to 2016 Alliant average costs per mile from STORMS Work Management System, applying the same complexity factors that were applied in the replacement cost calculation.

An average cost was applied to the street lights based upon the existing number of street lights. The number of street lights was extracted from the Alliant (GIS) mapping system and the average cost per street light was developed using the STORMS Work Management System.

Lastly, the incremental capital investment is intended to reflect the capital additions that take place until expected acquisition date. These investments include repairs and replacements, which would also include the offsets of retirements, as well as technological improvements to the system that are made during that time period and estimated at 4.0 percent of asset value annually in the base case. The RCN was depreciated based on the expected life of the assets. The IUB recognizes a difference between accounting depreciation and depreciation for valuation purposes. In recent municipalization cases, the IUB recognized that depreciation from a valuation perspective is intended to reflect the continued usefulness of the assets. Therefore, while an asset may be fully depreciated for tax purposes and 90 percent depreciated for ratemaking purposes, it may still have a 50 percent remaining useful life. The IUB noted that the fair market value of that asset would be based on the 50 percent remaining useful life.[12] Concentric depreciated the RCN of Alliant's assets in Decorah using the expected lives of the assets based on Alliant's most recent depreciation study that has been accepted by the IUB in Alliant's rate proceedings, relying on a 4 percent discount factor.[13] Concentric's preliminary estimate of the value of Alliant's distribution assets based on the RCNLD methodology and escalated to 2021 is $23.3 million, as shown in Figure 2.

12 IUB decision, WL p. 8.

13 The IUB has recognized that a discount factor is reasonable because it uses a fundamental valuation concept that the current value of service today is more valuable at present than service to be provided in future years.

**Figure 2: Estimated 2021 Replacement Cost Depreciated**

| Asset Category | Replacement Cost Depreciated 2021 ($ million) |
|---|---|
| Substation | $3.2 |
| Poles, Towers, Fixtures | $5.4 |
| Overhead Conductor | $2.5 |
| Underground Conduit | $3.4 |
| Underground Conductor | $1.2 |
| Transformers- Overhead Line | $1.1 |
| Transformers- Padmount | $0.8 |
| All Service | $1.6 |
| Meters | $0.6 |
| Streetlights | $0.2 |
| Incremental CapEx pre-municipalization | $3.3 |
| **Total** | **$23.3** |

Note: Totals may not add to total due to rounding.

### 3.2.2 LAND AND RIGHT-OF-WAY EASEMENTS

Land value is comprised of the value of land owned in fee by Alliant and used for the purposes of the distribution system, as well as the value of distribution easements acquired by Alliant and used for the network on Decorah. At this time, information is not readily available to estimate the value of land and right-of-way easements in Decorah. Therefore, the cost of acquiring these assets has been omitted from Concentric's feasibility study. Assuming the City elected municipalization, it would be necessary to determine the value of these assets and include this in the acquisition cost. Excluding these assets is a conservative assumption for the purposes of determining the financial feasibility of a municipalization of the electric utility assets in Decorah.

### 3.2.3 SYSTEM SEPARATION COSTS

System separation costs are the costs that are incurred to physically separate the municipal system from Alliant's integrated transmission and distribution system network. The issue of municipal utility boundaries was addressed by the IUB in Docket Nos. SPU-06-05, 06, 07, 08, 10. In that decision, the IUB determined that there were three principles necessary to be considered in the evaluation of the municipal boundaries:

- Absent a compelling reason, it is unreasonable to exclude parts of the city from the municipal utility boundaries.[14]
- Unreasonable duplication of facilities should be avoided.
- The ultimate test in determining service area boundaries in municipalization cases is one of reasonableness, taking into consideration engineering, efficiency, and other factors.

There are two primary approaches to addressing system reintegration: primary metering and physical separation of the Decorah system from the integrated Alliant distribution system. Primary metering is generally viewed as the most efficient reintegration plan from a cost perspective. However, there are risks to both utilities based on the continued interconnectedness of the distribution networks.

While there are limited municipalization cases to review in Iowa, the IUB has not mandated the use of primary metering in either of the two cases that have occurred in the last 25 years. In Sheldon, the IUB declined to use primary metering because it had not been used elsewhere against the incumbent utility's wish and because there was hostility between the incumbent and prospective municipal utility. In the Five Cities case, the IUB elected not to adopt primary metering because the Cities had not developed operational plans that would provide confidence that primary metering was sufficient. As a result, the IUB required that boundaries would be established at the Cities' limits and duplication in facilities, such as substations, were appropriate. [15]

Based on the IUB precedent, unless Decorah developed a detailed operational plan, it would be reasonable to assume that the asset boundaries would be established at the City limits. This would require system separation and reintegration costs for Alliant's system, as well as some additional costs to serve the customers outside the Decorah City limits. These costs are included in the transaction costs of acquiring the distribution system in the Feasibility Study. As shown in Figure 3, these costs are estimated to be $11.0 million.

14 The IUB affirmed the conclusion reached in the Sheldon decision on this issue (p. 13).
15 2008 WL 2782513 (Iowa U.B.), 266 P.U.R.4th 447, p. 5.

**Figure 3: Estimated Separation and Reintegration Costs**

| Description | 2021 ($million) |
|---|---|
| New 2 - transformer sub 69 kV to 24.9 kV | $5.5 |
| Cost to serve existing rural customers, including step-tie XFMRs | $5.5 |
| **Total** | $11.0 |

### 3.2.4 SEVERANCE COSTS

Severance costs are the costs of assets that were built or acquired by Alliant to serve Decorah customers, but which will not be acquired by the new municipal electric utility. These costs are typically referred to in the electric industry as "stranded costs," and could include contract fees and the remaining undepreciated value of Alliant's "stranded" generation and distribution assets.

Actual severance costs for Decorah would need to be established in the condemnation proceeding, based on a detailed review of Alliant's inventory of assets associated with service to Decorah, and the damage to these assets attributable to the taking that has not already been accounted for in the valuation of distribution assets discussed in Section 3.2.1.

### 3.2.5 GOING CONCERN VALUE

Going Concern value is considered in the determination of just compensation under The Iowa Code. Going Concern represents the incremental value attributable to the fact that the distribution assets that are the subject of a condemnation are not just a collection of physical assets, but together comprise a business unit that is complete, functional, and can be run as a business unit on day one of the acquisition. This value is derived from all the elements that contribute to the complete operating business segment, including the establishment of a customer base, records, maps, and the time and cost of building the business.

The estimate of Going Concern value is typically based on an income capitalization methodology. Its simplest form, direct capitalization, assumes that there is some stabilized annual income that can be expected from the business over time. The expected annual income of the enterprise is divided by a discount rate to arrive at an estimate of the total value of the business. The Going Concern component is calculated as the value of the business less the value of the physical and tangible assets that are used to generate the income. However, this methodology usually produces a Going Concern value of hundreds of millions of dollars. Rather than relying on an income capitalization methodology, Going Concern value in the municipalization context is often based on annual revenue from the Going Concern multiplied by a factor that ranges from 0.5 to 5 times the revenue of the business.[16]

For the Base Case, Concentric applied the lower end of this range (0.5), estimating Going Concern, and arrived at a preliminary estimated Going Concern value of approximately $4.4 million. In the Lower Bound Scenario, Concentric relied on Going Concern costs that were estimated at 10 percent of the RCNLD of the assets ($2.4 million); the Upper Bound Scenario calculates the Going Concern at 30 percent of the RCNLD of the assets ($9.5 million). A full and thorough analysis of Going Concern damages could produce a significantly higher number.

#### 3.2.7 SUMMARY OF ACQUISITION COSTS

As shown in Figure 4, Concentric estimates the acquisition costs at $38.7 million, based on a transaction closing in 2021. The valuation summarized below is a preliminary estimate that can only be refined after a complete system inventory is conducted.

**Figure 4: Preliminary Estimate of Acquisition Costs in 2021**[17]

| Asset Category | 2021 ($million) |
|---|---|
| Distribution Assets | $23.3 |
| Separation Costs | $11.0 |
| Severance Costs | $0.0 |
| Going Concern | $4.4 |
| **Total** | $38.7 |

### 3.3 DECORAH TRANSACTION COSTS

The City will incur legal, consulting, and financing costs to pursue the condemnation process and close the transaction. Legal and consulting fees have been as high as $10 million depending on the length of the proceeding. The legal process for establishing the acquisition price of the system can be a lengthy process that involves several legal and regulatory authorities, particularly if the outcome is determined through condemnation rather than negotiation. As shown in Figure 5, the transaction costs estimated in the Base Case are conservative.

16 A well-respected legal treatise, *Nichols on Eminent Domain* (3rd Edition) notes that, "…in the 'fair-value' era [courts] regularly valued the going concern element as an added percentage of the cost of reproduction of the physical assets (between 7.5% and 25%)."

17 The estimates for separation costs reflect the low end of a range in this figure.

**Figure 5: Transaction Costs**

| Transaction Costs | 2021 ($million) |
|---|---|
| Legal/Consulting Costs | $2.2 |
| Flotation Costs | $0.7 |
| **Total** | $2.9 |

Concentric has estimated that financing or underwriting fees will be approximately $0.7 million associated with the taxable debt to fund the acquisition of the assets and the tax-exempt debt used to fund transaction fees, startup costs, acquisition costs, working capital, and an initial debt issuance to fund the first few years of capital expenditures.

### 3.4 STARTUP COSTS

The City will also incur certain one-time startup costs that are necessary to operate the newly formed municipal electric utility. Figure 6 summarizes the Base Case estimated startup costs.

**Figure 6: Startup Costs**

| Startup Costs | 2021 ($million) |
|---|---|
| Inventory @ 3% of Total | $0.5 |
| Operations Startup Costs | $1.1 |
| Power Supply Startup Costs | $1.1 |
| Initial Capital Expenditure Fund for First 4 Years | $3.7 |
| Initial Debt Service Reserve | $1.7 |
| Working Capital | $1.4 |
| **Total** | $9.5 |

Startup costs include new systems, inventory, and machinery that will be necessary to operate and maintain the distribution system, manage customer relationships, provide detailed billing of the electric service, and provide financial reporting. Those costs are estimated at $2.7 million. In addition, the City will need to establish a debt service reserve fund roughly equivalent to one year of interest and principal estimated to be $1.7 million. Concentric relied on 45 days of working capital, estimated at $1.2 million in the first year, for the Base Case. Working capital is included in total debt service. Finally, the City will need to have access to capital to make replacement capital, prudently assumed to be four years of investment or $3.7 million.[18] Based on these estimates, the total startup costs are estimated to be approximately $9.5 million.

18 The Feasibility Study assumes that the City has sufficient assets and capacity and will not need to acquire additional real estate or buildings for office space, operations and service center.

### 3.5 TOTAL COSTS TO DECORAH—BASE CASE

Figure 7 presents a summary of the three categories of costs to be incurred by the City: acquisition, transaction, and startup. Concentric has assumed that the acquisition costs will be financed with taxable debt; transaction and startup costs will be financed with tax-exempt debt. The total costs in the Base Case are $51.5 million. Scenario analyses are presented in Section 6.

**Figure 7: Preliminary Estimate of Decorah Costs—2021 Transition**

| **Cost Category** | **2021 ($million)** |
|---|---|
| Acquisition Costs | $38.7 |
| Transaction Costs | $2.9 |
| Startup Costs | $9.5 |
| **Total** | $51.1 |

# SECTION 4:
# DECORAH COSTS TO OPERATE AN ELECTRIC UTILITY

## 4.1 INTRODUCTION

The going forward costs of operating the utility is referred to as the "cost of service" or "revenue requirement," including debt service, and stipulates that revenues must be sufficient for the City to maintain an investment grade credit rating related to its utility debt. This analysis assumes that the City will generally replicate the services currently provided by Alliant. Financial feasibility in this context implies that the City will be able to raise the capital necessary to acquire Alliant's assets and fund the startup operations and, once operational, generate sufficient revenue to maintain investment grade credit ratings from electricity rates that Decorah customers are willing to pay. The Base Case analysis is performed over the 20-year period of 2021–2040, assuming a 2020 acquisition. This section presents Concentric's assumptions used to perform the financial feasibility analysis, including operating costs of the electric distribution system as a newly formed municipal electric utility.

Concentric's Base Case reflects the expected operation of the existing electric distribution system, assuming baseline forecasts of customer growth, operations and maintenance costs, and capital replacement. Additional cost scenarios are also presented in Section 6.

## 4.2 DECORAH ELECTRIC UTILITY REVENUE REQUIREMENT

The typical annual operating expenses for an electric utility included in the revenue requirement are:

- Debt Service: principal and interest payments on the debt incurred to fund the acquisition costs, as well as investments required to replace assets that have failed and assets that are beyond their economic and functional life and capital investment to fund system expanstion and upgrades.
- Purchased Power: cost for purchasing power to serve Decorah customers.
- Transmission Expenses: cost of transporting power across the transmission system to the expected separation point between Alliant and Decorah.
- Operations and Maintenance Expenses: cost to operate and maintain the distribution system.
- Administrative and General Expenses: cost of administrative and management services for the electric utility operations.
- Customer Service: cost of billing and customer information systems and employee salaries required to issue bills, collect revenues, operate online and mobile tools for billing, outages and other services, and operate a call center to respond to customer requests.
- Customer Program Expenses: Incremental costs of providing energy efficiency, energy assistance, and other customer programs.
- Taxes: Property taxes and any other taxes that are collected through utility rates.

Each of these cost categories is described in the remainder of this section.

Many of these costs are affected by the number of customers served by the utility, their total energy usage, and system peak demand requirements. Concentric reviewed United States Census data for Decorah, IA for the period from 2010-2015. This data indicates that population has declined less than one half of one percent over that period. Based on the Census data, Concentric assumed that the starting number of customers (3,673) would remain flat over the projection period. Concentric assumed that peak demand would grow at the same rate and that the systemwide load factor and monthly usage patterns would remain unchanged during the forecast period.

### 4.3 DEBT SERVICE: PRINCIPAL AND FINANCING COSTS

Concentric's Base Case assumes an aggressive timeline, where the City begins operation in 2021. This schedule reflects less than three years for the completion of the process and the transition to City operation and is considered aggressive, given the likelihood that a condemnation process will be required to establish the level of just compensation.

As presented in Section 3, the City will need to raise capital sufficient to fund acquisition costs ($38.7 million) and related transaction costs ($2.9 million), and finance transaction and startup costs ($9.5 million).

Due to a federal law prohibiting the use of tax-exempt debt to finance the acquisition of utility property (i.e., $23.3 million of the acquisition costs) from an investor-owned utility, the City will be required to finance the acquisition with taxable revenue bonds. Other costs, including startup, inventory, working capital, and legal and consulting fees can be financed with tax-exempt debt. Concentric assumes that both tax-exempt debt and revenue bonds would be issued for a term of 30 years.[19]

Annual debt service costs will be determined by the amount to be financed and the relevant interest rate. Concentric based its interest rate for tax-exempt debt on the Bloomberg value curve 20-year debt costs for State of Iowa municipalities, with consideration given to a historical review of tax-exempt bond issuances, and the expectation that interests will rise between now and 2020. Over the past year, the Federal Reserve has established a policy of increasing the Federal Funds rate and in October 2017 began unwinding its balance sheet, reducing the amount of U.S. Treasury bonds held on its balance sheet. The expectation is that the combination of these two normalization policies will result in rising interest rates going forward. Therefore, it is reasonable to assume that the coupon rate on tax-exempt debt would be 100 basis points higher than recent issuances to reflect a higher interest rate environment at the time when an acquisition would require financing. Based on these considerations, Concentric assumed a tax-exempt interest rate of 4.5 percent.

To establish the interest rate differential (spread) between taxable revenue bonds and tax-exempt bonds, Concentric reviewed the interest rates for 30-year debt issued by municipalities in Iowa over the last 10 years. Comparing bond rates issued by the same utility for the same duration normalizes the results for differences in interest rates due to varying borrowing lengths and utility credit ratings. This analysis indicates that the spread between taxable and tax-exempt debt for issuances of similar term and credit rating is between 150-200 basis points. Concentric's Base Case assumption for financing costs relies on the low end of the range, applying a 150-basis-point spread to the tax-exempt interest rate of 4.5 percent to establish the taxable debt rate of 6.0 percent.

Underwriting fees and other issuance expenses or "flotation costs" are assumed to be 1.5 percent of the borrowed amount, which is consistent with industry practice. These costs, which total $0.7 million, comprise the transaction costs category.

In addition to financing the initial acquisition and startup costs, the City will need to continue to reinvest in the system to replace aging infrastructure and to maintain the reliability of the system. Concentric assumed that the capital replacement program would be based on the depreciation rate of the assets. Typically, the determination of the depreciation rate of the system requires a statistical study of the existing infrastructure age. Depreciation of distribution assets is usually in the range of 3.0 percent to 4.0 percent per year. Concentric has assumed a capital replacement rate of 4.0 percent and applied that to the average annual rate base of the new municipal electric utility, taking into consideration both the RCNLD of the existing system assets and additional investments made over the study period. Capital replacement is assumed to be debt-funded through incremental debt issuances every four years at tax-exempt rates. To the extent that interest rates continued to escalate and tax-exempt debt costs increase over the study period, incremental debt issuances would need to be financed at higher rates.

[19] Shorter financing terms could be achieved and may provide for lower borrowing costs; however, the annual debt service would be higher to reflect the prepayment of principal over fewer years.

### 4.4 PURCHASED POWER SUPPLY

Replacement purchased power is the largest component of the revenue requirement for any electric utility. Based on data provided by Alliant, Concentric estimates that the peak load for Decorah is 18 MW. In order to estimate the replacement capacity and energy costs for Decorah, Concentric relied on an all-in delivered energy and capacity price projection developed by Wood Mackenzie. Alliant has relied on Wood Mackenzie forecasts in many filings that have been approved by the IUB. Concentric's Base Case also assumes flat load. The figure below shows annual replacement power costs assumed.

**Figure 8: Replacement Power Supply Costs**

| Year | MISO Iowa ($/kWh) Nominal | Replacement Power and Energy Cost ($ million) |
|---|---|---|
| 2021 | $0.039 | $3.21 |
| 2022 | $0.044 | $3.62 |
| 2023 | $0.046 | $3.73 |
| 2024 | $0.047 | $3.87 |
| 2025 | $0.049 | $3.98 |
| 2026 | $0.050 | $4.08 |
| 2027 | $0.052 | $4.23 |
| 2028 | $0.054 | $4.40 |
| 2029 | $0.056 | $4.55 |
| 2030 | $0.058 | $4.71 |
| 2031 | $0.059 | $4.83 |
| 2032 | $0.061 | $4.98 |
| 2033 | $0.062 | $5.10 |
| 2034 | $0.064 | $5.19 |
| 2035 | $0.065 | $5.34 |
| 2036 | $0.067 | $5.48 |
| 2037 | $0.069 | $5.64 |
| 2038 | $0.071 | $5.81 |
| 2039 | $0.072 | $5.88 |
| 2040 | $0.074 | $6.06 |

Source: Wood Mackenzie

### 4.5 TRANSMISSION EXPENSE

Decorah will need to reserve and pay for transmission service to transport power across the ITC system to Decorah to serve its customers. To estimate the transmission expense on the ITC transmission system, Concentric relied on Alliant's total 2018 transmission expenses as shown in Figure 9.

**Figure 9: ITC Transmission Services and Rates**

| Transmission Schedule | 2018 Alliant Expense ($) |
|---|---|
| Schedule 1: Scheduling/Dispatch | $6,226,228 |
| Schedule 2: Voltage/Reactive | $4,379,371 |
| Schedule 9: Network Service | $312,014,610 |
| Schedule 10: FERC Admin | $1,262,295 |
| Schedule 26: Network Upgrade | $23,975,936 |
| Schedule 26A: MVP | $28,082,235 |
| **Total** | $375,940,675 |

Concentric applied the load ratio for Decorah to the remainder of the system to establish the 2018 base transmission expense as shown in Figure 10, the resulting annual expense assumed in 2018 is $2.17 million.

**Figure 10: Estimated Decorah Transmission Costs**

| Decorah Costs | 2018 ($million) |
|---|---|
| Alliant Transmission Cost | $375.94 |
| Decorah Share of Alliant Transmission (%) | 0.58% |
| Decorah Transmission Cost | $2.17 |

ITC transmission expenses were escalated based the expectation of rate increases. ITC transmission rate increases were assumed to be 3 percent every two years.

### 4.6 OPERATIONS AND MAINTENANCE, CUSTOMER ACCOUNTS, AND ADMINISTRATION AND GENERAL EXPENSES

Concentric reviewed reported financial statements and budgets for several municipal utilities, including 38 Iowa municipal utilities with at least 1,000 customers. Concentric assessed an average of two financial reports per utility.

1) Algona, City of (2013, 2014)
2) Ames, City of (2015, 2016)
3) Atlantic Municipal Utilities (2010, 2011)
4) Bloomfield, City of (2015, 2016)
5) Cedar Falls Utilities (2013, 2014, 2015, 2016)
6) Denison, City of (2015, 2016)
7) Estherville, City of (2012, 2016)
8) Forest City (2014, 2015, 2016)
9) Greenfield, City of (2015, 2016)
10) Grundy Center Municipal Light and Power Department (2015, 2016)
11) Harlan, City of (2011, 2016)
12) Hawarden, City of (2016)

13) Independence, City of (2012, 2013, 2014, 2015)
14) Indianola Municipal Utilities (2014, 2015)
15) Lake Mills City (2016)
16) Lamoni, City of (2005, 2016)
17) Maquoketa, City of (2015)
18) Milford, City of (2016)
19) Mount Pleasant, City of (2014)
20) Muscatine Power and Water (2014, 2015, 2016)
21) New Hampton, City of (2012, 2013, 2014, 2015, 2016)
22) Onawa, City of (2016)
23) Orange City (2015, 2016)
24) Osage, City of (2014, 2015)
25) Pella, City of (2014, 2015, 2016)
26) Rock Rapids Municipal Utility (2016)
27) Sergeant Bluff, City of (2016)
28) Sibley, City of (2015, 2016)
29) Sioux Center, City of (2011, 2015, 2016)
30) Spencer, City of (2015, 2016)
31) Story City (2015, 2016)
32) Tipton, City of (2015, 2016)
33) Vinton, City of (2016)
34) Waverly Communications Utility (2014, 2015, 2016)
35) Webster City (2014)
36) West Liberty, City of (2016)
37) Wilton, City of (2015, 2016)
38) Winterset, City of (2015)

The municipal utilities assessed were used to create a benchmark group estimate of the expected expense per customer for a municipal electric utility in Decorah. The benchmark data was used to establish the first-year cost estimates. Specifically, Concentric sought:

- Non-fuel Operations and Maintenance Expense
- Customer Accounting Expense
- Administrative and General Expense

The Base Case assumes the average value of the benchmarks for each of the expense categories below. The Upper Bound and Lower Bound scenarios are based on the range of benchmark values, described in Section 6.

**Figure 11: Benchmarking Metrics Operating Expenses**

| Expense Item | Benchmark $/customer ($2021) | Projected Expenses ($million) |
|---|---|---|
| Operations and Maintenance | $340 | $1.25 |
| Customer Accounting | $61 | $0.22 |
| Administrative and General | $223 | $0.82 |
| **Totals** | $623 | $2.29 |

Note: Analysis assumes 3,673 Alliant electric customers in Decorah in 2017. Historical US Census data indicates that from 2010 through 2015 the population in Decorah has declined less than half of one percent. Based on this data, the Base Case assumes that customers are held constant over the study period.

### 4.7 ENERGY EFFICIENCY PROGRAM EXPENSES

Decorah, as a stand-alone utility, will not be required to provide energy efficiency programs to its customers. However, Decorah residential and business customers have taken advantage of Alliant's energy efficiency programs. As shown in Figure 12, participating residential and business customers in Decorah have received rebates and other investments through Alliant. This figure represents the out-of-pocket payments to customers and program costs and does not include any allocation of the administrative costs incurred by Alliant that are incurred to design, market, administer, and report the results of these programs.

As shown in the figure below, Alliant spends an average of $364,980 annually on energy efficiency programs that benefit Decorah customers, including roughly $292,600 on energy efficiency rebates for residential and business customers. In addition, over the past two years, Alliant has also funded free direct installation of electric measure (e.g., LEDs, power strips) for 58 free home energy assessments for residential customers, costing a total of $8,334, or annualized over 5 years of $1,667. Alliant's C&I customers in Decorah also benefit from Alliant's funding of energy assessments, engineering and design services, and a dedicated account management team. Between 2012 and 2016, Alliant conducted the following series without cost to the customers:

- Six C&I free customer energy audits, costing a total of $24,850;
- Ten mid-sized free audits to customers, and costing a total of $11,459;
- 56 free small business energy audits, costing Alliant $22,440. These C&I services total roughly $58,749, or an annual average over 5 years of $11,750;
- Alliant provided $180,289 in contractor incentives for energy efficiency projects associated with the Small Business Program over the period, or an annual average of $36,058;
- Between 2012-2016, Alliant funded $9,000 to plant 109 trees in the community, with an additional $75,525 to plant 420 trees for residential customers. The tree plant program costs to Alliant totaled $84,525, or an annual average of $16,905; and
- Alliant also provided low income energy assistance EE programs of $6,000 annually over the period, or $30,000 in total. The table below shows these program costs.

**Figure 12: Decorah Customer Participation in Alliant's Energy Efficiency Programs**

| EE Program | 2012 | 2013 | 2014 | 2015 | 2016 | Annual Average |
|---|---|---|---|---|---|---|
| Energy Efficiency Rebates | $292,600 | $416,600 | $1,454,500 | $135,800 | $64,400 | $292,600 |
| Free Direct Installation Measures | - | - | - | $4,167 | $4,167 | $1,667 |
| C&I Audits | $11,750 | $11,750 | $11,750 | $11,750 | $11,750 | $11,750 |
| Contractor Incentives | $36,058 | $36,058 | $36,058 | $36,058 | $36,058 | $36,058 |
| Community Tree Planting | $16,905 | $16,905 | $16,905 | $16,905 | $16,905 | $16,905 |
| Low Income Energy Assistance | $6,000 | $6,000 | $6,000 | $6,000 | $6,000 | $6,000 |
| **Totals** | $363,313 | $487,313 | $1,525,213 | $210,680 | $139,280 | $364,980 |

Note: Concentric relied on the median, rather than annual average, for the rebate annual average, given the large rebates from 2014.

While there is no obligation for the City to continue to offer energy efficiency programs through a municipal electric utility, in the feasibility study Base Case Concentric assumes that these programs will continue at the minimum funding levels seen over the past five years.

### 4.8 LOW-INCOME ASSISTANCE PROGRAM EXPENSES

Concentric assumed that a newly formed municipal electric utility would continue to provide the same level of support for low-income customers as would be provided if service was provided by Alliant. Over the period from 2010 through 2016, Alliant has provided a total of $188,950 of low-income assistance to customers in Decorah, an annual average expense of $30,750 (2017$). In the Base Case, Concentric relied on this annual program contribution estimate and escalated the cost at the rate of inflation for the study period.

### 4.9 PROPERTY TAXES

As a private corporation, Alliant pays property taxes on the assessed value of its assets located in Decorah. These taxes are included as an expense in Alliant's revenue requirements and are reflected in the calculation of electricity rates paid by all Alliant customers. Property taxes benefit the City. If the City were to own and operate the electric utility, Alliant would no longer pay property taxes and these revenues would no longer be available to fund services provided by the City. In the case of Decorah, the City would need to find an alternative source of funds (approximately $75,000) to maintain the current funding of City services. In all cases, Concentric's analysis assumes that a Decorah electric utility would replace the funding for local services currently funded through the Alliant property taxes. In the Feasibility Study, Concentric estimated the revenue from property taxes in each year based on the depreciated value of the asset purchase and incremental investments made to maintain the system.

### 4.10 PROJECTED REVENUE REQUIREMENT FOR DECORAH MUNICIPAL ELECTRIC SERVICE

Figure 13 summarizes the Base Case projected revenue requirement for electric utility service for the forecast period.

**Figure 13: Decorah Projected Revenue Requirement**

| | 2021 | 2026 | 2031 | 2036 | 2041 |
|---|---|---|---|---|---|
| | ($000) | | | | |
| **Debt Service (Principal & Interest)** | $ 3,584 | $ 3,807 | $ 4,118 | $ 4,464 | $ 5,321 |
| **Power Supply & Delivery** | | | | | |
| Purchased Power | $ 3,214 | $ 4,084 | $ 4,831 | $ 5,484 | $ 6,215 |
| BPA Transmission Expense | $ 2,302 | $ 2,443 | $ 2,669 | $ 2,832 | $ 3,094 |
| O&M Expenses | | | | | |
| Operations and Maintenance Expense | $ 1,247 | $ 1,411 | $ 1,597 | $ 1,807 | $ 2,044 |
| Customer Accounting | $ 223 | $ 253 | $ 286 | $ 323 | $ 366 |
| Administrative & General | $ 819 | $ 927 | $ 1,049 | $ 1,186 | $ 1,342 |
| Energy Assistance Program | $ 3 | $ 4 | $ 4 | $ 5 | $ 6 |
| Energy Efficiency | $ 403 | $ 456 | $ 516 | $ 583 | $ 660 |
| **Total Decorah Municipal Electric Utility Cost of Service** | $ 11,796 | $ 13,384 | $ 15,069 | $ 16,684 | $ 19,049 |
| Replacement Property Taxes | $ 83 | $ 94 | $ 106 | $ 120 | $ 136 |
| **Total Decorah Cost** | $ 11,879 | $ 13,478 | $ 15,175 | $ 16,804 | $ 19,184 |

## SECTION 5:
## FORECAST OF ALLIANT REVENUE REQUIREMENTS AND RATES

The financial feasibility assessment of the Decorah municipal option depends critically on the rates that Decorah customers can expect to pay, should Alliant continue to serve Decorah. This section summarizes the assumptions used to project the cost of service if Decorah were to continue to receive service from Alliant.

Changes to Alliant's retail rates are approved by the IUB and occur primarily through rate cases that update the calculations required to establish rates to reflect changes in the cost of service, as well as changes in the number of customers and energy demand by customer class. Changes to the cost of service determine the revenue requirements that rates will be designed to collect; changes to the number of customers and energy demand will affect the allocation of these revenue requirements to each class of customers (e.g., residential, commercial, industrial) and the calculation of the specific rates that appear on customer bills. Alliant will also change the total rate for electricity by petitioning the IUB to change rates to reflect a significant change in the cost of power supply.

For purposes of this Preliminary Feasibility Study, Concentric has estimated the periodic changes through rate cases, beginning with the ongoing Alliant rate case that was filed in April 2017. The ongoing rate case requests a 11.6 percent increase in rates in Docket D-RPU-2017-0001. Based on Alliant's rate cases over the past 20 years, Concentric anticipates that the rate case will go into effect in February 2018. Of the four completed rate cases over the past 20 years, the authorized rate as a proportion of rate requested averaged 65.7 percent. For the purpose of this Preliminary Feasibility Study, Concentric assumed the 65.7 percent average proportion for the pending rate case, indicating an anticipated authorized rate increase of 6.4 percent.[20] The table below shows the pending and completed Alliant rate cases over the past 20 years, which were used to project out the revenue requirement increases over the forecasted 20-year study period.

**Figure 14: Selected Alliant Electric Rate Cases**

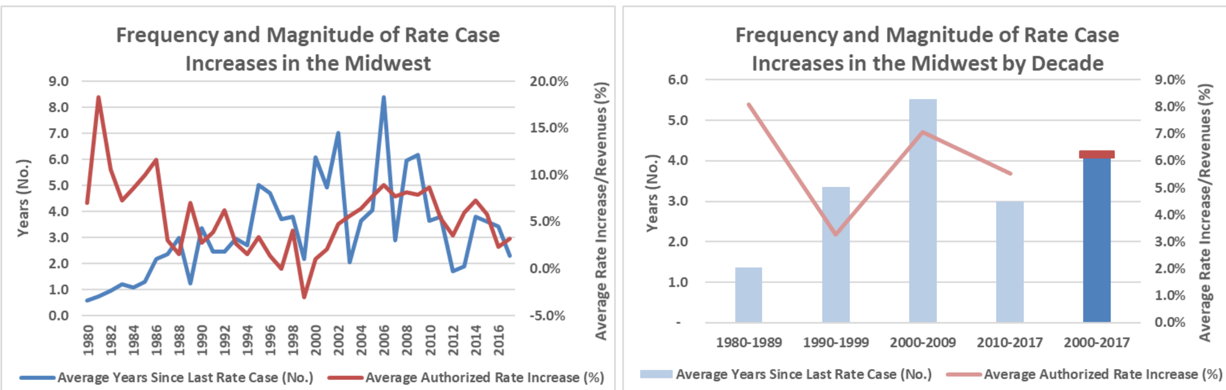
| Docket No. | Status | Initial Filing Date | Rate Case Completion Date | Rate Case Duration (Months) | Rate Base/ Revenue Requested Rate (%) | Rate Base/ Revenue Authorized Rate (%) | Authorized/ Requested Rate (%) |
|---|---|---|---|---|---|---|---|
| D-RPU-2017-0001 | Pending | 4/3/2017 | 2/3/2018 | 10[21] | 11.60 | 6.41[22] | 65.7%[23] |
| D-RPU-2010-0001 | Completed | 3/10/2010 | 12/15/2010 | 9 | 11.80 | 9.00 | 76.3% |
| D-RPU-2009-0002 | Completed | 3/17/2009 | 1/4/2010 | 9 | 9.90 | 8.20 | 82.8% |
| D-RPU-04-1 | Completed | 3/15/2004 | 12/14/2004 | 9 | 16.30 | 11.50 | 70.6% |
| D-RPU-02-3 | Completed | 3/29/2002 | 4/15/2003 | 12 | 8.70 | 2.90 | 33.3% |

*Source: SNL*

20 The IUB rarely approves the full amount of a requested utility rate increase.
21 Estimated based on the average (10 months) of the previous four cases.
22 Estimated based on the average proportion (65.7%) of the authorized rate as a share of required rate.
23 Estimated based on the average proportion of the previous four cases.

Concentric projected the revenue requirement increases for Alliant over the remainder of the 20-year study period by estimating the timing of future rate cases and the average expected increase for each rate case. The basis of those projections is a review of the history of Alliant rate cases over the past two decades, a period in which utilities have been experiencing slowing sales growth and continuing investment to replace aging infrastructure. In addition, Concentric analyzed rate case trends, in terms of both frequency and magnitude of rate cases in the Midwest. The analysis included 610 rate cases in the Midwest, including 451 cases with data on the magnitude of authorized rate changes.[24]

**Figure 15: Average Frequency and Magnitude of Rate Case Increases in the Midwest by Decade**

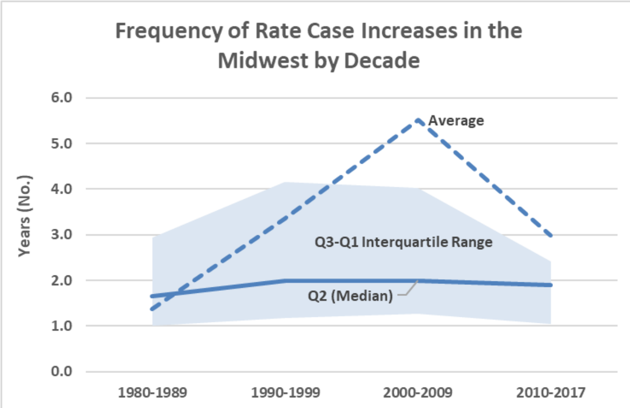


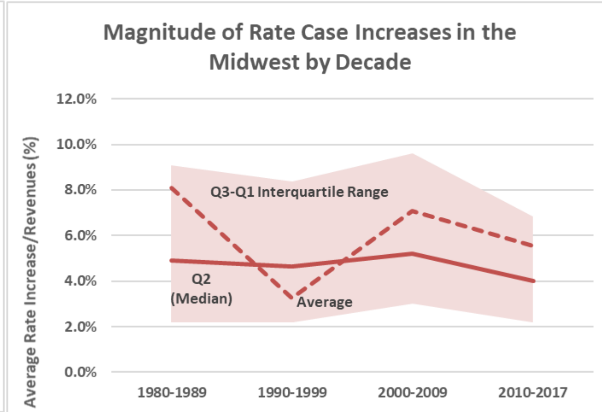

The figure below shows that the number of years between rate cases for the 2010-2017 period averages 3 years between cases, with rate increases averaging 5.5 percent (as a percent of revenue). During the 2010-2017, the median years between rate cases was about 2 years and a rate increase of 4 percent. The interquartile range[25] showed a range of between 1 and 2.4 years between rate cases, at an authorized rate increase of 2.2-6.9 percent.

24 Analysis includes the following states: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, North Dakota, Ohio, South Dakota, and Wisconsin.

25 The Q3-Q1 interquartile range is the range between the first and third quartiles, or variability in frequency and magnitude of rate cases between the top 25 percent and bottom 75 percent of all cases in the period.

**Figure 16: Range in Frequency and Magnitude of Rate Case Increases in the Midwest by Decade**




Note: The Q3-Q1 interquartile range is the range between the first and third quartiles, or variability in frequency and magnitude of rate cases between the top 25 percent and bottom 75 percent of all cases in the period. Q2 is the second quartile, or median.

As shown in Figure 16, comparing the 2010-2017 period to the prior decade (2000-2009), the magnitude of rate case increases decreased approximately 25 percent. The 2010-2017 period has been a period of significant capital investment that cannot be projected to continue in its entirety over the next 40-year period. Thus, for the Base Case analysis, Concentric assumed a rate case increase every third year with a 3 percent increase, based on median results for the 2010-2017, adjusted to reflect the trend of declining rate increases seen since 2000-2009. The Upper Bound Scenario assumes the same frequency of rate cases (every third year) and the first quartile rate increase of 2.20 percent rate. The Lower Bound Scenario also assumes every three years for rate cases and a magnitude of 4.00 percent (the median).

# SECTION 6: PRELIMINARY FEASIBILITY STUDY FINANCIAL RESULTS

## 6.1 INTRODUCTION

This section presents the quantifiable assessment of the two alternatives: municipalization and continuation of service to Decorah by Alliant. Concentric has also assessed certain nonquantifiable but important considerations in Section 7. The determination of net financial consequences to Decorah customers from the decision to form a municipal electric utility is assessed by a comparison of the revenue requirement that is projected for municipal operation of the electric utility to the electricity expenditures by Decorah customers under a continuation of service with Alliant.

The quantifiable impacts are addressed in this section through consideration of a "Base Case" and two scenarios that bound the results. The discussion in Sections 3 and 4 focus primarily on the reasoning for Base Case assumptions, although the discussion also identifies sources of variability and uncertainty, implying that an assessment of these uncertainties will provide useful insights. Each scenario, including the Base Case, represents an internally consistent and integrated set of key assumptions.

A major driver of financial results is the timing of a transition from Alliant to a City municipal electric utility. The uncertainty with respect to timing is attributable to the initiation and duration of a condemnation proceeding. As described in Section 2.4, a municipalization can take anywhere from 4 to 10 years. The total costs will increase as the duration is extended due to higher legal and consulting fees and continued escalation of both capital and operating costs. Concentric has assumed that the transition occurs in 2021 in the Base Case, 2020 in a scenario designed to arrive at a reasonable Lower Bound on costs, and 2024 in a scenario designed to determine a reasonable Upper Bound.

Additional insights are provided by testing the sensitivity of the Base Case results to a change in a single assumption. Scenario and sensitivity analyses combine to provide a more robust understanding of the potential financial feasibility of a municipal electric utility than is possible by limiting the assessment to a single Base Case.

## 6.2 BASE CASE RESULTS

Figure 17 compares the Base Case revenue requirement that is projected for a municipal electric utility beginning in 2021 to the Base Case projected revenue from Alliant's continued service to Decorah. As shown in that figure, the net present value of the comparison indicates that there would be a net financial loss of $26.3 million over a 20-year period from municipal ownership and operation of the electric utility as compared with a continuation of service with Alliant.

The Base Case also assumes:

- Replacement capital investment of 4.00 percent;

- An energy efficiency incentive factor of 100.00 percent, meaning that a Decorah municipal utility will match energy efficiency programs offered by Alliant;
- Operations and maintenance, customer accounting, and administrative and general costs of $623/customer, or $2.3 million in 2021;
- Cost of debt of 6.00 percent;
- Alliant rate case increase of 3.00 percent every third year starting in 2021 (after the 6.10 percent assumed rate increase in 2018); and
- Going Concern valuation of $4.4 million.

**Figure 17: Base Case: 2021 Transition**

| | 2021 | 2026 | 2031 | 2036 | 2041 | 2046 |
|---|---|---|---|---|---|---|
| | | | ($000) | | | |
| **IPL Est Rate Revenue** | $ 11,357 | $ 11,698 | $ 12,410 | $ 13,166 | $ 13,561 | $ 14,387 |
| **City of Decorah Municipal Electric Cost of Service** | | | | | | |
| **Debt Service (Principal & Interest)** | $ 3,584 | $ 3,807 | $ 4,118 | $ 4,464 | $ 5,321 | $ 5,489 |
| **Power Supply & Delivery** | | | | | | |
| Purchased Power and Capacity | $ 3,214 | $ 4,084 | $ 4,831 | $ 5,484 | $ 6,215 | $ 7,032 |
| ITC Transmission Expense | $ 2,302 | $ 2,443 | $ 2,669 | $ 2,832 | $ 3,094 | $ 3,283 |
| **O&M Expenses** | | | | | | |
| Operations and Maintenance Expense | $ 1,247 | $ 1,411 | $ 1,597 | $ 1,807 | $ 2,044 | $ 2,313 |
| Customer Accounting | $ 223 | $ 253 | $ 286 | $ 323 | $ 366 | $ 414 |
| Administrative & General | $ 819 | $ 927 | $ 1,049 | $ 1,186 | $ 1,342 | $ 1,519 |
| Energy Assistance Program | $ 3 | $ 4 | $ 4 | $ 5 | $ 6 | $ 6 |
| Energy Efficiency | $ 403 | $ 456 | $ 516 | $ 583 | $ 660 | $ 747 |
| **Total Decorah Municipal Cost of Service** | $ 11,796 | $ 13,384 | $ 15,069 | $ 16,684 | $ 19,049 | $ 20,802 |
| Replacement Property Taxes | $ 83 | $ 94 | $ 106 | $ 120 | $ 136 | $ 153 |
| **Total Decorah Cost** | $ 11,879 | $ 13,478 | $ 15,175 | $ 16,804 | $ 19,184 | $ 20,955 |
| City Estimated Savings $/Year | $ (522) | $ (1,780) | $ (2,765) | $ (3,638) | $ (5,624) | $ (6,569) |
| Net Present Value 10 Year Savings | $ (11,039) | | | | | |
| Net Present Value 20 Year Savings | $ (26,302) | | | | | |

As shown in Figure 17 the Decorah operating cost is greater than the Alliant operating cost in each year of the study. Debt service is approximately one-third of the operating cost in the initial years of the feasibility study. On a net present value basis, over 10 years, the incremental cost of municipal operation of the Decorah electric utility is $11.0 million and over 20 years the incremental cost escalates to $26.3 million.

### 6.3 SCENARIO ANALYSES

The Upper Bound Scenario, which includes assumptions that likely would result in higher costs related to a Decorah municipalization, assumes a delayed municipalization start date of 2024, which may increase transition costs. This scenario also assumes:

- Replacement capital investment of 4.50 percent;
- An energy efficiency incentive factor of 100.00 percent;
- Cost of debt of 6.50 percent;
- Operations and maintenance, customer accounting, and administrative and general costs of $932/customer, or $3.4 million in 2024;
- Alliant rate case increase of 2.20 percent every three years starting in 2021 (after the 6.10 percent assumed rate increase in 2018); and
- Going Concern valuation of $9.5 million.

The figure below indicates a net present financial loss of $30.2 million and $57.9 million over a 10-year and 20-year period, respectively, from municipal ownership and operation of the electric utility as compared with a continuation of service with Alliant.

**Figure 18: Upper Bound Scenario: 2024 Transition**

| | 2024 | 2026 | 2031 | 2036 | 2041 | 2046 |
|---|---|---|---|---|---|---|
| | ($000) | | | | | |
| **IPL Est Rate Revenue** | $ 11,517 | $11,517 | $12,029 | $12,564 | $ 12,840 | $ 13,412 |
| <u>City of Decorah Municipal Electric Cost of Service</u> | | | | | | |
| **Debt Service (Principal & Interest)** | $ 4,486 | $ 4,428 | $ 4,766 | $ 5,609 | $ 5,980 | $ 6,373 |
| **Power Supply & Delivery** | | | | | | |
| Purchased Power and Capacity | $ 3,866 | $ 4,084 | $ 4,831 | $ 5,484 | $ 6,215 | $ 7,032 |
| ITC Transmission Expense | $ 2,371 | $ 2,443 | $ 2,669 | $ 2,832 | $ 3,094 | $ 3,283 |
| **O&M Expenses** | | | | | | |
| Operations and Maintenance Expense | $ 1,906 | $ 2,003 | $ 2,266 | $ 2,564 | $ 2,901 | $ 3,282 |
| Customer Accounting | $ 252 | $ 265 | $ 300 | $ 339 | $ 384 | $ 434 |
| Administrative & General | $ 1,264 | $ 1,328 | $ 1,502 | $ 1,700 | $ 1,923 | $ 2,176 |
| Energy Assistance Program | $ 4 | $ 4 | $ 4 | $ 5 | $ 6 | $ 6 |
| Energy Efficiency | $ 434 | $ 456 | $ 516 | $ 583 | $ 660 | $ 747 |
| **Total Decorah Municipal Cost of Service** | $ 14,583 | $15,010 | $16,854 | $19,116 | $ 21,163 | $ 23,333 |
| Replacement Property Taxes | $ 89 | $ 94 | $ 106 | $ 120 | $ 136 | $ 153 |
| **Total Decorah Cost** | $ 14,673 | $15,104 | $16,960 | $19,236 | $ 21,298 | $ 23,486 |
| City Estimated Savings $/Year | $ (3,156) | $ (3,587) | $ (4,932) | $ (6,672) | $ (8,458) | $(10,075) |
| Net Present Value 10 Year Savings | $(30,188) | | | | | |
| Net Present Value 20 Year Savings | $(57,946) | | | | | |

The Lower Bound Scenario, which includes assumptions representing potentially lower costs of running a municipal utility, assumes an aggressive municipalization start date of 2020, which would allow the municipal utility to save on transition costs. This scenario also assumes:

- Replacement capital investment of 3.50 percent;
- An energy efficiency incentive factor of 50.00 percent, meaning that a Decorah municipal utility would have more conservative energy efficiency offerings;
- Cost of debt of 5.75 percent;
- Operations and maintenance, customer accounting, and administrative and general costs of $491/customer, or $1.8 million in 2020;
- Alliant rate case increase of 4.00 percent every third year starting in 2021 (after the 6.10 percent assumed rate increase in 2018); and
- Going Concern valuation of $2.4 million.

The figure below suggests a loss of $65,000 over a 10-year period, and a net present financial loss of $6.6 million over a 20-year period from municipal ownership and operation of the electric utility as compared with a continuation of service with Alliant.

**Figure 19: Lower Bound Scenario: 2020 Transition**

| | 2020 | 2021 | 2026 | 2031 | 2036 | 2041 | 2046 |
|---|---|---|---|---|---|---|---|
| | | | | ($000) | | | |
| **IPL Est Rate Revenue** | $11,026 | $ 11,467 | $11,926 | $12,899 | $13,952 | $ 14,510 | $ 15,694 |
| **City of Decorah Municipal Electric Cost of Service** | | | | | | | |
| **Debt Service (Principal & Interest)** | $ 3,209 | $ 3,170 | $ 3,411 | $ 3,680 | $ 4,343 | $ 4,640 | $ 4,957 |
| **Power Supply & Delivery** | | | | | | | |
| Purchased Power and Capacity | $ 2,456 | $ 3,214 | $ 4,084 | $ 4,831 | $ 5,484 | $ 6,215 | $ 7,032 |
| ITC Transmission Expense | $ 2,235 | $ 2,302 | $ 2,443 | $ 2,669 | $ 2,832 | $ 3,094 | $ 3,283 |
| **O&M Expenses** | | | | | | | |
| Operations and Maintenance Expense | $ 1,068 | $ 1,095 | $ 1,239 | $ 1,402 | $ 1,586 | $ 1,795 | $ 2,030 |
| Customer Accounting | $ 137 | $ 140 | $ 159 | $ 179 | $ 203 | $ 230 | $ 260 |
| Administrative & General | $ 599 | $ 614 | $ 695 | $ 786 | $ 889 | $ 1,006 | $ 1,138 |
| Energy Assistance Program | $ 3 | $ 3 | $ 4 | $ 4 | $ 5 | $ 6 | $ 6 |
| Energy Efficiency | $ 197 | $ 201 | $ 228 | $ 258 | $ 292 | $ 330 | $ 373 |
| **Total Decorah Municipal Cost of Service** | $ 9,905 | $ 10,741 | $12,262 | $13,810 | $15,634 | $ 17,316 | $ 19,080 |
| Replacement Property Taxes | $ 81 | $ 83 | $ 94 | $ 106 | $ 120 | $ 136 | $ 153 |
| **Total Decorah Cost** | $ 9,986 | $ 10,824 | $12,355 | $13,916 | $15,754 | $ 17,451 | $ 19,234 |
| City Estimated Savings $/Year | $ 1,040 | $ 643 | $ (429) | $ (1,017) | $ (1,802) | $ (2,942) | $ (3,540) |
| Net Present Value 10 Year Savings | $ (65) | | | | | | |
| Net Present Value 20 Year Savings | $ (6,560) | | | | | | |

## 6.4 SENSITIVITY ANALYSES

The figure below shows the impact of various sensitivities on a 10-year NPV. The largest gain would be a decrease in O&M, customer accounting, and A&G expenses to $504/customer (2021$), resulting in a 10-year NPV loss of $7.4 million, whereas the largest loss ($18.3 million) results in an increase in those expenses to $865/customer (2021$). Given the penetration rate of Net Energy Metering ("NEM") in Decorah, relative to Alliant's overall service territory, Concentric also ran a sensitivity on an increase in NEM, which is described in the next subsection.

**Figure 20: Base Case Sensitivities**

| | 2021 | 2026 | 2031 | 10-YR NPV |
|---|---|---|---|---|
| | ------------ ($000) --------- | | | |
| Base Case City Estimated Savings | ($522) | ($1,075) | ($2,765) | ($11,039) |
| | ----------- Change in Values --------- | | | |
| Assumption 1: Capital Replacement Costs | | | | |
| Increase to 4.50% | ($618) | ($1,164) | ($2,922) | ($11,879) |
| Decrease to 3.50% | ($426) | ($985) | ($2,609) | ($10,199) |
| Assumption 2: O&M, Customer Accounting, A&G Costs | | | | |
| Increase to $865/customer (2021$) | ($1,414) | ($2,036) | ($3,910) | ($18,316) |
| Decrease to $504/customer (2021$) | ($80) | ($598) | ($2,198) | ($7,432) |
| Assumption 3: Cost of Debt | | | | |
| Increase to 6.50% | ($616) | ($1,168) | ($2,859) | ($11,398) |
| Decrease to 5.75% | ($476) | ($1,028) | ($2,719) | ($10,858) |
| Assumption 4: Rate Increase | | | | |
| 2.20% every 3 years | ($580) | ($1,194) | ($3,016) | ($11,947) |
| 4.00% every 3 years | ($450) | ($924) | ($2,444) | ($9,889) |
| Assumption 5: Load Reduction due to NEM | | | | |
| Decrease 0.50% annually (years 1-10), 0.25% (years 11-20) | ($503) | ($1,055) | ($2,755) | ($10,751) |

### 6.4.1 NET ENERGY METERING

Decorah's residents have been aggressive in taking advantage of NEM, with NEM customers comprising less than 1 percent of Alliant's customer base but would make up 4 percent of a Decorah municipalization customer base.

**Figure 21: Alliant versus Decorah NEM Concentration Rates**

| Jurisdiction | Alliant NEM Projects (No.) | Customer Base (No.) | NEM Concentration (%) |
|---|---|---|---|
| All Alliant | 2,100 | 513,234 | 0.5% |
| Decorah | 158 | 3,673 | 4.3% |

Figure 22 below shows the solar output additions below 10 kW by year in Decorah, and provides an estimate for the proportion of residential load for each year in which load is available The proportion of residential solar projects as a share of residential load increased dramatically over the period, a trend expected to continue over the foreseeable future.

**Figure 22: Estimated Decorah Solar Project Output**

| Year | Solar Output (kW) | Estimated Residential Solar (kW) | Cumulative Estimated Residential Solar (kW) | Estimated Residential Solar load (kWh) | % Residential Solar Load Growth | % Residential Load |
|---|---|---|---|---|---|---|
| 2007 | 2 | 2 | 2 | 3,504 | | |
| 2008 | 0 | 0 | 2 | 3,504 | 0% | N/A |
| 2009 | 0 | 0 | 2 | 3,504 | 0% | N/A |
| 2010 | 0 | 0 | 2 | 3,504 | 0% | N/A |
| 2011 | 12 | 12 | 14 | 24,528 | 600% | N/A |
| 2012 | 392 | 47 | 61 | 106,872 | 336% | 0.5% |
| 2013 | 392 | 158 | 219 | 383,688 | 259% | 1.6% |
| 2014 | 597 | 243 | 462 | 809,424 | 111% | 3.6% |
| 2015 | 763 | 36 | 498 | 872,496 | 8% | 4.2% |
| 2016 | 271 | 61 | 559 | 979,018 | 12% | 4.5% |
| 2017 | 0 | 0 | 559 | 979,018 | N/A | N/A |

Note: Concentric assumed that all Alliant solar projects below 10 kW as residential solar. Concentric then applied a 20% capacity factor on the kW systems to derive an estimate for annual generation by these solar facilities.

Under Alliant, NEM customer costs are spread over the entire customer base, diluting per-customer NEM impacts. Current NEM customers in Decorah benefit from Alliant's socialized cost structure, with NEM costs allocated across Alliant's large service territory. NEM reduces the costs a utility recovers in the short term, as NEM customers generate at least a portion of their own electricity, so the utility cannot charge them the full rate for that incremental load. Over time, such costs must be recovered from non-NEM customers, resulting in a "cost shift."

A Decorah municipalization would mean that the smaller customer base would fully absorb the larger than average costs of Decorah's NEM pursuits. Given the high NEM adoption rate in Decorah, relative to the Alliant average, this cost shift to non-NEM customers would be greater if Decorah were to municipalize.

With an average share of residential load nearing 3 percent over 2012-2016, this indicates that a continuation of this trend may worsen solvency for a Decorah municipal utility. While NEM customers will continue to contribute some fixed costs, the municipal utility will lose a large portion of its revenue stream associated with the incremental load moving to NEM, further limiting the utility's revenue source. Any additional NEM projects in Decorah would reduce the city's revenue, as NEM would reduce the city's revenues (due to a load reduction and any payments to NEM customers for load provided). The city may need to increase rates in order to recover costs, and with any additional NEM projects, which further depress the utility's revenue source, rates on non-NEM customers must increase further.

For the purpose of this analysis, in the Base Case, Concentric assumed that a Decorah municipal utility would compensate the NEM at the full retail value. Concentric's NEM sensitivity case assumed that residential load will decline 0.50 percent over the first 10 years (through 2030) and

0.25 percent thereafter, based on a continuation of recent "NEM" trends (discussed earlier) and the expectation that customers would engage in energy usage management efforts to minimize any electricity usage increases. As shown in Figure 20, the drop in a Decorah utility residential load due to NEM would result in a 10-year NPV loss of $10.8 million for a municipal utility.

# SECTION 7: OTHER FACTORS TO BE CONSIDERED

## 7.1 SERVICES TO BE PROVIDED BY ALLIANT AND DECORAH

An examination of Alliant's tariffs reveals the extent of services that are offered by Alliant. The City will need to determine whether to offer all of these services or a more limited set. Differences between the service menu and the costs of providing each service should be considered when comparing the two options.

Alliant offers two residential services (individual customer and master-metered), twenty commercial and industrial services (with variations by size, type of customer, and commitment to serve), ten outdoor lighting services, and several ratemaking adjustments that are associated with services such as low-income, energy conservation, and distributed energy production.

For example, the City will need to measure and bill net energy produced by customer-sited solar according to a published tariff. This will require a determination as to how much compensation is provided to customers that produce more electricity than they consume during a billing period. Alliant essentially compensates customers at the applicable retail rate for energy production that either reduces purchases from the utility or provides excess supply to Alliant. This effectively shifts the responsibility for recovering fixed costs of providing delivery service from the solar customer to all other customers, a matter of controversy in many states. The City will need to determine how it wants to compensate its solar customers and then implement the approach. To the extent that a higher proportion of customers take advantage of Alliant's NEM tariff than other parts of Alliant's service area, this will place upward pressure on electricity rates unless the City decides to reduce the level of compensation to solar customers. This is just one example of the need to carefully evaluate each and every service that is currently being provided by Alliant and determine whether—and on what terms—the service will be provided by the City utility.

## 7.2 OTHER NON-QUANTIFIABLE CONSIDERATIONS

There are several nonquantifiable considerations that have an impact on the comparison of the two options. These include the ability to provide adequate regulatory oversight and supervision, potential impacts on reliability and the quality of service more generally, the ability of the two utility options to take advantage of technological advancements, and the ability to execute on clean energy and other societal goals.

Alliant is regulated by the IUB. This oversight takes several forms. First, oversight includes a review of every major investment decision by Alliant and approval of the terms under which new services can be offered, including price. Second, the IUB oversees quality-of-service issues, including the resolution of customer complaints. The IUB reviews supply and distribution planning activities to ensure that they support the provision of safe, reliable and affordable service as well as other public policy objectives. These functions respond to the recognition that electricity is an essential public service that enables the well-being of citizens, the ability of local businesses to thrive and grow, and the achievement of environmental objectives. The IUB wields considerable regulatory authority over Alliant, subject to legal restrictions that require that Alliant be allowed a reasonable opportunity to earn a fair return on invested capital. The IUB can prevent Alliant from earning both a return on and return of any investment that the IUB deems to have been imprudently incurred.

The public interest requires that the City establish mechanisms to perform these functions. This is achieved in various ways and may include a publicly elected “light board” that reviews all major decisions and approves any changes in the prices to be charged. While local authority has its advantages, it should be weighed against potential organizational and competency challenges of overseeing a relatively complex industry. In particular, overseeing quality of service requires the ability to assess the trade-off between desired improvements in the quality of service and both the implementing actions and costs of achieving such improvements. This may require periodic retention of outside engineering and financial expertise to perform these oversight functions.

The electric industry is currently undergoing a transformation that is being driven by a goal to interconnect solar energy and other distributed resources to the network. The industry is also making advances in information and communications technologies necessary to operate and maintain the distribution network through the increasing penetration rates of these resources. Many utilities are also implementing smart meters and associated systems in an effort to improve the efficiency of the network and provide opportunities to customers to save on their energy bills by changing usage patterns. There are substantial economies-of-scale associated with the information and other systems required to support distributed resources and smart meters. Large utilities are best equipped to plan, implement and operate these systems.

Alliant Energy

**Decorah's Electric System Reliability**

The reliability of the electric system underpins virtually every sector of the modern U.S. economy. Service interruptions can result in significant costs for customers for lost product, idle employees, or lost opportunity revenue. Over 90% of electric outages occur on the distribution system, which is what Decorah Power is proposing to acquire from Alliant Energy.

Two common measures of reliability are System Average Interruption Duration Indices or SAIDI, which is duration and System Average Interruption Frequency Index or SAIFI.

| | SAIDI | SAIFI |
|---|---|---|
| Decorah | 20.3 | 0.17 |

- The 2017 Decorah SAIDI of 20.3 minutes, means that an interruption on average would be slightly over 20 minutes annually
- The 2017 Decorah SAIFI of 0.17 events per year, means that each customer on average would incur an interruption every 6 years

According to the Energy Information Agency (EIA) report, (September 12, 2016) an average municipal electric utility in the United States incurs approximately two hours of interruption to the electric service annually, including major events. Also according to EIA, the average municipal utility incurs approximately one service interruption annually. In 2017 Decorah incurred approximately 20 minutes of interruption time or about 16% of the average electric municipal utility. Contrast Decorah's 0.17 events per year with that of an electric municipal utility average of one interruption per year.

A key reason that reliability in Decorah is excellent is because Alliant Energy has an operations facility within the city limits of Decorah. The 17 employees who serve Decorah have a combined 365 years of experience. There are both trained line and substation personnel located at the Decorah Facility. Some of these employees take their trucks home at night to reduce response times in the event of an emergency. Alliant Energy has equipment and material staged in the event of an emergency. In the Decorah Warehouse, Alliant Energy has over $500,000 in inventory to address emergencies that may arise. Alliant Energy has trucks and equipment to serve the needs of Decorah and the surrounding area. Additionally, Alliant Energy has over $15 Million in inventory and significant equipment only 2 hours away in our Cedar Rapids warehouse.

In addition to a strong local presence in Decorah, Alliant Energy has over 110 people within an approximate 2-hour drive in the event of a large scale incident. Table 1 below shows the number of employees by operating facility within that 2-hour drive.

**Table 1 – Alliant Energy Employees within a 2-Hour Drive of Decorah**

| Operating Facility | Number of Employees | Approximate Miles to Decorah |
|---|---|---|
| Decorah | 17 | 0 |
| Waukon | 4 | 19 |
| West Union | 5 | 28 |
| Elkader | 6 | 42 |
| Oelwein | 24 | 52 |
| Manchester | 8 | 73 |
| Mason City | 80 | 84 |
| Dubuque | 76 | 96 |
| Cedar Rapids | 140 | 106 |

In a document prepared by Decorah Power titled "A Vision Shared: Owning the future through a Decorah Municipal Utility" Decorah Power states on page 4 "A municipal utility would likely entail a larger workforce of local residents, and certainly offer employment to all current local utility employees similar to what happened when a group of rural electric cooperatives bought out Alliant's 128,000 customers in southern Minnesota recently."

However, in Decorah Power's Municipal Electric Feasibility Study Decorah Power dated January 16, 2018, page 2-6 states "For the purposes of this analysis, it is assumed that the MEU would contract with a nearby utility to provide distribution O&M services for the duration of the Feasibility Study. This may be an economically efficient way to manage the system with experienced personnel while the MEU determines how and when it would hire and train its own staff. We have assumed that a nearby utility would require a fee to provide these services of 15% of the allocated distribution expenses. The MEU would need to evaluate the trade- off between continuing to pay the O&M fee and providing its own staff for the services at a future date."

Contrast Alliant Energy's strong local presence and performance with Decorah Power's Feasibility Study assumption of outsourcing of operations and maintenance to an outside entity. The result is response time will be greatly reduced, meaning that customers in Decorah will experience longer duration outages. The closest rural electric cooperatives are either MiEnergy Cooperative of Cresco or Allamakee-Clayton Rural Electric Cooperative in Postville, both of which are about a 20-mile drive from Decorah. Many rural electric cooperatives do not own and operate substations and thus have no substation expertise on their staff. They instead rely on the power supply provider to provide that expertise, which would add additional response time.

Decorah Power's feasibility study assumes approximately $25,000 in inventory and assumes outsourcing of electric system construction and operations. A single transformer to serve 4 residential customers can cost $2,000. A transformer to serve a large customer, such as a factory, costs over $20,000.

Table 2 below shows rural electric cooperatives within a 2-hour drive of Decorah.

**Table 2 – Rural Electric Cooperatives within a 2 Hour Drive of Decorah**

| Rural Electric Cooperative | Location | Approximate Miles to Decorah |
|---|---|---|
| Allamakee-Clayton Electric Cooperative | Postville, IA | 20 |
| MiEnergy Cooperative | Cresco, IA | 21 |
| MiEnergy Cooperative | Rushford, MN | 45 |
| Butler County Rural Electric Cooperative | Allison, IA | 85 |
| East-Central Iowa Rural Electric Cooperative | Urbana, IA | 85 |
| Heartland power Cooperative | St Ansgar, IA | 63 |

Questions regarding reliability:

1. Can the same level of reliability and response time be guaranteed given Decorah Power's proposed operations and maintenance plan?
2. Who will the non-Decorah-based service provider restore service to first – its customers or the residents of Decorah?
3. What is the plan to deal with a catastrophic event, especially if there is little to no backup equipment within the city limits or nearby?

**Consideration of Municipal Electric Utilities' Rates**

There are 136 electric municipal utilities in Iowa. The last municipal electric utility in Iowa was created in 1974 by Aurelia, which is in Cherokee County. Since then a total of six communities (Everly, Kalona, Rolfe, Sheldon, Terril, and Wellman) have unsuccessfully attempted to create municipal electric utilities.

A city contemplating the formation of a municipal electric utility (MEU) may assume it can duplicate or improve upon the rates of incumbent municipal utilities or the rates of public utilities. However, for numerous reasons, it would be nearly impossible for a newly formed MEU to achieve the rates of long-existing MEUs, particularly without sacrificing reliability or sustainability goals. Existing MEUs have been around for decades and have energy and operating costs that a newly created municipal cannot duplicate.

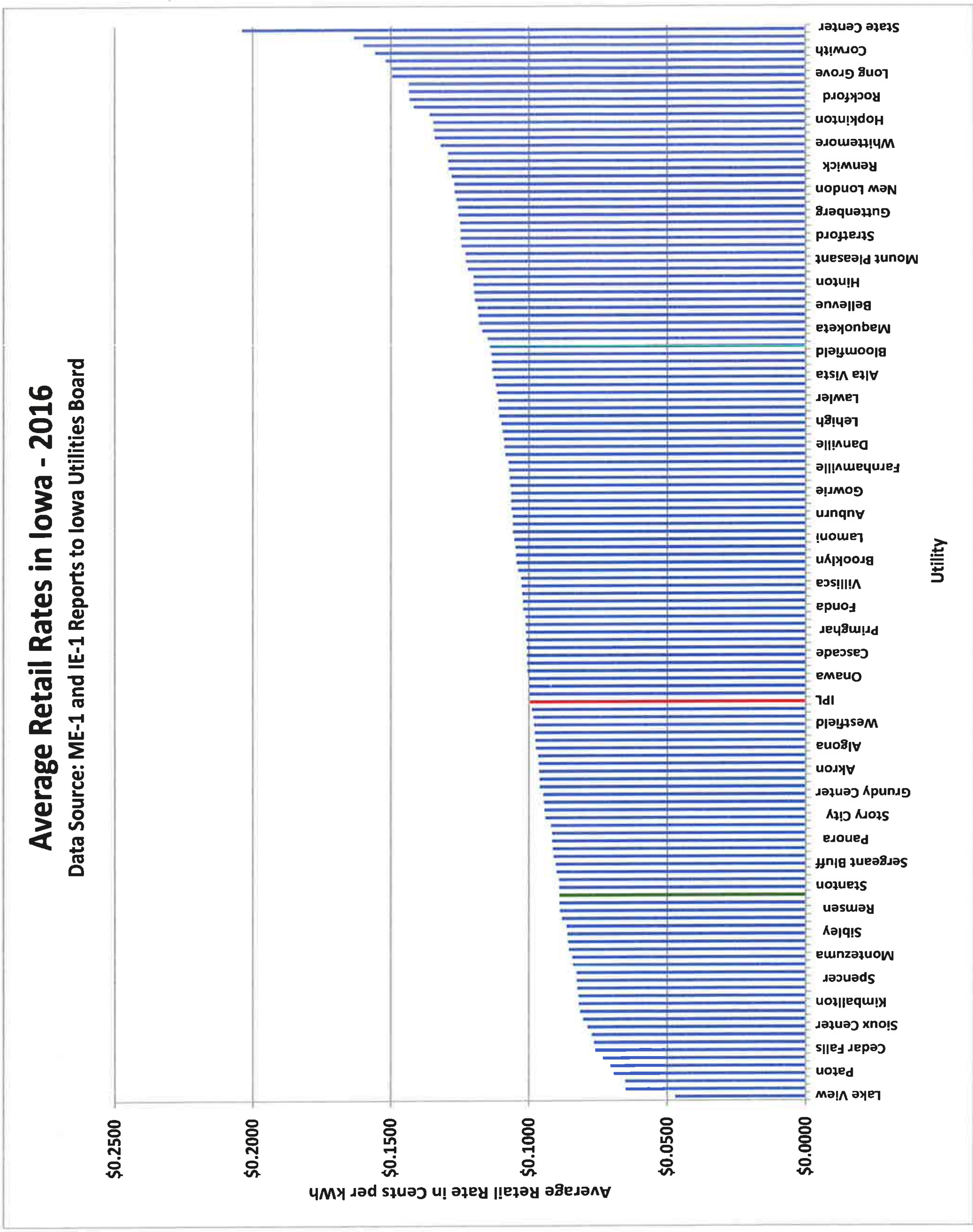
Out of Iowa's 136 electric municipal utilities in Iowa, 75 are located west of Interstate 35. Many of these 75 municipal electric utilities have relatively low rates because they have access to Missouri River hydroelectric resources that are offered by the Western Area Power Administration of the United States Department of Energy. There is no more of that power – it is allocated to existing entities with a waiting list of higher priority organizations, such as Native American facilities, facilities of the Federal Government, and existing municipals. In addition, several incumbent MEUs have ownership in large coal-fired generating units constructed many years ago (such as Cedar Falls), resulting in very low energy costs. Finally, some MEUs have heavier industrial load than most cities (such as Muscatine). These MEUs, which have unique characteristics of power supply or customer base, are generally shown on the left-hand side of Graph 1, which compares the average retail rate of municipal and public utilities in Iowa. As can be seen, long-existing MEUs typically have unique features that lead to a cost structure that is lower than what a potential MEU could hope to achieve over the short- and long-term.

All utilities should set rates equal to the cost of service. The cost of service for all utilities – MEUs, cooperatives, and public utilities – includes cost of power supply, cost of materials and supplies, and personnel costs as well as costs of owning and maintaining a reliable energy grid. These costs are driven by the marketplace and in most instances a public utility will have an economy of scale pricing advantage over a smaller utility like a MEU or cooperative.

A municipal utility with a fixed debt payment may need to increase the cost per kilo-watt hour (kWh) to generate enough revenue to cover debt service and other operating expenses that may result from lower kWh sales volumes. Generally, municipal utilities in Iowa trail their public utility counterparts significantly in deploying and offering energy efficiency programs. By their design, energy efficiency programs reduce consumption by customers, subsequently lowering sales volumes while increasing costs associated with program management, rebates, equipment purchase, audits or other offerings. Similar to energy efficiency programs, solar net metering also reduces kilo-watt hour sales volumes. However, the existence of solar generation may not result in reduced purchased energy expense, as it does not necessarily reduce the cost of generating capacity. The presence of energy efficiency programs and customer-owned solar generation can put further upward pressure on the cost per kilowatt hour.

Finally, regulation of public utility rates by the Iowa Utilities Board is based upon cost of service for the utility to serve each customer class. This eliminates cross-subsidization of classes, which is where rates for a certain customer class intentionally under-collect the costs to serve that class and in turn over-charge a separate customer class to make up the difference. IUB oversight protects against cross-subsidization in public utility rates; MEU customers are not subject to that protection from the IUB.

Further, it should be noted that a rate request (whether an increase, a decrease, or a new pricing option) by a public utility is subject to a rigorous review process by the IUB, the Iowa Office of the Consumer Advocate – which advocates on behalf of customers, and often a number of other customer coalitions. It is rare that a rate request is not adjusted, decreased, or changed in some way during this process. However, under local control, the utility experts employed by the IUB, OCA, and customer groups have no opportunity to influence, affect, or control the decisions made by the MEU. In fact, MEU boards can make rate decisions without any external input or review.


Average Retail Rates in Iowa - 2016
Data Source: ME-1 and IE-1 Reports to Iowa Utilities Board
Average Retail Rate in Cents per kWh
$0.2500
$0.2000
$0.1500
$0.1000
$0.0500
$0.0000
Utility
State Center
Corwith
Long Grove
Rockford
Hopkinton
Whittemore
Renwick
New London
Guttenberg
Stratford
Mount Pleasant
Hinton
Bellevue
Maquoketa
Bloomfield
Alta Vista
Lawler
Lehigh
Danville
Farnhamville
Gowrie
Auburn
Lamoni
Brooklyn
Villisca
Fonda
Primghar
Cascade
Onawa
IPL
Westfield
Algona
Akron
Grundy Center
Story City
Panora
Sergeant Bluff
Stanton
Remsen
Sibley
Montezuma
Spencer
Kimballton
Sioux Center
Cedar Falls
Paton
Lake View

# Electric Municipalization in Iowa

# Electric Municipalization in Iowa

## Summary

A government takeover of an electric utility business does not take place in a free and open market. There are so few sales of electric utility properties comparable to the system that a city may desire to acquire that decision makers will not be able to make the same analysis that a businessperson would undertake if buying, say, an insurance agency or a McDonald's franchise. Because there are few sales of comparable utility systems, a city must incur significant costs before it will be able to develop credible and accurate information on which to make its decision. Further, so long as the city is unwilling to pay the price that motivates the incumbent to sell, the sale price will be set by the Iowa Utilities Board (IUB). Thus, there is no assurance that the monies expended to acquire a system will result in acquiring a business enterprise at a price that will permit the city to profitably operate it.

For a city in Iowa to create a municipal electric utility (MEU) in Iowa, the city must prove that the proposed MEU will be in the public interest. The public interest determination will be made by the IUB and, in the past, the IUB has defined that as the public interest of all people, not just those within the community requesting to municipalize.

## History of Municipalization

The last Iowa community that successfully created a MEU was Aurelia in 1974. Because that was over 40 years ago, no records are available to provide insight into how that public interest determination was made.

In 2006, a group of communities petitioned the IUB seeking to create MEUs. Those cities were: Everly, Kalona, Rolfe, Terril, Titonka, and Wellman. Titonka requested and was granted by the IUB that it be dismissed from the proceeding due to the cost of the effort. On July 11, 2008 the IUB issued an order which determined that the creation of MEUs in each of the remaining cities was not in the public interest. The July 11, 2008 decision of the IUB was appealed to Polk County District Court, which issued an order on October 19, 2009 that upheld the IUB's decision. Based on public records and information, the cities spent at least $500,000 to $750,000 for an effort that was not successful.

## What are the steps involved in Municipalization?

On a simplified basis below are the steps required to create an electric municipal utility:

- Preliminary public discussions;
- Feasibility Studies;
- Public Referendum;
- Decision to Initiate IUB Proceeding;
- The IUB Hearing Process;
- Appeals;
- MEU begins operation.

**Preliminary Public Discussions**

A community considering the creation of a MEU will likely have some level of discussion not only among city leaders but the general public to gauge interest in the potential creation of an electric municipal utility. Such discussion should consider the risks of moving ahead with municipalization as well as any potential benefits. The city should also consider why the desire to move away from the incumbent utility and create a city-owned utility. If the city is unhappy with the incumbent utility, have discussions been held seeking to change what the city is unhappy with.

**Feasibility Study**

A feasibility study will allow the city to determine if a municipal utility is feasible from a financial perspective. The question that such a study is intended to answer is:

> "Will the creation of an electric municipal utility result in enough savings to the citizens of the city to be deemed in the public interest?"

A detailed look at what should be in a feasibility study and how the IUB evaluates those studies, is provided below.

**Public Referendum**
Once the feasibility study is completed decision makers will have to decide if they wish to hold a public referendum on the creation of a municipal electric utility. If the voters approve a referendum to "establish" a municipal utility, the city will be free to pursue municipalization, regardless of its ultimate price or cost to citizens. The referendum requires a simple majority of the votes cast. A referendum allows the city to proceed with municipalization, but does not compel the city to move ahead with the municipalization process.

**Decision to Initiate the IUB Process**
Once the referendum has been held and if the voters approve moving ahead with municipalization, the city may desire to conduct additional analysis before moving to the IUB process. Some of the additional feasibility analysis could include a more detailed valuation study in preparation to make an offer to the existing utility to purchase the system. The city may desire to undertake additional study on power supply costs, financing costs, or other issues that are associated with the creation of an municipal electric utility.

Before filing an application with the IUB, the city will typically negotiate and make an offer to the existing utility for the purchase of its system. Unless a voluntary agreement can be reached, the next step is to move to seeking the approval of the IUB.

**The IUB Process**
The Iowa Utilities Board (IUB) determines whether it is in the public interest to grant a city a certificate of authority for the city to take possession of and to operate the electric system. If the IUB finds it in the public interest to grant a certificate, the IUB must also determine the market value of the utility system and the damages incurred by the utility as a result of the city's takeover. The IUB's public interest determination will weigh whether municipalization is in the best interest of the citizens of the State of Iowa, including the citizens of the city and all customers of the existing utility. It should be anticipated that the IUB will establish a price as one indicator of whether municipalization is in the public interest. If a certificate of authority is granted, the IUB will establish the value of the system and the price the MEU is required to pay the incumbent utility.

This process is similar to a court proceeding where there are phases that typically include discovery, depositions, hearings, trials, briefs, orders, and appeals. These proceedings may require city officials or their representatives to provide detailed data and sworn testimony during hearings or depositions. Like any lawsuit, the parties may negotiate a settlement at any time during the process. The IUB then renders a decision that will either deny the city's request or establish the price which the city must pay if it wants to acquire the system at issue. Either party may appeal such a decision, which further extends the timeline and financial expenditures.

**Appeals**
The appeal process will involve an evaluation of the IUB decision by a district court. If the decision of the court clearly makes municipal takeover unfeasible, the city may decide to abandon the project. Should the city abandon the process, either voluntarily or involuntarily, the city will have to pay for feasibility studies, legal counsel, and expert witnesses out of its current resources and will not be able to pay the costs as part of a bond issue used to finance a newly established municipal electric system. The City of Sheldon, Iowa spent almost $450,000 in its four-year effort to acquire MidAmerican Energy's electric distribution system. The IUB, in its August 2, 1990 "Order Denying Petition for Certificate of Authority," found that the city's acquisition would not be in the public interest. In order to finance these expenditures, Sheldon increased its property taxes.

The communities that sought to create electric municipal utilities in 2006-2008 spent hundreds of thousands of dollars in their attempt. In its July 11, 2008 order the IUB found it would be unreasonable and not in the public interest to grant certificates of authority to form a municipal electric utility.

**MEU Begins Operations**
Prior to taking possession of the system, the city must establish the infrastructure, staff, and administration of the MEU. This may include hiring and training personnel, purchasing inventory and equipment, acquiring or modifying computer systems, contracting for (or otherwise arranging) power supply and electric transmission service, and establishing operation, maintenance, and administrative procedures. While most municipalities in Iowa already own and operate water and wastewater utility systems, the skills and equipment required to operate these systems are usually not directly applicable to owning and an electric system.

Though water distribution systems share some similarities with gas systems, electric systems differ considerably. Most electric systems have extensive facilities above ground. Water, wastewater, and gas distribution and collection facilities are usually located underground. Electric systems pose significant electrocution and other hazards to workers and the general public unless proper safety procedures are followed. Safety requirements in dealing with electric systems are much more stringent than with water and wastewater systems.

**Overall Timeline**
An outline of the timeline of the municipalization process, including the steps described above, is below:

| | Expected Duration - Months | | |
|---|---|---|---|
| Activity/Event | Minimum | Expected | Maximum |
| Preliminary Public Discussions | | Indefinite | |
| Feasibility Studies | 2 | 12 | 36 |
| Public Referendum | 3 | 3 | 12 |
| Decision to Initiate IUB Proceeding | 0 | 1 | 12 |
| The IUB Hearing Process | 7 | 10 | 39 |
| Appeals | 0 | 12 | 24 |
| MEU Begins Operations | 6 | 7 | 36 |
| **Total Elapsed Time** | **18** | **45** | **159** |

## Feasibility Studies

Before the IUB can determine if a MEU is in the public interest it must review evidence to determine what the costs would be for a city to acquire the electric distribution facilities of the incumbent public utility as well as the on-going operating costs compared to the public utility continuing to provide service to the city. Therefore a city considering the creation of an municipal electric utility, must undertake a feasibility study.

There were a number of issues with the feasibility studies used by earlier cities to determine that they wanted to pursue municipalization. Among them were: the study greatly underestimated the value of the system that the MEUs proposed to acquire, the cost of power supply was understated, the projected growth rate was overstated, and in general the IUB determined that none of the applicants were truly prepared to own and operate an electric utility.

A feasibility study will consider the following factors:
- The cost to acquire the utility's electric system;
- Re-integration costs;
- Incumbent Utility stranded costs

- The start-up cost associated with the creation of an electric municipal utility;
    - These costs could include items such as:
        - Trucks;
        - Tools;
        - Inventory;
        - Equipment;
        - Computer and Billing Systems;
- On-going costs such as:
    - Power supply costs;
    - Transmission service costs;
    - On-going operations and maintenance costs;
    - Projected customer demand;
    - Energy Efficiency Program costs;
    - Costs associated with debt service;
    - Personnel costs.

These costs are then compared to the public utility's cost to provide service over the same study period, which is typically 25 years. Such cost savings are expressed in terms of a Net Present Value.

A closer look at the components of a feasibility study follow:

- **Cost to Acquire the Electric System:**
  An essential question that must be answered early is the value of the electric system that the community proposes to acquire. Depending upon the consultant, there is usually some type of an inventory of the electric system. The cost to acquire the system will be based upon what is known as replacement cost new (RCN) methodology. This is the method that has been adopted by the IUB in the Sheldon, Everly, Kalona, Rolfe, Terril, and Wellman cases. However, in all of the above cases, the MEU consultant consistently underestimated the cost to replace the system, resulting in an overstatement of the benefits that were expected.

- **Re-Integration Costs**
  Because utilities design their electric distribution system based upon service territory and not city limits, there will likely be some number of customers that will continue to be customers of the existing utility, which will likely have to be separated from the facilities that the MEU proposes to acquire. These are referred to as re-integration costs. MEU feasibility studies typically assume that re-integration can be accomplished thru the use of primary metering. Simply stated, primary metering means that customers of the public utility will have some portion of their electric service provided by the proposed MEU with meters installed to determine electric usage by that group of public utility customers. Historically, the IUB has ruled against the use of primary metering for two reasons:
    - Tature of the transaction (the electric municipal was created as a result of a hostile taking of the utility's property) does not bode well for the ongoing cooperation required in a primary metered system; and
    - The proposed MEU has not demonstrated that it is prepared to operate the municipal electric utility, which may place the quality of service of the public utility customers in jeopardy.

  The IUB did not allow primary metering calculations to be used in any of its recent rulings (Sheldon, Everly, Kalona, Rolfe, Terril, and Wellman). Instead, the IUB found that the MEU would be required to install facilities to physically separate the IOU customers from the system of the MEU. Because re-integration costs are typically understated in feasibility studies, benefits of electric municipalization are overstated.

While many of the past cases have been related to smaller communities with just a few smaller connections to other customers outside the city limits, the impact of this cost would be greatly magnified in a community where the proposed MEU's lines are adjacent to another community.

- **Incumbent Utility Stranded Costs:**
  The IUB can consider whether the public utility will incur any stranded costs as a result of the creation of the MEU. The utility may have facilities that are located outside of the city limits of the MEU that are utilized to provide service to the utility customers of that City. If the MEU is created, the remaining customers of the public utility may bear the burden of a cost shift to pay for facilities that were installed to provide service to the MEU city. The most common example of stranded costs is generating plants. The theory is that an investment was made in a generating plant to serve a utility's needs, including the needs of the city that is creating the MEU; thus, if the city leaves the public utility, the public utility's remaining customers will be required to pay costs for generating plants that were used to serve the city. The IUB has not awarded stranded cost recovery in any of the dockets noted in this white paper.

- **Start-Up Costs**
  With the creation of a MEU, a city will have to consider the start-up costs that will be associated with a MEU. An early decision that will have to be made is will the city hire staff and purchase equipment to provide service comparable to the public utility. If the answer is yes, then a MEU will have to determine the amount of equipment and the price of equipment that it will be required to purchase. This will include trucks, trailers, trenchers, hand tools and other types of equipment. Another critical question is whether the City has the infrastructure to read meters and issue bills. Consideration will have to be given to computer systems to handle meter reading and billing, the development of rates for various customer classes as well as customer service personnel that can address billing and service-related questions.

- **Power Supply Costs**
  Power supply is the largest single expense item for a MEU. It is likely to be 60% to 75% of a MEU's cost structure. Because the MEU will likely not have any owned generation assets upon its creation, the MEU will rely on the power and energy markets for its supply. The feasibility study will produce a proxy intended to represent what it can procure power and energy in the open market for. The feasibility study will likely make the claim that it can procure in the marketplace at a rate lower than the public utility. Most municipal utilities that do not have owned generation enter into some type of a power supply contract for some fixed term. Fixed-price contracts are rare in these times of market volatility. Likely, a fixed-term contract would have a fixed price for the capacity component of the power supply with a variable price for the energy. Price of a power supply contract is likely as much luck of the draw. If a MEU is seeking a power supply contract when supply outstrips demand, then price will likely be favorable. If a MEU is seeking a power supply contract when demand outpaces supply then price will likely be unfavorable. Some current municipals in Iowa have seen power supply costs rise by 40%-50% as when an older favorably priced power supply contract expires and is replaced with a new one. A public utility's power supply is priced at cost plus a fair return; prices in the marketplace are based upon market prices, and thus the MEU is captive to the laws of supply and demand. It is unlikely that over the long term power supply costs for a MEU will be less than those of the IOU.

- **Transmission Service Costs**
  Transmission rates are determined by the Federal Energy Regulatory Commission and are offered on a non-discriminatory basis, meaning that all like users pay exactly the same rate. Some consultants will argue because they are "out there every day in the market" they can get more favorable transmission rates than the public utility. The reality is that a MEU will pay exactly the same price for transmission service as the public utility.

- **Operations and Maintenance Costs**
  The recent feasibility studies that have been completed have assumed that operations and maintenance of the electric system will be handled by adjacent municipal electric utilities or neighboring rural

electric cooperatives. While appealing at first blush because it allows the MEU to avoid large start-up costs, there are going to be trade-offs. What is the scope of services to be provided by the service provider and what are the costs? Does the service provider have adequate resources (people and equipment) to provide the desired level of service? What happens during a large-scale event such as a storm or tornado in terms of service restoration – which system will the service provider restore first? What is the wait time for outage response for an outage affecting a few customers or routine customer service items such as meter installs or service installations for customers?

- **Projected Customer Demand**
  A critical question in the feasibility study is the level of future demand. Feasibility studies tend to overstate the projected rate of growth compared to not only the public utility projections but also compared to history. A rosy projection of future demand results in an overstatement of results.

- **Energy Efficiency Programs**
  The IUB has noted that it is important that all utilities should strive to provide complete energy management services in today's market, meaning that customers should be offered choices on such things as energy efficiency programs, demand side management and renewables in addition to traditional utility service. The IUB also noted that public utilities have shown more of a commitment in time, effort and money to energy efficiency than most municipal utilities.

- **Financing**
  There are considerations that a city must make in terms of financing the debt that will be incurred with the acquisition of the utility system. First, the relevant interest rate to be used in calculating the cost of financing the acquisition of utility assets is the interest rate that will prevail at the time the necessary bonds are issued, not the current interest rate. Second, the cost of financing is not reduced if the acquisition is financed through cash reserves rather than the issuance of debt. The use of cash reserves has an opportunity cost, since those reserves could be used to reduce other debt, to reduce taxes, or to pay for government services.

- **Personnel Costs**
  Depending upon how the city plans to operate the MEU, there will likely be some level of personnel costs. A MEU will have to decide if they are going to hire a utility manager, customer service representatives, and skilled personnel to operate the utility system. Personnel costs will also need to reflect on-going training of the skilled personnel, which is extensive. The required staff must be hired and trained in order to safely operate the system. Staff may need to be hired and trained well in advance of the actual acquisition of the assets to assure customers do not see deterioration in service quality and reliability when utility operations are transferred to the MEU.

## Other Considerations

In addition to considering the expense of pursuing municipalization, determining the acquisition price, setting up a new utility, and the protracted process involved, decisions makers should look at numerous other considerations. Alliant Energy has provided white papers on rates, reliability, and sustainability, so this white paper does not address those topics in detail. Decision makers will have to evaluate energy efficiency offerings, the realities of giving up oversight by a quasi-judicial body (the IUB), and tax implications.

**Energy Efficiency**
Generally municipal utilities in Iowa trail their public utility counterparts significantly in the deployment/offering of energy efficiency programs. For a municipal utility that is interested in generating additional revenue for other public purposes, offering energy efficiency programs is counterproductive to that purpose. By their design energy efficiency programs are designed to reduce consumption by customers, meaning that revenue is reduced due to lower sales volumes. Deployment of energy efficiency programs also have cost

associated with program management as well as either rebates, equipment purchase, audits or other offerings. Reduced sales volumes translate into higher rates on a per kilo-watt hour basis to raise an equivalent amount of revenue.

**Rate-regulation and protection**
Further, it should be noted that a rate adjustment request by a public utility is subject to a 10-month review process by the IUB, the Iowa Office of Consumer Advocate – which advocates on behalf of residential customers in the service territory, and often a number of large customer coalitions. It is rare that a rate request is not adjusted, decreased or mitigated in some way during this process. However, under local control, the utility experts employed by the IUB, OCA, and large customer groups have no opportunity to influence the decisions made by the MEU. MEU trustee boards can make rate decisions without input from citizens or utility experts.

**Tax considerations**
There are also tax implications to consider. Municipal utilities in Iowa pay property tax replacement taxes at the same rates as public utilities, so there is likely no tax cost savings from tax reductions. Secondly, the revenue collected from utility replacement taxes statewide is allocated back to the communities where the public utilities do business. A city that municipalizes its electric system will replace its share of that allocation with its own property replacement tax revenue, but will not share in the growth of the revenue collected from public utilities elsewhere in the state. If those revenues are expected to rise, this is an important disadvantage to a city that is considering municipalization.

## Key Questions to Consider

Decision makers should look beyond the conclusions reached and results presented in any municipalization feasibility study. They should look not only at what is included in the study, but should also look for what is not included. They should look critically at underlying assumptions and calculations. Some of the key questions in this regard are:

- What will this cost the City? What new financial risks must citizens take on that are currently risks borne by the IOU’s shareholders and is the size of those risks reasonable?
- Will customers be assured the same level of utility experience, knowledge, and response in a time of emergency?
- What other city goals must be given up or delayed to move forward with this effort due to the financial cost?
- Are there factors and considerations which would affect a city-owned utility which have not been reflected in the study? If so, what is the potential impact on the results of the study had consideration been given?
- Are the assumptions relied upon in the feasibility study reasonable and are they based on IUB precedent? Have the assumptions adequately recognized the potential risk of going forward with municipalization? Are the assumptions used overly optimistic or inaccurate? Have the assumptions used adequately captured the downside risk to the city or have they promised only positive results?
- Has the study provided information regarding the cost that the city would incur if the municipalization process is terminated at some point? Has the study provided information regarding the effect on city finances of paying the ongoing cost of the municipalization?
- Does the feasibility study adequately consider the unique aspects of utility service in our community?
- Does the study present an objective view of municipalization? As a decision maker, have I examined the study objectively and skeptically?
- Has my examination been based on an objective view of the economics and potential consequences of proceeding with a municipalization effort?
- Are there ways to work with the incumbent IOU to meet our same goals without increasing risk to the community?

# THE COST OF ELECTRIC DISTRIBUTION SERVICE

## COMPONENTS OF THE COST OF SERVICE

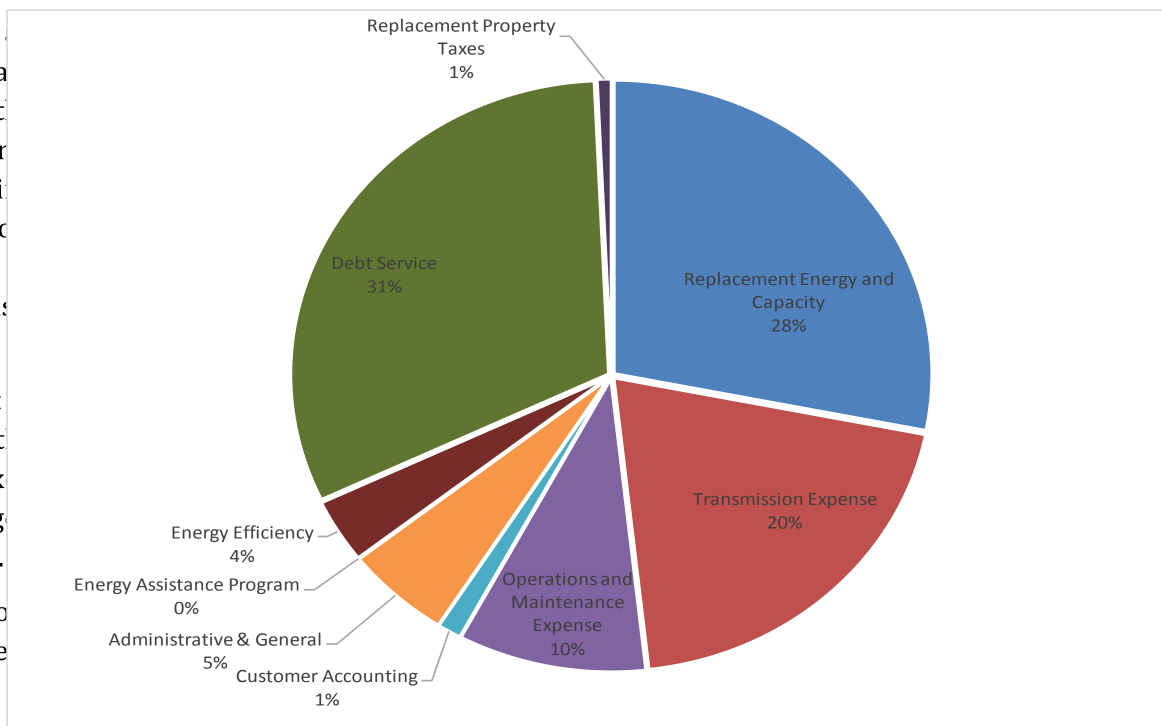



*CHART 1: THE COMPONENTS OF COST OF SERVICE*

While the majority of the costs of a electric distribution system a recovered on a variable cost basis, t majority of the costs are incurred or fixed cost basis. The followi summary identifies the co components, the relative portion the total cost of service and the bas on which costs are incurred.

As shown in this study, 28 percent the total expected cost of t municipal electric service are fix costs that are essentially unchange with energy conservation measures.

This issue is being addressed acro the country through recove mechanisms that allow utilities recover fixed costs on a fixed basis.

## POWER AND TRANSMISSION COSTS

The provision of electric service to the distribution system includes costs that are outside of the control of the distribution system operator, specifically Power, Capacity and Transmission. These costs are incurred by the distribution system operator and are passed through to customers at the cost incurred. There is no return to the distribution system operator for these costs.

### POWER (ENERGY ONLY)

Energy costs are incurred on a $/kWh basis according to customer usage. These costs are typically passed through to customers in a Company's fuel and purchased power adjustment clause. These costs are not part of the rate base and therefore there is no return on or of capital included in these costs.

### CAPACITY COSTS

Capacity costs are the costs of securing generation capacity in the market (MISO) to serve the usage (kWh) requirements of customers. This cost is calculated on a demand basis, based on the usage of customers on the peak day (highest usage day) in the system.

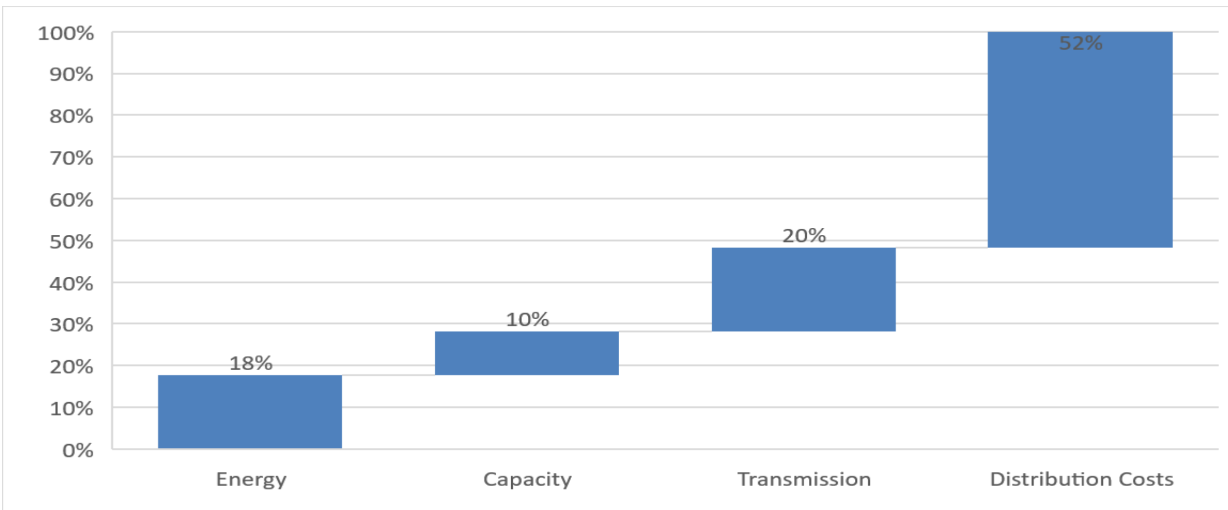



*CHART 2: POWER AND TRANSMISSION COSTS AS A PERCENTAGE OF THE COST OF SERVICE*

### TRANSMISSION

Similar to Capacity Costs, Transmission costs are a demand-based cost for the use of the transmission system between the generation and the distribution system. This cost is incurred for use of the transmission system that the distribution system is connected to and is set at a tariff rate determined by the Independent System Operation (MISO).

**Power supply and transmission represent 48% of the total cost of service. These costs are outside of the control of the distribution system operator and are based on the demand on the system. Capacity and transmission costs (30% of the total cost of service) are fixed costs incurred based on the peak load of the system. Therefore, to the extent that all customers contribute to the peak load, these costs are not avoidable. Energy charges are variable costs that can be avoided through conservation or alternative generation sources. Power supply costs are passed through directly to customers in the kWh charge. Therefore, the benefits of the avoided cost accrue to the individual customers that engage in conservation, not the system overall.**

## DISTRIBUTION SYSTEM COSTS

Distribution System costs are the costs to maintain the distribution system. These costs, which include the maintenance of the system, capital investment in the system and the customer service and administrative costs are managed by the distribution system operator.

### OPERATING AND MAINTENANCE COSTS

O&M is the ongoing maintenance of the system (i.e. maintenance of all overhead and underground lines, tree trimming, maintenance of services, and outage response).

### CUSTOMER PROGRAMS

Customer programs include energy efficiency programs, low income assistance, net metering and other programs that benefit specific customers on the system.

### CUSTOMER ACCOUNTING/ BILLING

These costs are a combination of software and employees and equipment that are needed for accounting, billing and customer service. Generally, there is an initial investment in systems and personnel that is required to establish the basic functions and thereafter these costs increase with the size of the system.

### GENERAL AND ADMINISTRATIVE

G&A costs are the costs of management and overall administrative functions in the system.

### TAXES

Taxes are a function of federal, state and local government requirements of the utility, including income taxes, property taxes, local fees and other costs required by government. These costs are largely unavoidable by investor owned utilities.

**Distribution costs comprise 52% of the expected cost of service. While distribution costs have historically been recovered on a variable cost basis ($/kWh), these costs are typically incurred on a fixed cost basis. The maintenance of the distribution system and the systems and staffing needed to communicate with customers are not dependent on the usage of customers. Therefore, energy efficiency and alternative generation sources do not reduce distribution costs.**

# FINANCING

Rate Base is the term used for the capital that has been invested in the distribution system. This represents all investments in the distribution system that are not "consumable". These assets are generally long-lived assets that are integral parts of the delivery of electric service or the intangible assets that are necessary to run the system such as software and communications systems.

### MUNICIPAL UTILITY FINANCING

For a municipal utility, rate base is 100% debt financed. Debt is a fixed obligation that must be met by the utility. The cost of debt is a fixed cost that is established based on the weighted average cost of all debt issuances of the utility. As shown in Chart 1, debt service is 31% of the cost of service.

# CONCLUSIONS

As shown in Chart 4, the variable components of the cost of running a municipal electric distribution system represent 18% of the total cost of service. The benefits of that variability accrue to the individual customers who elect energy efficiency and alternative generation investments. The remainder of the costs of the system are supported on the usage of the entire system.

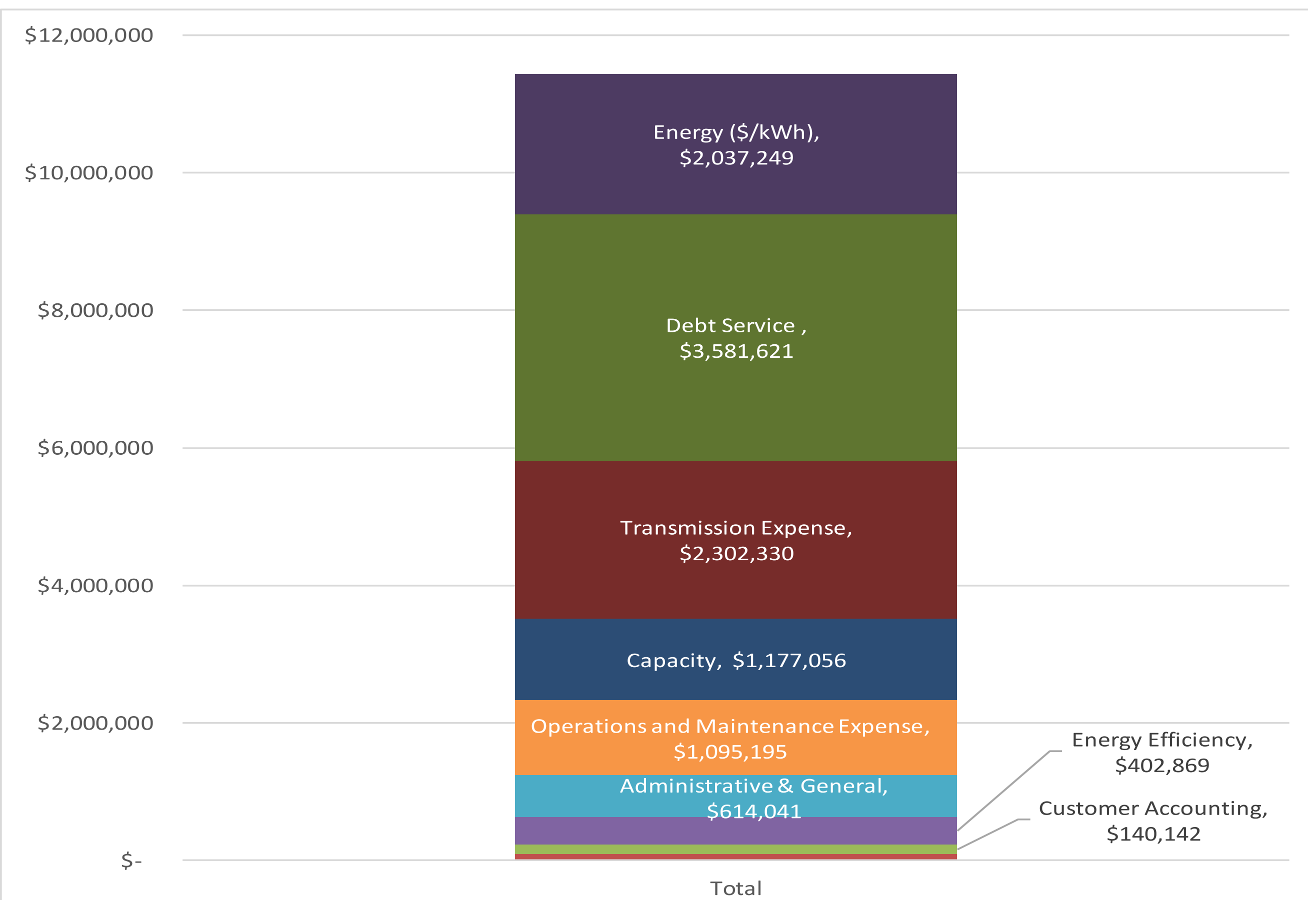



*CHART 4: VARIABLE COSTS OF MUNICIPAL ELECTRIC SERVICE*

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CLEAN ENERGY BATTLEGROUNDS

# Lessons from Boulder's bad breakup

**By Nathanael Johnson (https://grist.org/author/nathanael-johnson/)** on Jan 19, 2018

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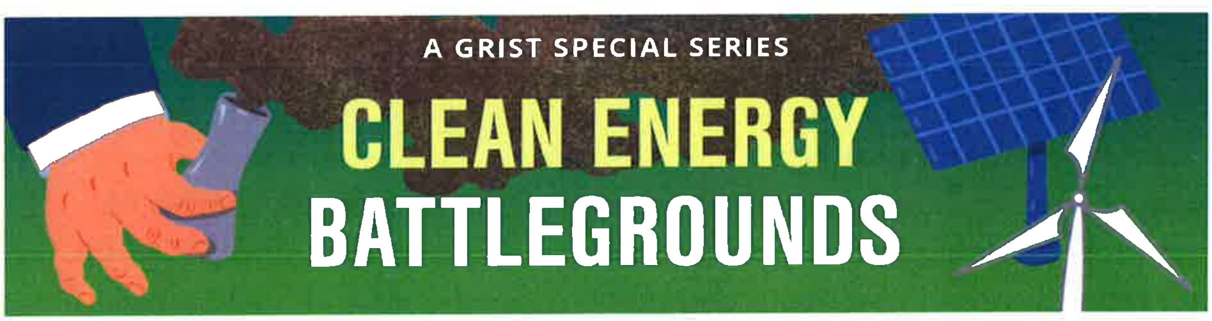
Back in 2010, the city of Boulder, Colorado, decided to break up with its corporate electricity provider and generate its own power. Going it alone, the city figured, would give the liberal redoubt a better shot at hitting its carbon-cutting targets. The plan was to have Boulder running on Boulder power by 2017. It was ambitious, idealistic, and, according to the city's former mayor, Will Toor, probably a mistake.

Boulder has spent the better part of the past decade pursuing this split, but success is still probably years away. In the meantime, the utility, Xcel, has shown that it's happy to close coal plants and scale-up renewables.

When all this started, Toor thought giving Boulder its own municipal utility might be a good idea. But, over the years, as Toor has served (https://www.linkedin.com/in/will-toor-a8b33120/) as mayor, county commissioner, and on various state-level commissions and panels, he's become more and more worried about the number of smart-person hours focused on fighting with Xcel rather than cutting carbon. Now, he thinks that this effort to create a municipal electric utility may actually be slowing Boulder's climate progress.

The story of Boulder's struggle provides a valuable lesson for people taking climate action locally. Cities from Atlanta, Georgia, to San Jose, California, and Pueblo, Colorado (which we wrote about here (https://grist.org/article/pueblo-colorado-renewable-energy-future/)) are trying to figure out what's most important. Building solar panels and wind turbines? Fighting big corporations? Bringing down prices for the poor? Local control? Squeezing off greenhouse gas emissions? It's tempting to think we can have it all, but usually, one effort comes first and impedes the others.

Story continues below

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This Hawaiian island is the future of energy [video] (https://grist.org/article/this-hawaiian-island-is-the-future-of-energy/)

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Washington state's top attorney is taking on the White House (https://grist.org/article/washington-state-attorney-general-bob-ferguson-donald-trump/)

Grist recently spoke to Toor about what changed his mind, and why he thinks environmentalists should make big electric utilities their friend.

Our interview has been condensed and edited for clarity.

**Q. Can you tell me how Boulder wound up trying to start its own municipal power utility?**

**A.** In 2010, the city began negotiating to see what it could get from our utility, Xcel, to advance our clean energy goals. Xcel wasn't putting a lot on the table. They sent an employee who took a very hard line and managed to offend pretty much everybody on the Boulder City Council. So the city placed two measures on the ballot to allow the city to make its own electric utility and create a small tax on electricity usage to fund feasibility studies.

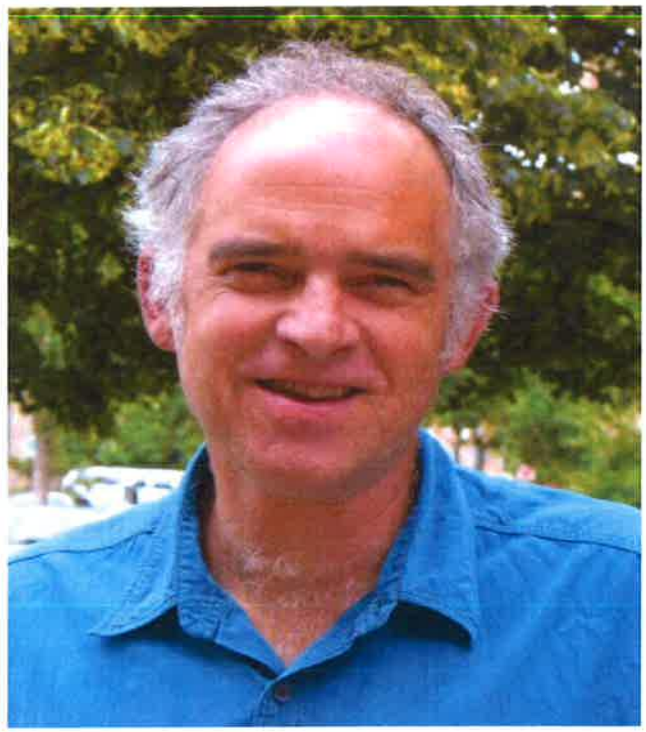
It was a pretty contentious campaign. Xcel poured money in and was perceived as a big corporation trying to tell us what to do. It was a super close vote on the tax but it ultimately passed. The other measure to let the city create a utility got a big majority. I supported those measures at the time. I wasn't sure if municipalization [a city-run utility] was the best way forward. But trying to continue negotiations with Xcel was like trying to work things out with a spouse after initiating a divorce — it just doesn't happen.

**Q. And you were part of that doomed couples counseling right?**

**A.** Yes, I was on the task force asking if you could meet the city's carbon goals through a partnership with Xcel. [Boulder is aiming (https://bouldercolorado.gov/climate) for 100 percent clean electricity by 2030, and an 80 percent greenhouse gas reduction by 2050] I became convinced that you probably could. Xcel put a set of options on the table to cut emissions: building utility-scale renewables, a program that would allow cities to prioritize low carbon power, and a local program that would encourage more rooftop solar.

**Q. And what did Boulder want that Xcel said it couldn't deliver?**

**A.** Basically local control. In 2013, we got to the point where the majority of the task force felt like "OK, there's something here really worth pursuing." And the city responded by sending in a couple of councilmembers to say, "Regardless of whether you could meet the carbon goals, here's the other 20 things we want that can only be met by forming a municipal utility." It was clearly designed to blow up our partnership process with Xcel. And it did.


Will Toor

**Q. How much time and money is it going to take for Boulder to get its own utility up and running?**

**A.** There's a lot of uncertainty in that question. All told we are looking at $250 million on the low end [Toor revised this number after feedback] to north of $800 million on the high end.

In terms of time — if all the legal battles go the city's way you could have a muni [energy-wonk speak for "municipal electric utility"] operational by 2022 or 2023. But we might have to build new electrical substations [you know, those (https://en.wikipedia.org/wiki/Electrical_substation) unsightly tangles of transformers and power lines] instead of sharing Xcel's, and that introduces a real wild card. It took Xcel 10 years to build their last substation.

Behold, the majestic substation. Nathanael Johnson

In the meantime, Xcel is on track to get to 55 percent renewables by 2026 in Colorado. That's about what we envisioned when Boulder first started working on generating its own power. The city council wanted to go full speed ahead and planned to have the muni up and running in 2017. At every point where something could go wrong to make it harder and longer and more expensive, it has.

**Q.** **What changed at Xcel?**

**A.** If you go back 15 years, there was broad agreement in the environmental community that Xcel was not a good actor. In 2004, when Colorado created it's renewable portfolio standard to get 10 percent renewable energy by 2020, Xcel claimed it was impossible, that it would bankrupt them and blow up the grid. They spent millions fighting it, and it passed anyhow. To their credit, they then made a good faith effort and pretty quickly realized, "Boy, this *is* pretty easy to meet. And, if we can own some of these assets we can make money doing this."

They started working with environmental advocates and supported increasing the renewable energy standard to 20 percent and then to 30 percent. They supported Colorado's "Clean Air Clean Jobs" bill that basically mandated closure of most of the state's coal plants — replacing those with a mix of renewables and natural gas.

Now, they've been working with the governor and environmental activists to close two more coal plants in Pueblo — Comanche 1 and 2 — and add 1.7 gigawatts of wind and solar, and 500 megawatts of gas.

**Q. That gets us to present day. Boulder just passed another increase in electric rates to help pay for municipalization, but you opposed that. Why?**

**A.** I guess I've become convinced that pursuing the muni does not help to move our clean energy goals forward. That's the first thing.

Second, it just takes so long. We need to be acting on climate change now. Our existential crisis is climate change, not utility business models. I'm fine with changing utility business models, but not if it delays climate action.

Third, I'm nervous about the broader politics. A number of pro-coal groups in Colorado have been starting to focus on utility deregulation. They believe — I think correctly — that if we deregulated utilities it would sort of stall everything from moving forward for a decade. At the same time, a lot of the Boulder muni advocates are also interested in deregulation. You could end up with a right-left alliance that could paralyze action on clean energy while we argued about the details.

A fourth piece: If we teamed up with Denver, and Lakewood, and Breckenridge, and the other cities in Colorado that have 100 percent renewable goals, I think we could accelerate the retirements of Xcel's remaining coal plants.

**Q. I just wrote about Pueblo, which voted to go 100 percent renewable last year. What could they learn from Boulder's experience?**

**A.** To me, the lesson is to try and be very strategic in the way you approach this. Rather than saying, "Corporations are bad, and we need local control," ask, "What is it we are trying to achieve? And how do we use the leverage we have in this muni process to achieve that in the fastest possible way?"

**Q. What do you think about cities setting a goal of going 100 percent renewable?**

**A.** I think these ambitious goals capture people's imagination. It creates a situation where utilities are really engaged in working with cities to get fossil fuels off the grid. That's very different from saying we have the technology to go 100 percent renewable in an economically reasonable fashion. If having that 100 percent goal helps us get to 80 percent, great.

**Q. Anything I haven't asked you that I should have?**

**A.** Well, we're up against some pretty powerful enemies in the climate fight. Electric utilities don't need to be one of them. They can make money by closing their dirty old plants and replacing them with renewables and cleaner energy.

Transportation is now the largest single source (https://www.vox.com/2016/6/13/11911798/emissions-electricity-versus-transportation) of emissions. It runs on fossil fuels. Who can take transportation away from the oil and gas industry? Electric utilities can, by providing the fuel for electric vehicles. So it seems to me that we ought to be cultivating electric utilities as allies in the climate fight.

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## SUSTAINABILITY

***Alliant Energy is an industry leader in renewable energy and continues to add to its renewable energy mix. While Alliant Energy continues to add more wind and solar power to advance our renewable strategy, a city-owned utility would need to rely on less-expensive non-renewable generation sources to meet its daily demands for energy.***

At Alliant Energy, we proudly deliver the energy solutions and exceptional service that our customers and our communities count on – safely, efficiently, and responsibly.

Sustainability means doing the right thing with an eye towards the long run. Our sustainability strategy looks into the future, promoting responsible company growth through the economic environmental decisions that we make today. Alliant Energy has a strong commitment to wind energy, a renewable resource that is abundant in the State of Iowa. That's why sustainability is built into how we provide energy. Our long-term strategic plan continues to include carbon reductions and the expansion of renewable energy. Attached for Council's review is the 2017 Corporate Sustainability Report. A few highlights from the report:

- In late 2017 Alliant Energy completed the largest solar garden in the State of Iowa – a 5-megawatt project in the Dubuque Industrial Center West. This 21-acre site will be planted with pollinator-friendly prairie grass and will have 20 beehives maintained by a local beekeeper.

- In late 2017 Alliant Energy also completed a 1.2-megawatt solar garden on a brownfield site near downtown Dubuque.

- The Marshalltown Generating Station was completed in spring of 2017 and earned the Platinum Envision Award, the highest recognition level under this program.

- Pages 26 and 27 of the attached 2017 Corporate Sustainability Report detail the emissions from fossil fueled generation. As shown on page 26 both the mass and rate for $SO_2$, $NO_x$, Mercury, and $CO_2$ have shown a significant decrease over the past 12 years.

Decorah Power indicated in its presentation to the Decorah City Council on January 16 of its intention to start with a mix of 30% renewable energy. By comparison Alliant Energy plans to generate over 40% of its energy from wind resources by 2021, meaning about one-third more energy will be renewable under Alliant Energy's plan than Decorah Power's plan. Table 1 shows that by 2020 Alliant Energy's largest source of energy will be generated by renewable energy.

**Table 1 – IPL Projected Sources of Energy by Fuel Type**

| Fuel | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| Renewable | 12% | 12% | 21% | 38% | 41% |
| Coal | 41% | 40% | 35% | 26% | 24% |
| Gas | 6% | 9% | 7% | 13% | 12% |
| Nuclear | 20% | 20% | 20% | 20% | 19% |
| Purchased Power | 21% | 19% | 16% | 3% | 3% |

Data Source: Testimony in IUB Docket RPU-2017-0002

# 2017 Corporate Sustainability Report

Alliant Energy™


## Who we are

Alliant Energy Corporation is a Midwest U.S. energy company with annual operating revenues of more than $3 billion. Our company is primarily engaged in electric generation and the distribution of electricity and natural gas. We serve approximately 960,000 electric and 410,000 natural gas customers through our two public utility subsidiaries, Interstate Power and Light (IPL) and Wisconsin Power and Light (WPL). Headquartered in Madison, Wisconsin, Alliant Energy has approximately 4,000 employees and more than 27,000 shareowners of record. Our company is a component of the S&P 500 and is traded under the symbol "LNT."

## PERFORMANCE



**Forward-looking statements**

This report includes forward-looking statements. These forward-looking statements can be identified as such because the statements include words such as "future," "expected," "target," "by 2020," "by 2030," or other words of similar import. Statements that describe future plans or strategies, emissions reductions, generation plans, pipeline replacement plans and energy savings are also forward-looking statements. Such statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those currently anticipated, such as: federal, state or local government actions; failure of equipment and technology to perform as expected; inability to access technological developments, including those related to wind turbines, solar generation, smart technology and other future technologies; plan design changes; changes in environmental laws and regulations; issues associated with environmental remediation and environmental compliance; current or future litigation, regulatory investigations, proceedings or inquiries; changes in tax laws, including changes to production tax credits for wind projects; Alliant Energy's continued access to capital markets; political conditions in Alliant Energy's service territories; and economic conditions in Alliant Energy's service territory.

These factors should be considered when evaluating the forward-looking statements, and undue reliance should not be placed on such statements. The forward-looking statements included herein are made as of the date hereof, and Alliant Energy undertakes no obligation to update publicly such statements to reflect subsequent events or circumstances.

This report identifies certain priority issues. Priority issues are not necessarily material for financial reporting purposes.

## A message from Pat Kampling

At Alliant Energy, we proudly deliver the energy solutions and exceptional service that our customers and communities count on – safely, efficiently and responsibly.

Sustainability means doing the right thing with an eye toward the long run. Our sustainability strategy looks into the future, promoting responsible company growth through the economic, social and environmental decisions we make today. Because it touches on all five of our Core Values, sustainability factors into every one of those major decisions.

That's why sustainability is built into how we provide energy. Our long-term strategic plan continues to include carbon reductions and the expansion of renewable energy. But we also recognize that our company's growth depends on the support of strong, thriving communities in which we serve. And we know that investing in the personal development and well-being of our employees is invaluable. All of these sustainable goals are part of "powering beyond," which will transform, grow and optimize our business well into the future.

Our Core Values shape everything we do.

- **Safety**
- **Integrity**
- **Respect**
- **Service**
- **Responsibility**

The stories you will find in this report provide a glimpse into how we sustainably operate every day. Sustainability is a journey and what you read is all about traveling our road forward. We embrace this journey with confidence and optimism about what we can achieve together, as a collective effort with the businesses, communities and customers we serve.

I hope you enjoy learning about the many ways Alliant Energy is showing our commitment to sustainability through our actions.

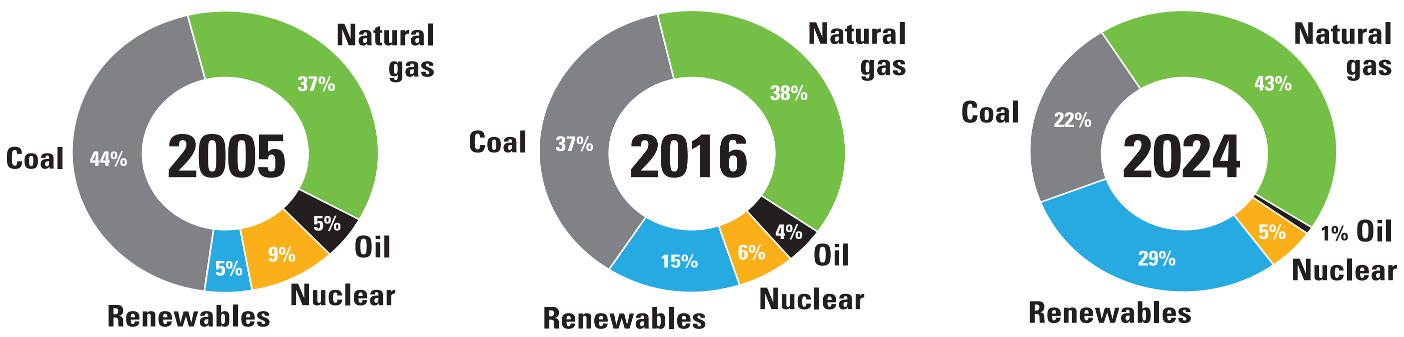
Sincerely,

P. L. Kampling

*Patricia Leonard Kampling*
*Chairman, President and CEO*

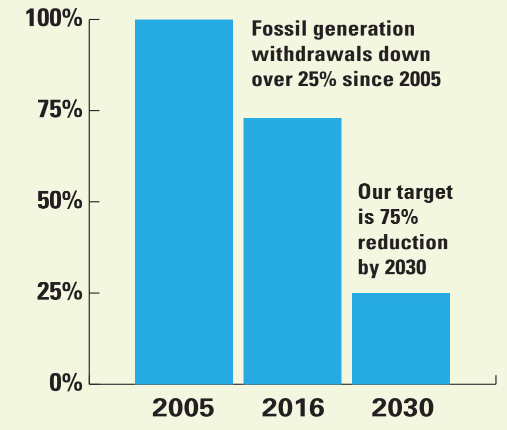
# Our energy

## Transitioning our energy resources*

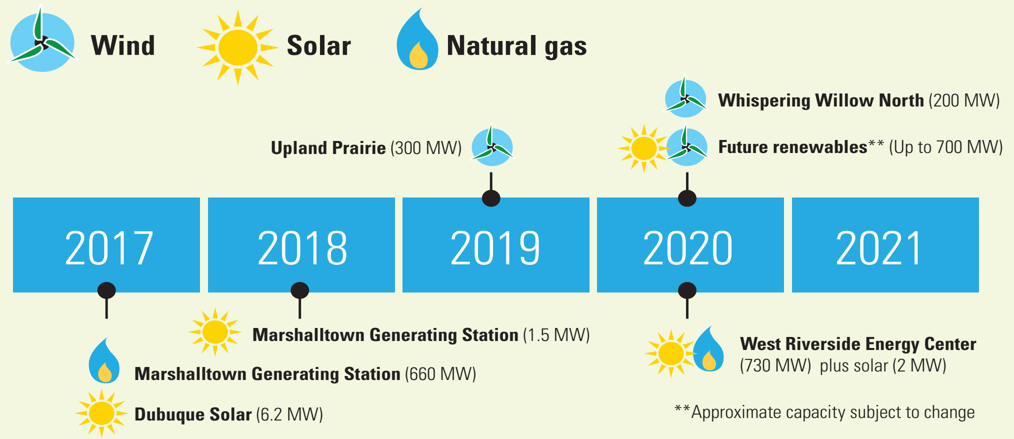



*Based on rated capacity in megawatts

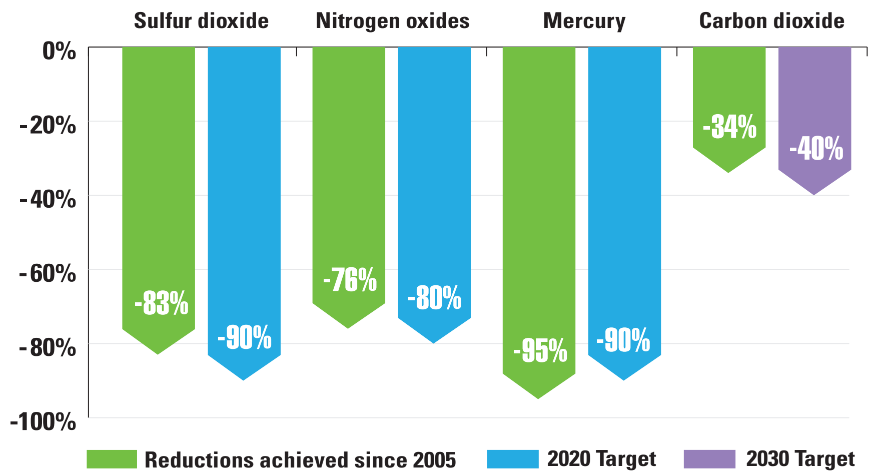
## Reducing our water supply needs




## Planned resource additions in megawatts (MW)




## Reducing our air emissions impact



## Increasing the economic and environmental benefits of wind

Our customers and communities want more of their power to come from renewable sources, such as wind. Our investments in wind are delivering clean and affordable energy to customers, reducing emissions, and helping drive economic growth in our communities.

We're planning to more than double our company's wind generation by the end of 2020 through expansion initiatives in both Iowa and Wisconsin

Our plans include adding over 1,000 MW of wind energy that could power more than 400,000 homes while benefiting rural and other communities.

Families and businesses benefit from our wind investments through good paying construction jobs and employment in supporting industries. Wind projects also provide significant tax benefits to communities and supplemental income for landowners.

We're planning to add over 1,000 MW of new wind capacity by 2020.

# Our owned wind farms

**Bent Tree Wind Farm**
- Freeborn County, Minnesota, 201 MW

**Cedar Ridge Wind Farm**
- Fond du Lac County, Wisconsin, 68 MW

**Whispering Willow Wind Farm**
- Franklin County, Iowa, 299 MW

## New initiative to invest in renewable energy

We are working to further grow our company and reduce our environmental impact. In 2017, we launched an initiative to identify, investigate, and invest in renewable power and sustainable solutions for a wider customer audience beyond those in our service area.

As part of this, we announced an agreement with EDF Renewable Energy (EDF) in June 2017 to acquire a 50% cash equity ownership interest in the 225-megawatt Great Western Wind Farm in Oklahoma. EDF is an industry leader that will maintain and operate the wind farm. The project began commercial operations in December 2016 and provides electricity to Google under a long-term power purchase agreement.

The initiative's innovative solutions will operate separately from our regulated utilities and provides an exciting opportunity to expand our clean energy options beyond our wind resource strategy in Iowa and Wisconsin.

**Iowa Lt. Governor Gregg (left) and Governor Reynolds (middle) visited our Whispering Willow Wind Farm in June 2017 to discuss technology improvements and our expansion plans.**

## Amazing Space provides solar education

Amazing Space is Indian Creek Nature Center's new building and campus in Cedar Rapids, Iowa that opened in September 2016. The environmental education group's 12,000-square-foot structure is specifically designed to meet rigorous sustainability requirements and includes a number of green features. The Nature Center meets its power needs on site through a 105-kilowatt solar-powered system.

Alliant Energy installed, owns and operates the sun-powered source to make Amazing Space a NetZero facility, with the electricity generated equaling or exceeding 100% of its use annually. An outside demonstration panel allows visitors to adjust the position of solar panels relative to the sun to see how it affects power generation. A display shows real-time information on how the solar system is performing.


## Iowa's largest solar project launched in Dubuque

A 5 MW solar garden – the largest in the state of Iowa – will soon be completed in the Dubuque Industrial Center West. This 21-acre site will also be planted with pollinator-friendly prairie and have 20 beehives maintained by a local beekeeper. A second 1.2 MW garden will revitalize a former foundry site near downtown, as part of a brownfield redevelopment.

Both are expected to begin generating energy in late 2017. In addition to producing clean energy, the facilities will provide valuable insight on how to develop similar sites in collaboration with communities and customers across Iowa. In total, more than 19,000 panels will be installed and will produce enough energy to power over 800 homes.

## Flexible natural gas generation complements renewable energy

Highly efficient natural gas generation can be adjusted up and down quickly. This flexibility supports the variable nature of wind and solar. As a result, customers have energy when the wind doesn't blow and the sun doesn't shine.

In spring 2017, the 660 MW Marshalltown Generating Station in Marshalltown, Iowa, went into operation and is producing enough energy to power more than 500,000 homes. In addition, we will be adding 1.5 MW of solar and a 250-kilowatt battery system in 2018 to offset its auxiliary power needs.

Our West Riverside Energy Center began construction near Beloit, Wisconsin, in summer 2016. This 730 MW site will also include 2 MW of solar. In total, it will provide power to more than 560,000 homes when put into service by early 2020.

Natural gas facilities provide reliable and cost-competitive energy. Natural gas supports a balanced and diverse energy mix that complements the development of renewable energy.

**New Marshalltown Generating Station**

## Integrating sustainable solutions into generation

**1st Project in Iowa**

Our new natural gas facilities in Iowa and Wisconsin are a unique opportunity to apply Envision™ as a sustainability rating system and best practice resource. Envision measures the sustainability of an infrastructure project from design through construction and maintenance.

The system is used to meet sustainability goals, help communities and project teams collaborate, prioritize and make decisions about the investment of scarce resources. Envision views a project through a different lens, resulting in actions that may not have been considered. For example, we created public space with interpretive signage via a Native Prairie Nature Trail at our Marshalltown Generating Station property with the use of this system.

Our Marshalltown Generating Station earned a Platinum Envision award, the highest recognition level under the program. Our West Riverside Energy Center is still under construction, but we have set a similar goal for that facility. We are also beginning the Envision certification for our owned wind development sites.

### Award-winning Marshalltown Generating Station

Diverted more than **95%** of materials from the landfill through a combination of construction material recycling and reuse efforts

More than **50% reduction** in potable water use compared to a traditional coal-fired electric generating facility of comparable output

ENVISION™

Source: HDR

A lifecycle greenhouse gas assessment revealed that the facility is expected to **reduce emissions** by more than **40%** over a 25-year period compared to traditional coal-fired generation

More than **$50,000** invested in training for local emergency responders to enhance confined-space and high-rescue capabilities

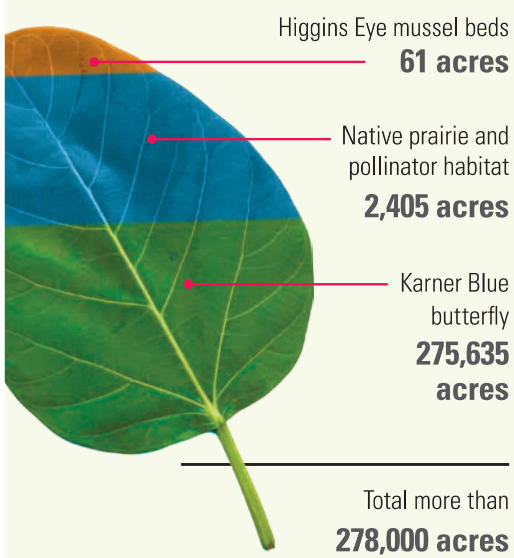
Avian-safe poles discourage perching or nests

## Protecting our flying friends

We work hard to prevent and minimize impacts on birds from our poles, wires, wind farms and other infrastructure. We are developing a voluntary Avian Protection Plan with a goal to build new infrastructure to avian-safe standards and retrofit existing equipment that have experienced adverse impacts.

As part of the plan, we are developing an avian risk assessment tool to determine the highest risk areas (such as near wetlands or flyways) so we can take enhanced action in those regions to protect birds. Alliant Energy is a member of the Avian Power Line Interaction Committee, a national organization formed to improve electrical grid reliability by addressing bird-to-power line interactions.

## Ecosystem and habitat support




Students weave twigs for starter nest on platform.

## Helping Ospreys soar

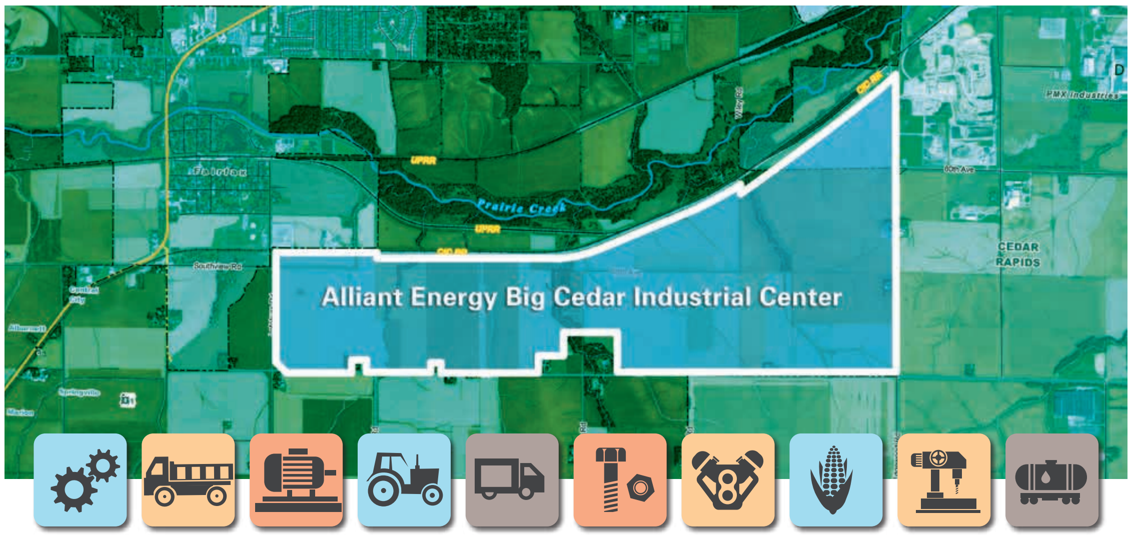
Ospreys were once endangered, but efforts over the past few decades have increased their populations. Alliant Energy has helped to install dozens of alternative nesting platforms. In spring 2016, we led a cooperative effort with high school students from Montello, Wisconsin.

## Our land is their land

Alliant Energy has committed 75 acres of land to a unique program known as the 1,000 Acre Pollinator Initiative. The plan started as a suggestion from the Monarch Research Project (MRP), a nonprofit dedicated to reversing Monarch butterfly declines. In 2016, the MRP approached the city of Cedar Rapids with the idea to convert unused public land into pollinator habitat. The city proposed creating 1,000 acres of prairie over five years.

In spring 2017, Cedar Rapids started the project by seeding nearly 200 acres of land with native prairie grass, milkweed and wildflowers to create a diffuse haven for bees, butterflies and other pollinators. In addition to the MRP, our company is continuing to support research efforts by the Iowa Monarch Conservation Consortium.

# Our communities




## Creating new jobs and investment with unique industrial park

Bringing new jobs and investment to our communities creates opportunities and helps make lives better for our customers. In late 2016, our company launched development of the 1,300-acre Big Cedar Industrial Center on the southwest edge of Cedar Rapids, Iowa. It will be the state's largest business park and combines innovative features and expansive space to attract new companies and employment.

Alliant Energy, the city of Cedar Rapids, the Iowa Economic Development Authority and the Cedar Rapids Metro Economic Alliance will market the property for development nationally and internationally. Work is underway to get Big Cedar certified as a "Mega" industrial park, which typically offers more than 1,000 acres of land ready for development. The ability to provide sites that are immediately ready for building large facilities makes this property unique. The location also offers close airport proximity and interstate access.

Our company has acquired options on the land and will support the marketing of the industrial park to attract large energy users that in turn can reduce future cost increases for all customers. Big Cedar Industrial Center will be one of the largest rail-served manufacturing and industrial sites in the Midwest.

## Reuse of our former Blackhawk facility enters building phase

The private-public partnership to redevelop our Blackhawk Generating Station in Beloit, Wisconsin, accomplished another milestone. The building phase has begun to convert the generating facility structure into a student union and recreational center for Beloit College.

Around 300 local leaders, residents, faculty and staff attended a groundbreaking event in June 2017. Beloit College President Scott Bierman, Principal of Studio Gang Architects Jeanne Gang and Patricia Kampling, Alliant Energy Chairman, President and CEO led a program to celebrate.

Plans for the project started in 2010, with the college needing to reach a funding target for Alliant Energy's transfer of ownership to take place. The dollars have been raised to proceed, construction has begun and the new state-of-the-art student center is set to open in the fall of 2019.



## Feeding families in need through mobile food pantry support

Mobile food pantries play an important role in supplementing the work of partner food pantries, shelters and meal sites operating in fixed locations. Mobile pantries offer another flexible source for providing food to families and individuals facing hunger. Our company continues to support mobile food pantries. Recent examples include:

- $90,000 investment in Second Harvest Foodbank of Southern Wisconsin to support three years of mobile food pantries for people in Rock and Grant counties. This followed an earlier $50,000 investment in the same program.
- $77,000 investment to purchase a food pantry truck for the Hawkeye Area Community Action Program food reservoir in Iowa.

Local events supporting food pantries also take place on a regular basis. For example, last year Alliant Energy supported Feeding America Mobile Food Pantries in Fond du Lac and Sheboygan, Wisconsin. Combined, these efforts provided more than 17,000 pounds of food for nearly 600 individuals.


## "Driving Out" hunger in our communities

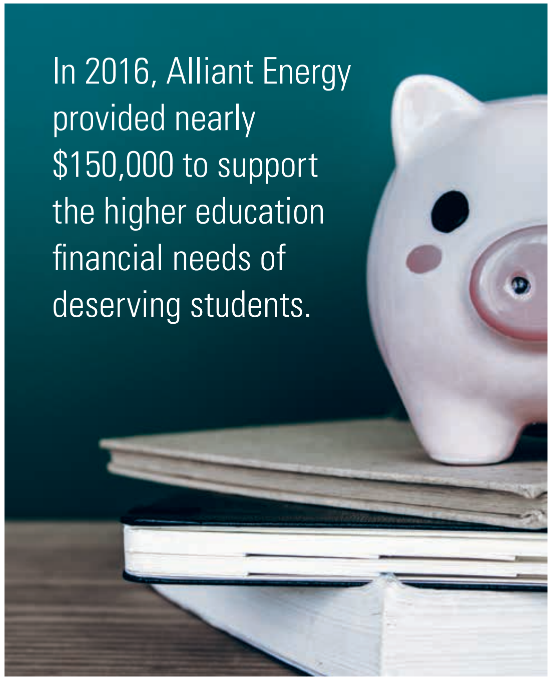
Since 2007, Second Harvest and six other food banks that serve our communities have received more than $2.5 million – the equivalent of 10.5 million meals – from the 10-year proceeds of our Drive Out Hunger Golf Classic fundraising initiative. In 2016, the event raised over $400,000 from Alliant Energy and its business partners for local food banks.

Our company, Foundation, employees and retirees regularly support mobile and permanent food pantries across our service area.

## More than two million dollars helps keep families safe and warm

We recognize that energy bills during the heating season place an additional burden on families with limited incomes. Our *Hometown Care Energy Fund*, which is administered through local assistance agencies, provides financial help for heating costs to income-eligible customers across our service area.

In early 2017, Alliant Energy contributed $2 million to the Fund to help Iowa and Wisconsin customers. Employees, retirees and customers across our two states also pitched in with more than $138,000 in 2016 to make sure their neighbors had a safe and warm home.



In 2016, Alliant Energy provided nearly $150,000 to support the higher education financial needs of deserving students.

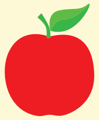
## Supporting the educational aspirations of young adults

We want to recognize outstanding community leadership in young people and help them reach their academic goals. We do just that through Alliant Energy's Innovation Scholarship Program.

Each year, we provide up to 25 $1,000 scholarships to future college students who have a desire to make a positive impact in their communities. These bright young minds suggest innovative ideas to address social, economic, educational and environmental issues within our communities. These scholarships provide support for a full-time undergraduate course of study at an accredited two- or four-year college, university or vocational-technical school located within the Alliant Energy service area.

Alliant Energy Foundation

## Focused on giving



Education
$353,300
+

Helping families
$221,200
+

Environment
$81,900
+

Matching gifts
$552,900
+

Hometown safety
$32,800
+

Volunteer grants
$114,300

Total 2016 giving $1,356,400

## The Girls Make Electric Guitars project exposes students to technical fields

A 2016 summer girls STEM (Science, Technology, Engineering and Mathematics) project had students using software and machinery, as well as their engineering and design skills, to make electric guitars. The Alliant Energy Foundation helped support this weeklong camp for seven girls as they explored manufacturing concepts and processes through electric guitar building.

Fab Lab Stoughton, a community-based technology incubator located in Stoughton High School, was the site for the Girls Make Electric Guitars project. We joined with Wisconsin's Stoughton Area School District, the Stoughton High School Music Department and local businesses to financially support the creative initiative. Alliant Energy has also regularly provided funding for Fab Lab Stoughton, a facility that contains 3D printers, laser engravers, computer numerically controlled milling machines, computer-guided routers and a programmable vinyl cutter.



## Launching a second-grade pilot robotics program

Robotics in a second-grader's curriculum may seem like a stretch. However, thanks to a grant from our Alliant Energy Foundation, that's exactly what's in place at Richardson Elementary in Fort Madison, Iowa. Teacher Krys Plate applied for the grant to purchase LEGO WeDo Kits for her class.

The kit's software and training materials enabled the start of a pilot robotics program. Students use the tools to design, build, test and modify their robots. Projects include real-life examples like designing a Mars land rover or programming a series of other working models with sensors and motors. The second-graders are keeping track of their work as they plan, build and present their findings.

## Educating all ages on nature's wonders

Ringgold County, Iowa, has a population of fewer than 6,000 people. The County Conservation Board was looking for ways to promote its part of southwest Iowa and improve the area's quality of life. With one of the Board's priorities being environmental education, the idea came forward to build a nature center. None were located in the counties surrounding Ringgold County, and creating one could increase recreational and educational opportunities for residents. With support from the Alliant Energy Foundation and many other funders, the Dragoon Trace Nature Center broke ground in summer 2016, and it is expected to be in operation by the end of 2017.

## Recreational experiences brought to campers and caregivers

Wisconsin Badger Camp serves individuals with developmental disabilities in communities all over the state, regardless of the severity of their disability or financial situation. The Alliant Energy Foundation provided support for their Campership Program for Grant County- and Platteville-area campers in the summer of 2016.

The program is an ongoing initiative for financial assistance to campers and their families/caregivers who wish to attend the outdoor programming Wisconsin Badger Camp offers. The camp is a weeklong outdoor experience in a safe and fun environment. Our funding addressed the needs of 44 campers and their families/caregivers.

## Getting children away from "the screen" and into the outdoors

A grant from the Alliant Energy Foundation is helping get kids interested and involved in the outdoors. Students and teachers from Bridges Elementary in Prairie du Sac, Wisconsin, built an outdoor learning environment at the school's campus. The outdoor space includes a native prairie, native woodland, meadow, raised garden beds, sand bed and a classroom with rock benches. Students were involved in all aspects of the project, from preparing the sites for planting to studying the flora and fauna in each of the environments. It is now available for school and community use.

## Ensuring safety in times of crisis

Hometown Safety Grants are awarded to organizations and for projects that serve or protect the community. This includes police and fire departments, as well as schools, libraries and other public service organizations. In 2016, the Foundation helped 21 recipients make their communities safer places to live and work. Typical projects include Jaws of Life or thermal-imaging cameras, defibrillators, community emergency alert systems and personal protective equipment for service providers.

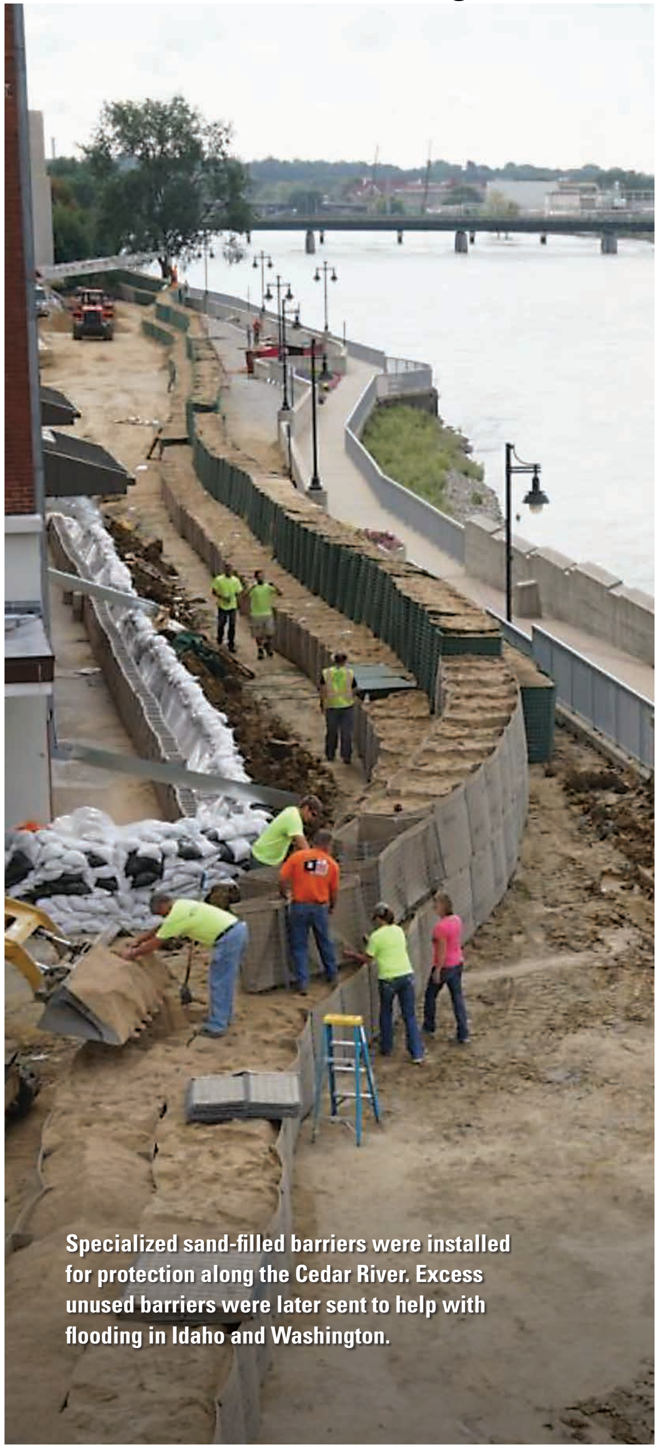
# Our customers

## Planning equals success for 2016 Cedar Rapids flooding

The Cedar River normally flows through Cedar Rapids at a depth of four to seven feet. In late September 2016, very heavy rains sent a flood of water downstream. The forecast called for the river to crest between 24 and 25 feet. While several feet lower than the flood of 2008, our customers, employees and facilities were once again in the path of rising water and potential harm.

Our employees jumped into action over the course of the event. They constructed flood walls and worked extra hours in temporary locations to keep our customers connected, safe and informed. Success was due to the planning, problem-solving and cohesiveness of our crisis management and restoration emergency operations teams. These teams ensured business continuity while protecting buildings, securing critical infrastructure and keeping people out of harm's way during the flood.

To help areas that experienced water damage, we increased energy efficiency rebates by 50% for flood-affected customers across 21 counties through the end of 2016. Our goal was to offset the financial impact of replacing equipment like furnaces, air conditioners, water heaters, heat pumps and whole-house fans.



**Specialized sand-filled barriers were installed for protection along the Cedar River. Excess unused barriers were later sent to help with flooding in Idaho and Washington.**

## Strengthening the power grid

The U.S. power grid – a combination of poles, wires, substations and other equipment – is aging. With our customers in mind, we have developed a long-term plan to build smarter energy infrastructure and enhance the resiliency of our electrical distribution system from natural disasters and extreme weather.


### Our grid by the numbers

42,165 **miles of lines**

1,040,046 **utility poles**

$100,000 **to replace each mile of line**

866 **substation transformers**

**Improving reliability**: In the last five years, we've been able to reduce the length of outages by nearly 30%. One way we're making the power grid more reliable and secure is by putting more equipment underground. We're also installing stronger poles, larger wires and more robust equipment.

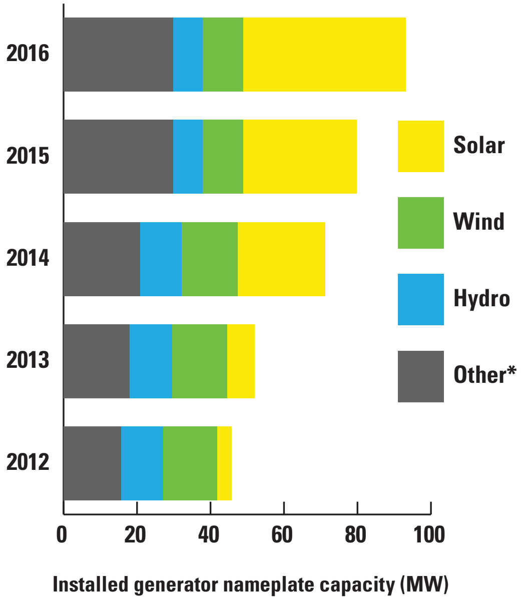
**Reduced costs with higher voltage lines**: We're upgrading our lines, transformers and substations with 25-kilovolt equipment, which can carry about four times as much power as today's system. Because power travels further at higher voltage, it requires fewer substations. This saves money for our customers.

**Integration with customers who make their own power**: The power grid was originally built for a one-way flow of energy – from generating stations to customers. Today, utility companies aren't the only ones producing power. Customers with solar panels or other systems are producers, too. We're optimizing our grid to enable the new two-way flow of energy and information.

## Enabling customer-owned renewables

Customers can connect their owned renewable generation to our electric system. They use our electric system to sell power to us when their systems produce more than is needed and buy power from us when their systems don't produce enough. For years, we've purchased the excess power from customers who have installed solar panels, small wind turbines and other renewable generation sources. We currently have over 3,000 renewable energy projects connected to our system totaling over 90 MW of nameplate capacity.

## Customer-owned renewable generation growth




* Various other renewables including biomass and biogas


## Electric vehicle use offers cool benefits

There are some cool benefits to owning an electric vehicle (EV). You don't have to worry about gas money, you can cash in on rebates and you shrink your environmental footprint. We have been working on a number of initiatives to encourage the use of EVs throughout our service area. Here are a few examples:

- Our *Bright Ideas* program provided a $50,000 grant to the Renewable Energy Committee for Burlington, Iowa, and the dollars were used to purchase fast-charging stations in 2016.
- As part of our workplace charger rebate program, we provided $1,500 to Beloit Hospital to support installation of its first electric car charging station in early 2017.
- Ride, Drive and Learn events were held to showcase electric vehicles from local dealerships, charging stations and informational exhibits.
- We continue to offer up to a $500 rebate for the purchase and installation of a Level 2 home charging station.

## Cheesemaker gets boost from energy efficiency improvements

Swiss Heritage Cheese in Monticello, Wisconsin, made significant energy efficiency improvements in 2016. The project saved them $3,000 per month in energy costs. A $72,000 grant from Focus on Energy (FoE), Wisconsin utilities' statewide energy efficiency and renewable resource program, helped pave the way for the improvements.

The savings allowed them to add another production line, put in place a second shift of workers and increase the number of employees. Alliant Energy provides financial support for the FoE program. Our key account managers work regularly with the FoE organization to bring energy efficiency resources to our business customers.

## Celebrating 20 years of energy education

Alliant Energy's *PowerHouse* is an award-winning educational resource and television program that debuted in 1996. This half-hour weekly program has a unique focus on home energy, including heating, cooling, insulation, lighting, safety and more.

## Getting Iowa communities excited about energy efficiency

Our *Hometown Rewards* program recognizes Iowa communities for cutting back on energy use. We partner with towns to set energy-savings goals and find ways to meet them over a two-year period. If goals are met, Alliant Energy helps fund an energy-efficient project chosen by the community.

*Hometown Rewards* launched in the city of Newton in 2015 with their results including:

- Over 6,500 Newton citizens participated in a *Hometown Rewards* event, more than double the original goal.
- Newton successfully reduced their residential energy consumption by more than 4%.
- The city government cut energy use by more than 8% with projects in their water department.
- Newton business and industry saved more than 95,000 kWh of electricity through rebates, exceeding their goal of 7,700 kWh.

Newton's achievements through participation in the *Hometown Rewards* program were recognized with an award of $30,508. In June 2017, Newton celebrated their success with a public event at the Newton Arboretum. A new solar pergola addition to the arboretum will be funded in part with the *Hometown Rewards* award funds.

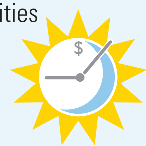
Our company is currently working with Iowa Falls and Centerville on their *Hometown Rewards* programs.



## Innovative rate options

In 2017, we introduced new economic and environmentally-friendly electric rate options for our customers.

### Time-based pricing



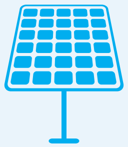
- Providing our Wisconsin customers opportunities to manage their costs in our new *Time of Day* rate plans. We are also proposing to reduce the cost for Iowa customers to participate in our *Time of Day* program.
- Offering demand rates to Wisconsin agricultural, small commercial and residential customers (already available to large commercial and industrial customers) with similar programs proposed in Iowa.
- Continuing to introduce market-based pricing options like hourly pricing for industrial customers.

### Community support

- Requested regulatory approval for a limited-income rate pilot for three Iowa communities that will help with past due bills for qualifying customers.
- Proposed a new Iowa economic development rate option to promote reuse of closed or shuttered industrial facilities in the Iowa communities we serve.
- Introduced a *Fixed Amount Bill* pilot in Wisconsin that will provide a flat bill amount for customers who value budget certainty.
- Continuing to introduce LED lighting for area and street lighting. In Wisconsin we anticipate having 100% LED street lighting in the next 6 years.

### Renewable power

- Cut the rate to subscribe to our voluntary green power program, *Second Nature,* by 30% in Wisconsin and proposed a 50% reduction in Iowa.
- Proposed an additional program, *Beyond Solar*, that will let Iowa customers select a level of support for solar and wind generation.



- Offering rebate programs and pricing plans to encourage electric vehicle use in both states.

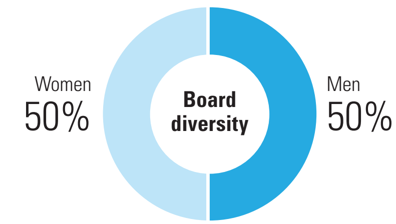
# Our workplace

## Achieving the highest level in Wisconsin's sustainability program

We were recognized as a 2016 "Green Master," the highest level in the Green Masters Program, established by the Wisconsin Sustainable Business Council. The program assesses Wisconsin businesses interested in improving and being recognized for their sustainability initiatives.

Our company was evaluated on sustainable actions in nine areas: energy, climate, water, waste management, transportation, supply chain, workforce, governance, and community and educational outreach. We join a select group of 35 Wisconsin businesses as "Green Masters," an honor that distinguishes the top 20% of applicants.

## Gender diversity in the boardroom




While many companies are still working to achieve a balanced representation of women on their boards of directors, our company has accomplished it. According to a national study by Catalyst, a non-profit trying to expand opportunities for women and business, Alliant Energy is one of a handful of S&P 500 companies that have reached gender parity on their board. The same research showed that women on boards of S&P 500 companies average 19.9%.



Reference: Pyramid: Women in S&P 500 Companies.
New York: Catalyst, March 1, 2017



## Consistently a 'best place' to work for LGBT employees

The Human Rights Campaign Foundation released its 2017 Corporate Equality Index (CEI) in December 2016 of the best places to work. Our company scored 90 points out of a possible 100. That maintains our 2016 score, which was up five points from previous years' scores.

The CEI rates companies on Lesbian, Gay, Bisexual and Transgender (LGBT) workplace equality and is considered the national assessment tool on corporate policies and practices pertaining to LGBT employees. Our Diversity and Inclusion department participates in the survey to demonstrate support for our LGBT employees and communities. You can view or download the complete 2017 CEI at *hrc.org/cei*.

## Valuable interactions between employees

Alliant Energy's Employee Resource Groups (ERGs) offer forums to network, support and share issues important to employees. They also serve as focus groups, providing feedback to the Diversity Office. Being a part of an ERG offers an opportunity to learn, attend development and social events, and network with fellow employees.

Our employees are encouraged to start new resource groups. We currently have the following ERGs: Emerging Professionals Connection, Equality Alliance, Multicultural Network, Sustainability Squad, Women's Network and the Veterans' Alliance.


## Employee projects lead to new Iowa and Wisconsin homes

In 2016, Alliant Energy employees swung hammers and drove nails as they built the walls and panels of two homes in our parking lots: one at our Madison General Office and one at our Cedar Rapids Operations Center. The Habitat for Humanity "panel builds" had our employees construct the walls of a house, which were then sent to a neighborhood site where more volunteers completed the structure.

A family in need moved into the Cedar Valley Habitat for Humanity home at the end of 2016. The house is located in the Cedar Rapids area. The Habitat for Humanity Dane County home occupants moved into their residence near the end of February 2017. The four-bedroom ranch is located in Oregon, Wisconsin. The families worked alongside volunteers to build "sweat equity" in their new homes.


## 12 Days of Giving focus on helping families and volunteering

Throughout the holiday season, it's easy to find daily reminders that so many people in our communities require help with their most basic needs. Food and clothing drives, meal service programs and warming or overnight shelters tend to take center stage. Our 12 Days of Giving campaign, held from November 28 through December 9, 2016, focused on how we could help families during the holidays. In our offices throughout Iowa and Wisconsin, our employees gave back in a number of ways.

A few examples included bell ringing for the Salvation Army, holding holiday food and gift drives, stocking gift giving trees, supporting holiday lighting displays and helping with Meals on Wheels meal preparation.

In 2016, our combined employee and corporate giving to United Way was $1.19 million. These dollars went to 60 agencies in our service area to assist communities during 2017.

Employees attend the "Tour a Training Center" class in Fond du Lac, Wisconsin, to learn about daily duties of our operations crews through a hands-on experience.

## Reducing injuries with a "Green Hat" program

Our Edgewater Generating Station noticed an increase in injuries for new employees or employees new to positions. The facility's safety team met with an area manufacturer that had an award-winning safety program to see what worked for them. This resulted in piloting an at-risk monitoring initiative, or what has become popularly known as the "Green Hat" program.

The program consists of a one-on-one approach to help employees recognize the hazards associated with their new positions. Key elements of the program include at-risk monitoring for the first 60 working days. Employees also wear "At Risk New Employee" green hard hats until successfully completing the test.

### Key elements of the Green Hat program include:

- Daily five-minute safety discussion with direct supervisor
- Participation in and documentation of a daily pre-job briefing
- A minimum of one safety observation per week
- Involvement in department safety activities
- Behavioral safety training
- Weekly progress updates with department manager/ plant manager

## Offering career enhancement opportunities to our employees

A key piece to our company's Core Value of responsibility is "developing our employees." They are encouraged to take advantage of available opportunities that foster their continued growth. Our Development Coach is an online tool for finding resources to develop skills. We offer resources such as 30 on-site classroom courses, online training, assessments and a library that offers a wide selection of job skills and leadership-related books. Employees also have access to tuition reimbursement of up to 70% for continuing education. More than 200 employees have taken advantage of this program from 2014 through 2016.

Our workplace

## Local union partners with Code of Excellence program

Several years ago, the International Brotherhood of Electric Workers (IBEW) designed a program to bring out the best in its members. The Code of Excellence (COE), which includes classroom training, work site education and adhering to the strictest standards of professionalism, ensures that everyone is on the same page when it comes to a job.

The unique partnership, jointly administered by the IBEW Local 965 and Alliant Energy, emphasizes communication and leads to increasing returns on worker productivity, job site efficiency and accountability. The COE has created a structure for dialogue to reduce issues and grievances, which has made the relationship better. The COE's collaborative approach for labor and management to proactively address issues is resulting in an improved and safer workplace for everyone.

## Tapping innovation for worker safety

Generating station work often involves physical tasks that have the potential for injury if not performed correctly. Our Ergonomics department uses a tool called a Wrenching Gym to provide hands-on training at all of our generating facilities.

The Wrenching Gym training makes the user choose the best position and technique, and then have a discussion with a certified ergonomist about the body position. The gym helps increase fitness and skills when moving and carrying objects that generating station work requires. This training also improves hazard recognition and overall ergonomics and safety.

## Solar learning lab data portal goes live

At our Madison General Office, we are learning more about how solar energy and energy battery storage technologies work in our region as well as supporting the use of electric vehicles (EVs). We are gathering operational data on 10 different models of solar panels that employ three different types of technologies. The panels have a total capacity of 300 kilowatts – enough to power about 55 homes. The output will offset approximately 10% of the annual electric consumption for our general office building.

We've installed "Level 2" or 240-volt EV charging stations (similar to what an electric dryer or oven uses) and are tracking their usage. Within our building, a 30-kilowatt battery storage system allows us to store power and test the impact of shifting use to manage peak demand and electricity costs. We will be adding a second 250-kilowatt battery system in 2017 giving us flexibility to test more research scenarios.

To share our knowledge, we've created a data portal that can be accessed at *alliantenergy.com/solar*. You can view:

- Live and historic data alongside weather conditions and solar irradiance levels
- How the different solar technologies compare to one another
- How the battery energy storage system is performing
- Photos, video clips and interactive charts

## Building awareness of careers in energy

The energy industry is rapidly evolving, and our company is pursuing partnerships to support an educated and prepared workforce that keeps pace with these changes. We are a member of the Wisconsin Energy Workforce Consortium, with support and oversight from the Center for Energy Workforce Development. Activities include "Career in Energy Week," "utility preview day" at various locations, University Challenge, K-12 Energy Education Program and attendance at various STEM initiatives.

## Training the energy workers of tomorrow

In early 2017, Alliant Energy donated $100,000 to Moraine Park Technical College for a Gas Utility Technician program. The college is setting the stage for the new program at its Beaver Dam, Wisconsin campus alongside a $2.3 million energy education center.

The center is scheduled to begin construction in spring 2018 and graduate its first class of gas utility technicians in 2019. Investing in this program and its students helps build a talent pipeline for our company and industry. The Gas Utility Technician program is expected to provide critical training for skilled workers in natural gas, propane and gas utilities needed over the next decade.

**Students from our University Challenge offer fresh ideas on battery technologies, electric vehicles expansion and microgrids.**

## Home Base Iowa brings veterans to our company

Our company is a proud supporter of Home Base Iowa. The program provides veterans and transitioning service members and their families with opportunities for a successful transition in Iowa. Participating in this public-private partnership has helped Alliant Energy hire over 40 veterans since it launched in 2014.

Many veterans have filled posts in our operations centers and generating stations by tapping their broad technical skills and abilities to work in a variety of environments. As Alliant Energy grows our workforce, veterans will continue to be a key group for filling job openings. Veteran employees bring skills, qualities and a strong work ethic that fit well at our company.

# Our performance

## Our sustainability pillars

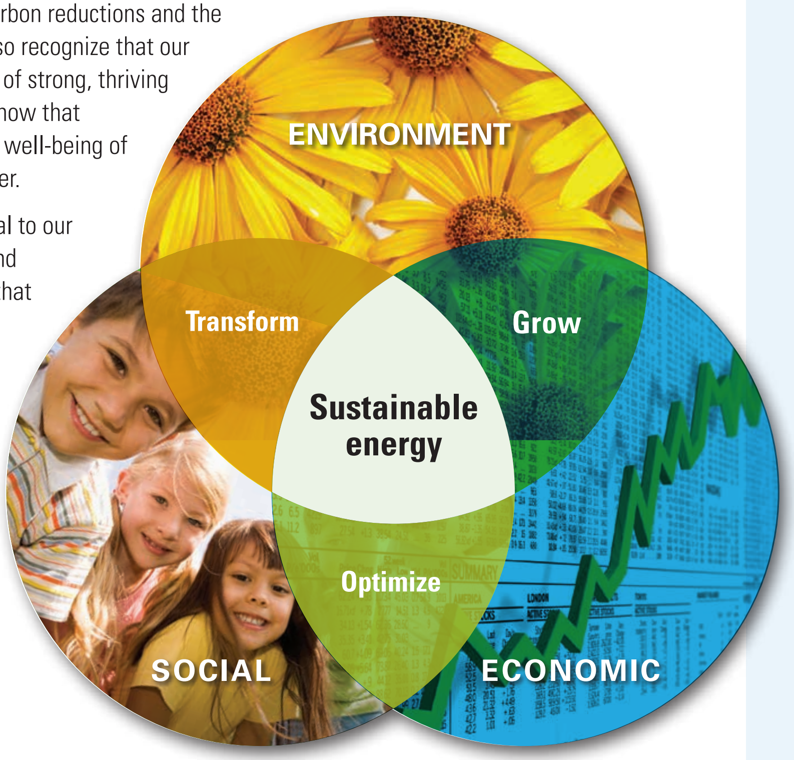
Sustainability means doing the right thing with an eye toward the long run. Our sustainability strategy looks into the future, promoting responsible company growth through the economic, social and environmental decisions we make today. Because it touches on all five of our Core Values, sustainability factors into every one of those major decisions.

That's why sustainability is built into how we provide energy. Our long-term strategic plan continues to include carbon reductions and the expansion of renewable energy. But we also recognize that our company's growth depends on the support of strong, thriving communities in which we serve. And we know that investing in the personal development and well-being of our employees brings value many times over.

Achieving balance has always been integral to our company's operations. Our energy vision and strategy embraces four guiding principles that are grounded in sustainability:

- Innovative customer solutions
- Advancing clean energy
- Building a smarter, stronger power grid
- Strengthening our communities

All of these sustainable goals are part of "powering beyond," which will transform, grow and optimize our business well into the future.




## Responsibility

Sustainability is not delegated to just one group of employees at Alliant Energy, it's how we do business and embodied in our Mission and Core Values.

To further enhance our sustainability performance and provide for greater transparency, our company's sustainability management provides for cross-functional representation, leadership and oversight.

**Safety, Environmental, Policy and Operations Committee of the Board of Directors**

- Comprised of solely independent directors
- Provides oversight of sustainability
- Approves this report

**Environmental Services and Corporate Sustainability Department**

- Coordinates company sustainability initiatives and reporting
- Reports to Senior Vice President of Utility Operations

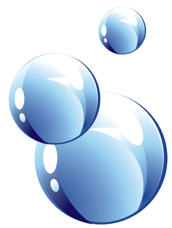
**Sustainability Leadership Team**

- Consists of decision-makers from across the company
- Aligns and advances sustainability throughout the company

Our company publishes this Corporate Sustainability Report to share our story, progress and plans. We welcome suggestions on the content of this report from our stakeholders to improve its usefulness.

## Water management

Primary watersheds for Alliant Energy operations include the Great Lakes and Upper Mississippi River drainage basins of the United States. A watershed is the area that drains to a common waterway, such as a stream, lake, river, estuary, wetland, aquifer or even the ocean. The primary source of water supply to support operations at each of our generating facilities is provided in the table to the right. In addition, the company's generating stations may supplement water use with well water and city water.



In 2016, the estimated total IPL and WPL water use from base load utility generation operations was 9.2 billion gallons, which is approximately equivalent to 590 gallons/MWh. We predominantly use water to make steam and cool equipment. Most of this "non-contact" cooling water is pumped through the generating station in closed-loop piping systems. This allows the water to cool process equipment without ever coming into direct contact with it. Therefore, our actual water consumption is very low with over 95% returned for subsequent reuse. All water discharges meet federal and state regulations for freshwater quality.

| Utility | Generating station | Primary water source* |
|---|---|---|
| WPL | Columbia | Wisconsin River |
| WPL | Edgewater | Lake Michigan |
| WPL | Nelson Dewey** | Mississippi River |
| WPL | Riverside | Groundwater |
| IPL | Burlington | Mississippi River |
| IPL | Dubuque | Mississippi River |
| IPL | Emery | Clear Lake Sanitary District |
| IPL | Fox Lake | Fox Lake |
| IPL | Lansing | Mississippi River |
| IPL | ML Kapp | Mississippi River |
| IPL | Marshalltown*** | Marshalltown Water Works |
| IPL | Ottumwa | Des Moines River |
| IPL | Prairie Creek | Cedar River |
| IPL | Sutherland | Groundwater |

Notes:

* Non-contact cooling water is returned to the river or lake that is the primary source of water, except as noted below.

Riverside Energy Center uses groundwater as the main supply and discharges to the Rock River.

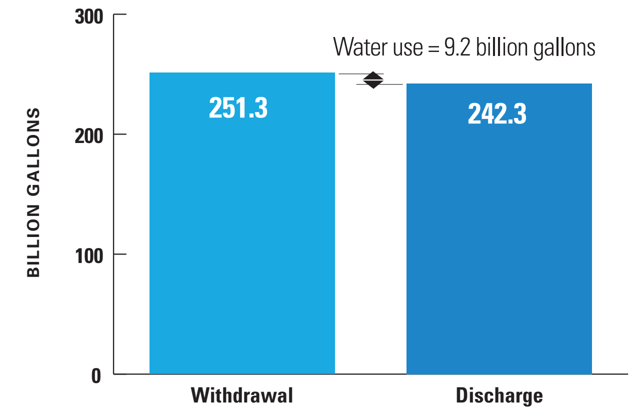
The Emery Generating Station uses treated sanitary water, also called "grey water," from the local Publicly Owned Treatment Works (POTW) as the primary supply and return.

The Sutherland Generating Station uses groundwater as the main supply and discharges to the Iowa River.

**Nelson Dewey Generating Station was retired on December 31, 2015; however, data reported includes facility operational water use during 2016 from decommissioning activities.

***Marshalltown Generating Station went into service in April 2017 and uses city water supply.

### 2016 water use




Water use for 2016 is determined as the difference between withdrawal and discharge, taking into consideration estimated amounts of utility process water consumed due to evaporation and process wastewater. Water withdrawals include city water, groundwater and river or lake surface water intake. Water discharge includes once-through cooling, cooling tower blow-down and ash pond effluents.

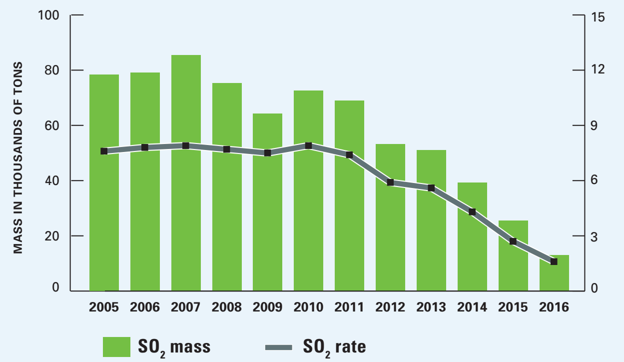
Source: Alliant Energy records and EPRI 2015 Technical Report, Evaluation of Freshwater Withdrawal and Consumption in Electricity Generation Based on Future Projections to 2030.

Our performance

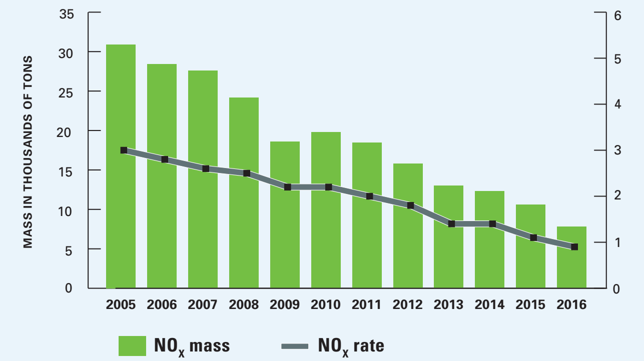
## Fossil fuel generation emissions

The fossil fuel generation emissions figures represent the releases to air from the production of electrical energy in a given year. This includes all fossil-fueled electric generating units with a design nameplate capacity of 25 megawatts (MW) or greater that are equipped with continuous emissions monitoring systems (CEMS). Data is from 2005 to 2016, except for mercury, which had CEMS installed beginning in 2009. The fossil fuel generation emissions are aggregate totals for our overall fleet, adjusted for Alliant Energy's share of joint-owned units. Emission rates are measured on the basis of MWh gross output of electricity production.

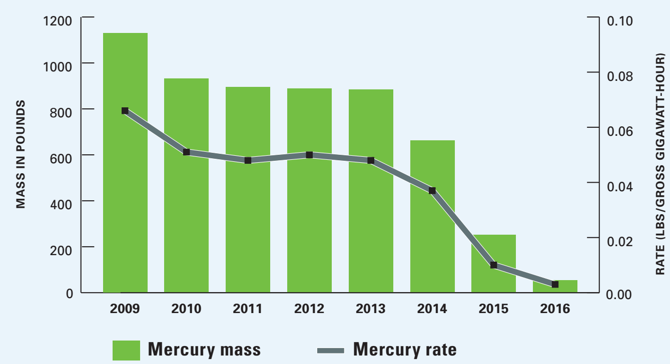
## Sulfur dioxide ($SO_2$)



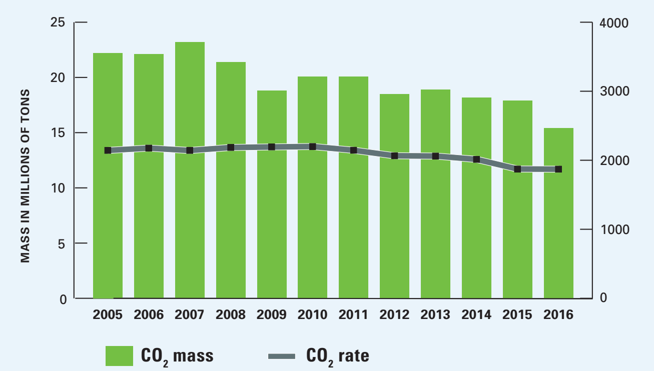

## Nitrogen oxides ($NO_X$)




## Mercury (Hg)




## Carbon dioxide ($CO_2$)




Source: Calculated emissions use EPA-accepted CEMS compliance information that is reported to EPA Clean Air Markets Division (CAMD).

## Fossil fuel generation emissions

The table to the right provides a breakdown of the 2016 emissions data for each of Alliant Energy's regulated utilities, IPL and WPL. Total emissions includes all fossil-fueled electric generating units with a design nameplate capacity of 25 MW or greater that are equipped with CEMS. In addition to total mass emissions, the generation emissions rate represents the IPL and WPL system rates for each utility's owned fossil-fueled electric generation (gross and net).

Emission data does not take into account energy from other sources in the company's overall generation portfolio, including owned or purchased power from non-emitting generation (primarily wind and nuclear) or market purchases from fossil-fueled generation necessary to meet customer energy demands. Information is adjusted for IPL and WPL share of joint-owned generation units. WPL also includes Alliant Energy's non-regulated natural gas-fueled generation unit located in Sheboygan Falls, Wisconsin, which is leased by WPL.

| 2016 fossil fuel generation emissions summary for Alliant Energy's regulated utilities | | | |
|---|---|---|---|
| **Total mass emissions for produced generation** | | | |
| | **WPL** | **IPL** | **Alliant Energy** |
| $SO_2$ (tons) | 5,679 | 7,359 | 13,038 |
| $NO_X$ (tons) | 2,804 | 4,951 | 7,755 |
| Mercury (lbs) | 25 | 29 | 54 |
| $CO_2$ (tons) | 7,688,893 | 7,731,974 | 15,420,867 |
| **Emissions rate for gross produced generation** | | | |
| | **WPL** | **IPL** | **Alliant Energy** |
| $SO_2$ (lbs/gross MWh) | 1.35 | 1.83 | 1.58 |
| $NO_X$ (lbs/gross MWh) | 0.67 | 1.23 | 0.94 |
| Mercury (lbs/gross GWh) | 0.0030 | 0.0036 | 0.0033 |
| $CO_2$ (lbs/gross MWh) | 1,824 | 1,920 | 1,871 |
| **Emissions rate for net electrical generation** | | | |
| | **WPL** | **IPL** | **Alliant Energy** |
| $SO_2$ (lbs/net MWh) | 1.62 | 1.96 | 1.80 |
| $NO_X$ (lbs/net MWh) | 0.80 | 1.32 | 1.07 |
| Mercury (lbs/net GWh) | 0.0036 | 0.0038 | 0.0037 |
| $CO_2$ (lbs/net MWh) | 2,197 | 2,059 | 2,126 |

## Coal-fired air quality control systems

Alliant Energy's installation of air quality control systems (AQCS) at coal-fired electric generating units have resulted in significant emissions reductions of particulate matter (PM), mercury (Hg), $SO_2$ and $NO_X$. Current status of existing and planned AQCS are provided in the table at right.

The types of AQCS technologies installed include:

- Electrostatic precipitator (ESP)
- Baghouse/fabric filter (BG/FF)
- Calcium bromide (CaBr)
- Activated carbon injection (ACI)
- Dry flue gas desulfurization (DFGD)
- Low $NO_X$ burners (LNB)
- Over-fired air (OFA)
- Selective catalytic reduction (SCR)
- Selective non-catalytic reduction (SNCR)

| Technology | ESP | BG/FF | CaBr | ACI | DFGD | LNB or OFA | SCR | SNCR |
|---|---|---|---|---|---|---|---|---|
| **Emissions controlled** | **Hg/PM** | **Hg/PM** | **Hg** | **Hg** | **$SO_2$** | **$NO_X$** | **$NO_X$** | **$NO_X$** |
| Columbia Unit 1 | • | • | • | • | • | • | | |
| Columbia Unit 2 | • | • | • | • | • | • | 2018 | |
| Edgewater Unit 4 | • | | • | • | | • | | • |
| Edgewater Unit 5 | • | • | • | • | • | • | • | |
| Burlington Unit 1 | • | | • | • | | • | | |
| Lansing Unit 4 | • | • | • | • | • | • | • | |
| Ottumwa Unit 1 | • | • | | • | • | • | 2019 | |
| Prairie Creek Unit 3 | • | | • | • | | • | | |
| Prairie Creek Unit 4 | • | | • | • | | • | | |

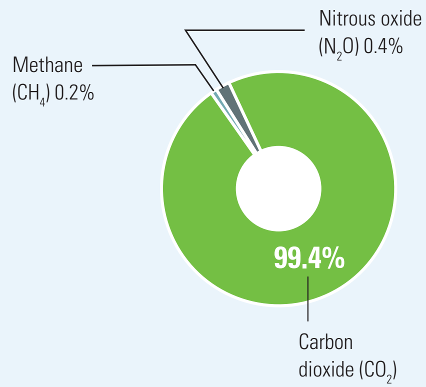
## Greenhouse gas reporting

The EPA's mandatory greenhouse gas (GHG) reporting rule applies to electric utility generation and natural gas distribution operations at Alliant Energy. Compliance requires monitoring and reporting of emissions that exceed threshold levels.

The primary greenhouse gas emitted from Alliant Energy's utility operations is $CO_2$ from the combustion of fossil fuels at its larger electric generating facilities. These emissions are primarily measured with CEMS.

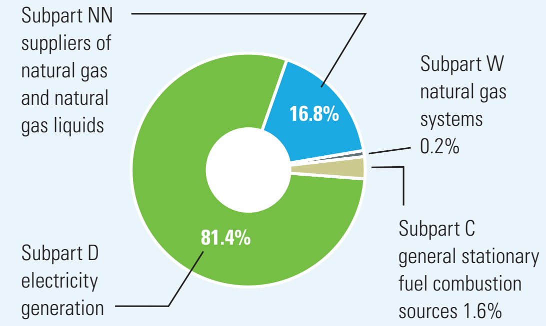
### EPA reported greenhouse gas emissions

**by type as a percentage of total $CO_2e$**

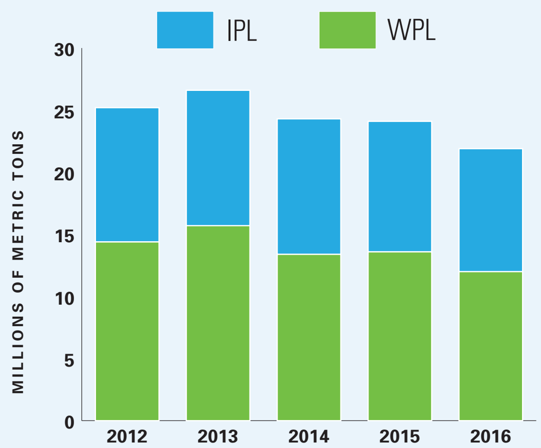



### EPA reported greenhouse gas emissions

**by requirement as a percentage of total $CO_2e$**




### EPA reported $CO_2e$




Total greenhouse gas emissions reported to EPA for 2016 were 22 million metric tons of $CO_2$-equivalent ($CO_2e$). The $CO_2e$ is a measure used to compare the emissions from various greenhouse gases based on their Global Warming Potential (GWP). The $CO_2e$ for a gas is derived by multiplying the mass of the gas by the associated GWP and is determined as follows:

**Total $CO_2e$** = Summation of million metric tons of a gas x GWP of the gas

**Total $CO_2e$** = Carbon dioxide ($CO_2$) x 1 + methane ($CH_4$) x 25 + nitrous oxide ($N_2O$) x 298

**Total $CO_2e$** = $CO_2$ (million metric tons) x 1 + $CH_4$ (million metric tons) x 25 + $N_2O$ (million metric tons) x 298

The EPA Mandatory Greenhouse Gas Reporting Rule protocols apply to the monitoring and reporting of GHG emissions. More specifically, this includes fossil-fueled generation facilities (Subpart D) and auxiliary combustion equipment (Subpart C). In addition, indirect GHG emissions from the combustion of the natural gas supplied to customers (Subpart NN) and fugitive losses from natural gas distribution operations (Subpart W).

Source: Annual EPA Mandatory GHG Report submission protocols issued in the Code of Federal Regulations (CFR) at 40 CFR Part 98. The $CO_2$ emissions reported for EPA's GHG program are based on operational control and do not adjust for equity share of jointly owned electric generating units.

The electric system emission rate for WPL and IPL is determined based on the 2016 EPA reported GHG data. The system emission rate represents the $CO_2e$ after adjustments for renewable energy credit (REC) transactions.

| | WPL (Wisconsin) | | IPL (Iowa) | | Alliant Energy | |
|---|---|---|---|---|---|---|
| **Owned Generation (Net MWh)** | | | | | | |
| Coal | 5,421,027 | 38.31% | 5,598,319 | 34.10% | 11,019,347 | 36.05% |
| Natural Gas | 2,667,415 | 18.85% | 1,837,554 | 11.19% | 4,504,968 | 14.74% |
| Oil | – | – | 5,996 | 0.04% | 5,996 | 0.02% |
| Hydroelectric | 221,231 | 1.56% | – | – | 221,231 | 0.72% |
| Solar | – | – | 31 | 0.00% | 31 | 0.00% |
| Wind | 751,915 | 5.31% | 630,455 | 3.84% | 1,382,370 | 4.52% |
| **Purchased Power (Net MWh)** | | | | | | |
| Natural Gas | 9,262 | 0.07% | – | – | 9,262 | 0.03% |
| Nuclear | – | – | 3,443,553 | 20.97% | 3,443,553 | 11.26% |
| Biomass | – | – | 203 | 0.00% | 203 | 0.00% |
| Hydroelectric | 124,157 | 0.88% | 18,421 | 0.11% | 142,578 | 0.47% |
| Solar | 60 | 0.00% | 34 | 0.00% | 94 | 0.00% |
| Wind | 444,332 | 3.14% | 634,928 | 3.87% | 1,079,259 | 3.53% |
| Second Nature | 15,746 | 0.11% | 31,340 | 0.19% | 47,086 | 0.15% |
| Other (market) | 4,495,813 | 31.77% | 4,217,221 | 25.69% | 8,713,034 | 28.50% |
| **Total Sources of Energy (Net MWh)** | **14,150,957** | **100%** | **16,418,055** | **100%** | **30,569,012** | **100%** |
| **Adjustments for REC Sales, Transfers and Retirements (MWh)** | | | | | | |
| Null Power (owned wind) | 231,870 | | – | | 231,870 | |
| Null Power (purchased wind) | 131,978 | | 147,396 | | 279,374 | |
| **System Emission Rate Adjusted for Null Power** | | | | | | |
| $CO_2e$ in grams/kWh | 727 | | 625 | | 673 | |
| $CO_2e$ in lbs/MWh | 1,604 | | 1,379 | | 1,483 | |

**Note:** Fossil fuel combustion $CO_2e$ emissions are calculated using EPA's mandatory regulations under 40 CFR Part 98. Null power includes owned and purchased energy that no longer includes environmental attributes due to REC transactions or retirements.

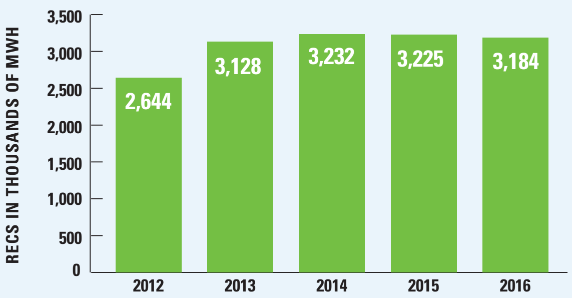
Market purchase and null power have been factored into $CO_2$ emission rate using the Green-e 2016 residual emission rate factor for MRO. The residual emission rate factor is available at: *https://www.green-e.org/docs/energy/Residual%20Mix%202016.pdf*. The methane ($CH_4$) and nitrous oxide ($N_2O$) eGRID2014 factors were also used for total $CO_2e$ from market purchase and null power. The eGRID2014 emission factors are available at: *https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid*.

Total $CO_2e$ was calculated with global warming potentials as follows: $CO_2$ = 1, $CH_4$ = 25, $N_2O$ = 298. All or some of the renewable energy attributes associated with generation from the renewable energy sources may be used in future years to comply with renewable or other regulatory requirements; sold, exchanged or transferred to third parties; or retired for other purposes in the form of RECs or other environmental commodities.

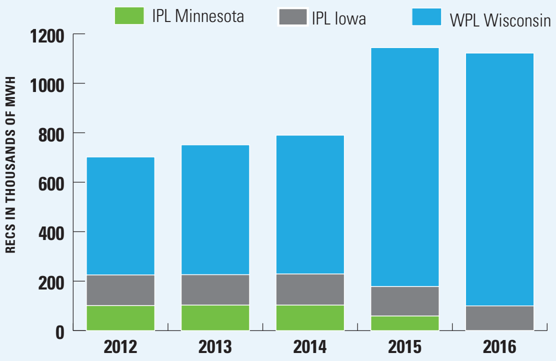
## Renewable energy resources

Alliant Energy is subject to Renewable Portfolio Standards (RPS) in Wisconsin and Iowa. These standards establish the amount of energy electric utilities must supply from renewable resources. Our company continues to exceed the RPS future requirements through company-owned renewables and purchase power agreements, primarily from wind generation.

**RECs from produced and purchased renewable resources**




**RECs retired for RPS compliance**




We participate in the renewable energy market based on compliance requirements, customer needs, price and other factors. Renewable energy credits (RECs) represent proof that 1 MWh of electricity was generated from an eligible renewable energy resource. These certificates can be sold and traded, giving the purchaser of the RECs claim to the renewable energy and environmental attributes. The RECs held by Alliant Energy may be sold or exchanged, including to buyers not located in the states served with energy from IPL or WPL.

The table below provides the status of REC transactions beyond those required for RPS compliance up until the time of publication of this report and could change should additional RECs be sold, exchanged, transferred or retired in the future. These transactions could include RECs originating from company-produced and/or purchased renewable energy sources.

| REC transactions beyond RPS compliance in equivalent megawatt-hours | | | | | |
|---|---|---|---|---|---|
| **Year wind was generated** | **2012** | **2013** | **2014** | **2015** | **2016** |
| **RECs sold, transferred, or retired for other purposes beyond RPS compliance** | 1,914,517 | 2,302,671 | 2,099,816 | 2,235,400 | 511,244 |
| The data in this table are REC transactions beyond those required for RPS compliance. This includes RECs sold on the REC market, transferred for wholesale agreements or purchase power agreements (PPAs), retirements for Alliant Energy's *Second Nature* program and Leadership in Energy and Environmental Design (LEED) certification. Alliant Energy no longer holds the renewable or environmental attributes associated with these RECs. | | | | | |

Source: Alliant Energy records and Federal Energy Regulatory Commission (FERC) Form 1. In 2015, IPL closed the sale of its electric distribution assets in Minnesota and no longer provides retail sales to customers in this service territory. Compliance data shown includes REC retirements for IPL's retail sales in Minnesota to meet the existing RPS requirements through the closing date in 2015. The number of RECs retired in a given RPS compliance year does not necessarily mean those RECs were all generated that year due to the allowed use of banked RECs in Minnesota and Wisconsin.

## Coal combustion residuals management

Coal combustion residuals (CCR) are what remain after the direct combustion of coal in generating stations and include residuals from air quality control systems. Alliant Energy's goal is to manage CCR safely and responsibly in order to protect both the environment and the public while assuring compliance with state and federal regulations.

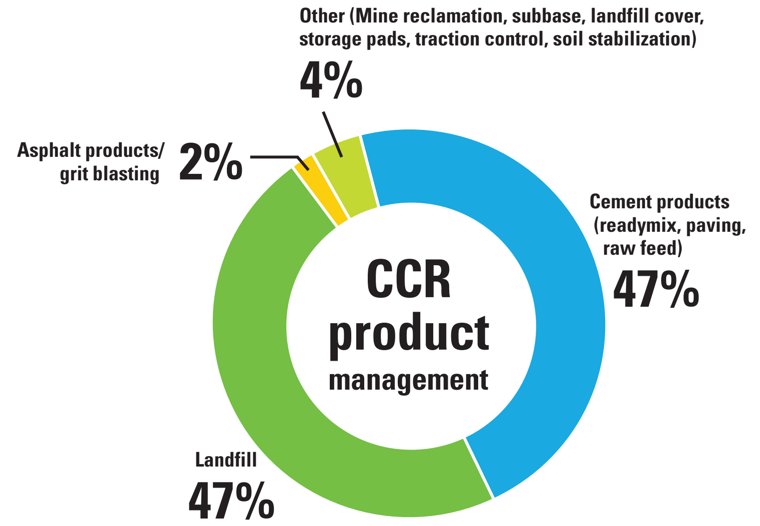
We are complying with the EPA's 's regulations for CCR management and disposal. Our CCR website shares required compliance information and monitoring data. It can be directly accessed at *ccr.alliantenergy.com*.

Our company works with state regulatory agencies to identify approved beneficial uses for CCR. Material that cannot be beneficially reused is placed in landfills that are permitted and include engineering design and controls that meet or exceed applicable requirements.

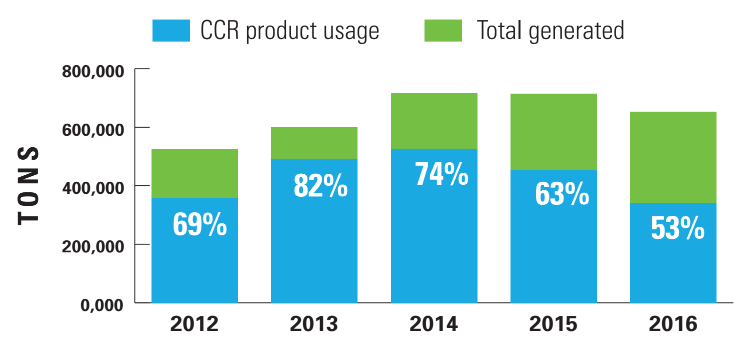
There are different types of CCR:

- Fly ash is a very fine powder-like particle that is collected by emission controls.
- Bottom ash is a coarse, granular sand-like material collected from the bottom of the boilers.
- Boiler slag is black, shiny and angular. It is coarser than bottom ash and also collected from the bottom of boilers.
- Scrubber solids consist of lime that is reacted in air quality control systems to reduce $SO_2$ emissions. These solids are light in color, contain very small amounts of fly ash and are typically collected in a baghouse.

In 2016, we were able to beneficially use more than 340,000 tons of CCR in products, or about 53% of the overall CCR generated. The overall annual rate of reuse has decreased from 2016 due to the scrubber solids created from recently installed $SO_2$ air quality control systems.




### CCR product use




Our company continues to research approved beneficial uses for the scrubber solids and is working toward an anticipated annual target of 60% by 2020. Research is being conducted as part of an established partnership with the University of Wisconsin – Madison soils and agricultural program, which is in the final year of a three-year field study. In 2016, we further accomplished evaluation and understanding of the scrubber byproduct in agricultural uses; including permitting for this beneficial use by the Wisconsin Department of Natural Resources (WDNR). In the upcoming year, it is the intent to wrap up the project concluding the positive use of scrubber byproducts on agricultural fields and demonstrating no harmful effects.

Source: Alliant Energy records.

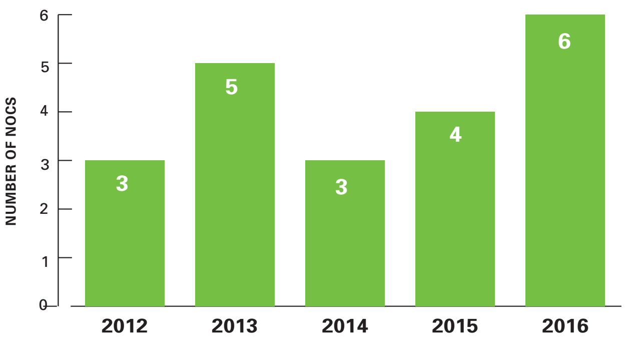
## Environmental compliance

Alliant Energy operates in compliance with environmental requirements. However, there are occasions when the company has missed reporting deadlines, exceeded permit levels or otherwise violated regulations. These instances of non-compliance can result in fines or penalties. An environmental notice of non-compliance (NOC) is a communication from a regulatory agency that it believes the company has failed to comply with an environmental regulation.

In 2016, Alliant Energy was issued six NOCs related to air emissions reporting, air permit compliance, storm water erosion controls, storm water management, fly ash management, and spill reporting. None of these were subject to fines or penalties.

To further address our compliance status, we have initiated site-specific training at our operations to increase employee awareness of environmental requirements and provide practical guidance aimed at reducing the potential for human error. This training is part of a broader Lean Six Sigma project that is being implemented to develop processes and tools focused on overall environmental incident reduction.

**Notices of non-compliance (NOC)**




## LEED progress

Alliant Energy pursues Leadership in Energy and Environmental Design (LEED®) certification for many new building construction projects. The LEED program was created by the U.S. Green Building Council (USGBC). It is a nationally accepted benchmark for the design, construction and operation of high performance "green" buildings. LEED promotes a whole-building approach to sustainability by looking at five key areas: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Alliant Energy also retires renewable energy credits for the company's LEED facilities' energy use.

| Site | Location | LEED status |
|---|---|---|
| Cedar Ridge Wind Farm Operations Center | Eden, Wisconsin | Gold |
| Iowa Technical Training Center | Marshalltown, Iowa | Gold |
| Prairie du Chien Operations Center | Prairie du Chien, Wisconsin | Gold |
| Sheboygan Operations Center | Sheboygan, Wisconsin | Gold |
| Whispering Willow Wind Farm Operations Center | Iowa Falls, Iowa | Gold |
| Baraboo Operations Center | Baraboo, Wisconsin | Silver |
| Ottumwa Operations Center | Ottumwa, Iowa | Silver |
| Bent Tree Wind Farm Operations Center | Hartland, Minnesota | Certified |
| Osceola Operations Center | Osceola, Iowa | Certified |
| Ottumwa Generating Station Administration Building | Chillicothe, Iowa | Certified |

Source: Alliant Energy records.

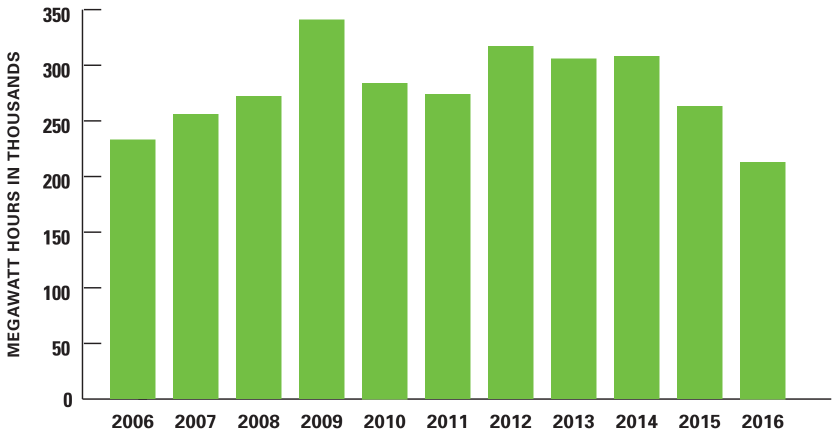
## Energy efficiency

In 2016, Alliant Energy's energy-efficiency programs resulted in savings of over 212,000 MWh of electricity and over 4.3 million therms of natural gas. This includes estimated savings in Wisconsin through the Focus on Energy (FoE) program and actual savings from the program in Iowa.

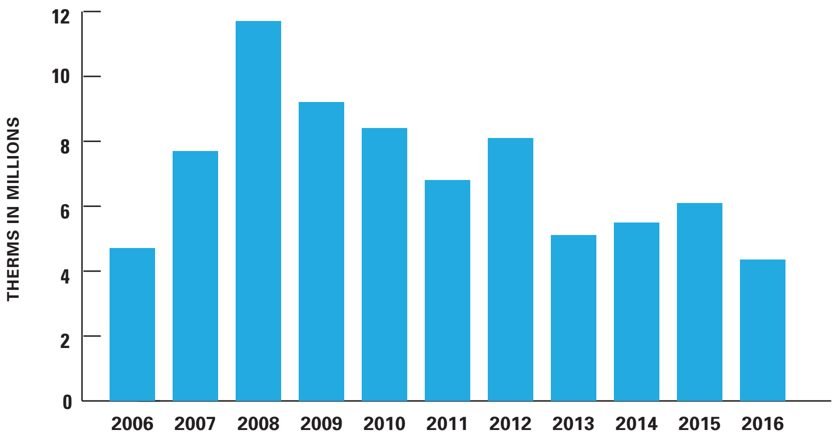
Since 2001, the energy savings for Wisconsin residential and some business programs became part of the consolidated FoE program. This program is managed and tracked separately by the state of Wisconsin. WPL contributes 1.2% of its annual retail utility revenues to help fund FoE.

In Iowa, the program is operated directly by utility companies under the oversight of regulatory agencies. In 2013, IPL's Energy Effiency Plan (EEP) was approved and includes spending of approximately $400 million from 2014 to 2018.

### Annual incremental electricity saved



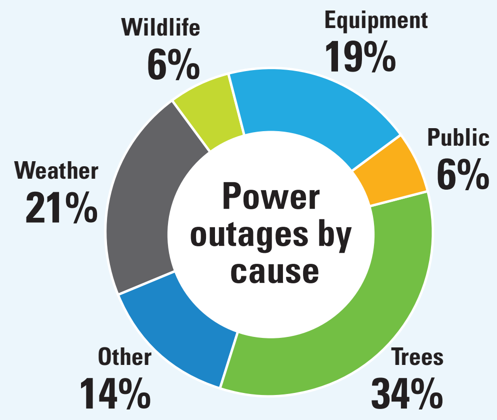

### Annual incremental natural gas saved



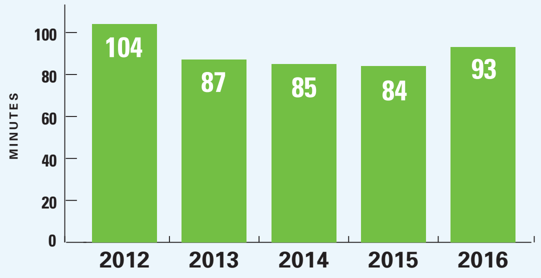

Source: Alliant Energy records and regulatory filings. Data shown include Minnesota energy efficiency program results through 2015 when IPL sold these electric distribution assets and ended retail sales to these customers. Savings in 2008-2009 include increases due to post-flood recovery construction and renovation in Iowa, as well as incentives funded by the American Recovery and Reinvestment Act.

## Electric system reliability

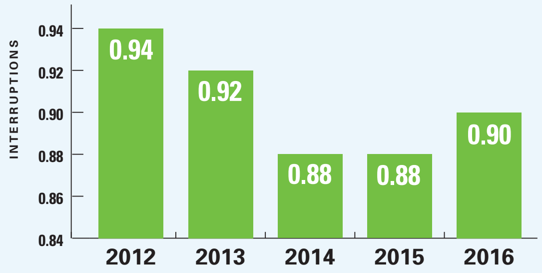
Alliant Energy is continually working to improve our system reliability; however, some power outages still occur. The majority are the result of weather-related events, trees and wildlife. As preventative measures, we conduct tree trimming near our distribution lines and install animal guards on pole-top transformers. Other events such as digging, construction or auto accidents can damage lines, poles or other equipment and cause service interruptions. An electrical overload may also cause the equipment to fail. Regardless of the reason for an outage, Alliant Energy works to restore power as quickly, efficiently and safely as possible.



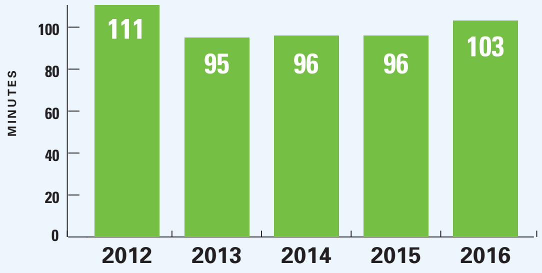

**System Average Interruption Duration Index (SAIDI)** is the average length of an interruption experienced by the average customer. It is the annual sum of all customer interruption durations over the year divided by the total number of customers served during the year (even if they don't experience an outage).




**System Average Interruption Frequency Index (SAIFI)** is defined as the number of sustained interruptions the average customer experiences. It is the total annual number of customer interruptions divided by the total number of customers served during the year.




**Customer Average Interruption Duration Index (CAIDI)** is the average length of an interruption experienced by an interrupted customer. In this index, a customer can be counted as many times as they experience an outage.




Source: Alliant Energy records. Metrics are reported excluding major events according to the guidance set forth by applicable regulatory agencies. In 2015, IPL closed the sale of its electric distribution assets in Minnesota and no longer provides retail sales to customers in this service territory. Data shown reflect IPL system through the closing date in 2015.

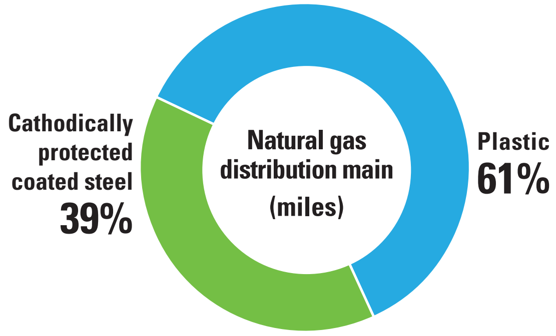
## Natural gas system performance

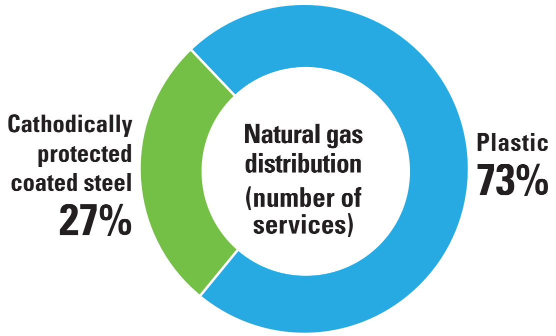
Alliant Energy natural gas transmission pipelines deliver gas directly to some large industrial customers and to Alliant Energy gate stations, where pressure is lowered for final distribution to utility customers. The distribution systems consist of mains, which are usually located along or under city streets, and smaller service lines that branch off the mains and distribute natural gas service to homes and businesses. None of these pipeline systems are constructed of potentially high-risk materials, such as cast and wrought iron or non-protected bare steel.

| System miles | IPL | WPL |
|---|---|---|
| Gas transmission pipeline | 819 | 40 |
| Distribution gas mains | 4,310 | 4,397 |

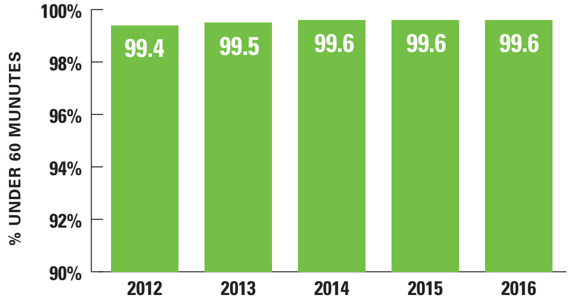
Alliant Energy is dedicated to keeping its employees, customers and communities safe through training, education and awareness. All Alliant Energy journeymen crews and service responders are trained on emergency response and are available 24 hours a day, seven days a week. In addition, our company's Transmission and Distribution Integrity Management Program provides a process for inspecting and assessing the condition of Alliant Energy-owned natural gas pipelines and establishing a maintenance program based on regulatory requirements and best industry practices.

Source: Alliant Energy records.




### Gas emergency responses

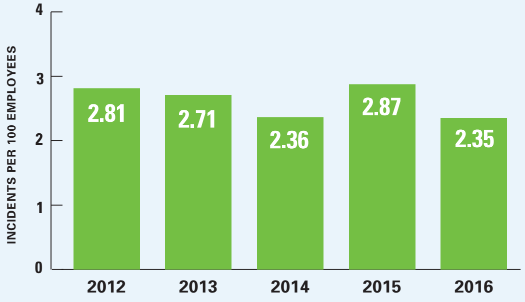



## Employee safety performance

Safety is a Core Value, and our first priority is that nobody gets hurt. Employee safety performance is tracked according to the OSHA requirements. In addition, our company has a program to track and report near misses and unsafe conditions. This prevents similar incidents from occurring elsewhere and helps to identify and correct potential hazards to reduce risk to our employees.

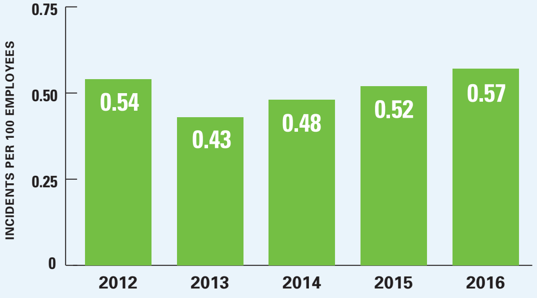
**Recordable incident rate**

The number of work-related injuries or illnesses requiring more than first-aid treatment, per 100 employees.



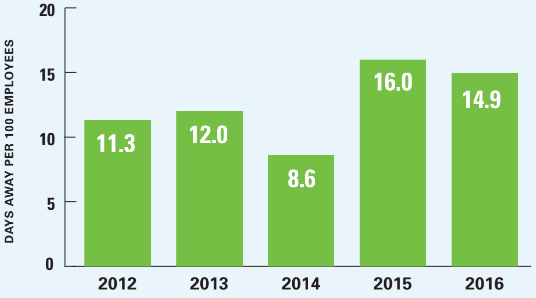

**Lost-time incident rate**

The number of lost workdays per 100 employees from a recordable incident resulting in an employee's inability to work the next full work day.




**Severity rate**

The number of days away from work per 100 employees as a result of work-related injuries or illnesses.




Source: Alliant Energy records.

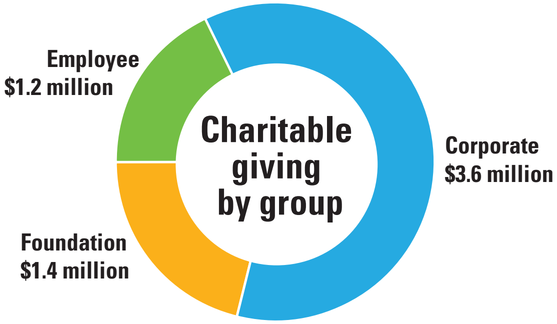
## Community giving and volunteer efforts

Alliant Energy and its employees support the communities in which we live and work. These efforts take place through a combination of Foundation, corporate and employee giving and volunteerism.

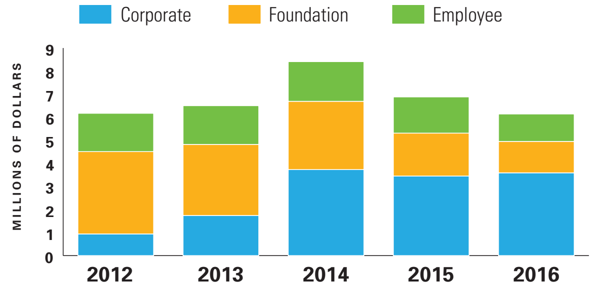
The Alliant Energy Foundation focuses on three main areas: Helping Families, Education and the Environment. In addition, the Foundation will match qualifying employee philanthropic gifts of $50 or more, up to $2,500 per year, to qualifying 501(c)3 charitable organizations. In 2016, through the giving spirit of our employees and retirees, this program matched donations of over $550,000.

More than $6 million in 2016 and over $34 million given in the past five years.

Our corporate giving includes Hometown Care electric and heating bill assistance, United Way, safety, community support, and diversity and inclusion programs. Employee donations support our company's United Way campaign, and they also donate their valuable time in our communities. In 2016, more than 90,000 volunteer hours were logged for various initiatives including Days of Caring, Habitat for Humanity, food drives, tree planting and many other charity events.




### Giving by year and group





Source: Alliant Energy records

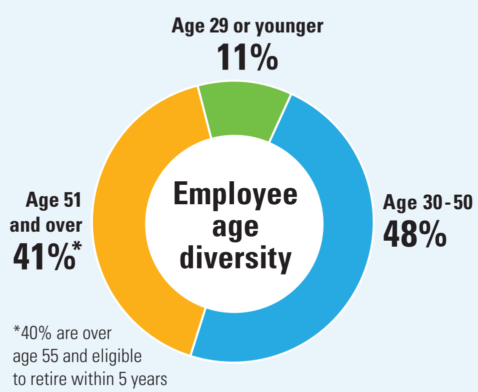
Our performance

## Workforce

Respect is a Core Value at Alliant Energy. Diversity includes a rich mixture of attributes that make each of us unique. Our company treats all employees with respect and values a diverse and inclusive workplace where people of all backgrounds, talents and perspectives feel like they belong and can be successful. This environment contributes to our ability to provide safe, reliable power and excellent customer service.

| 2016 Diversity | Workforce | Executive | Board |
|---|---|---|---|
| Minority | 5.2% | 12.5% | 20% |
| Female | 25.2% | 29.2% | 50% |

Source: Alliant Energy records.

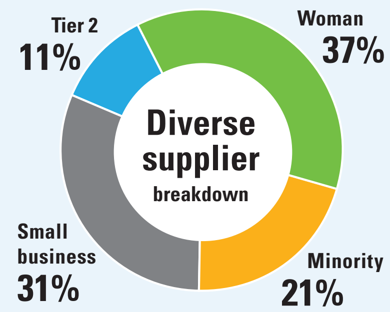



*40% are over age 55 and eligible to retire within 5 years

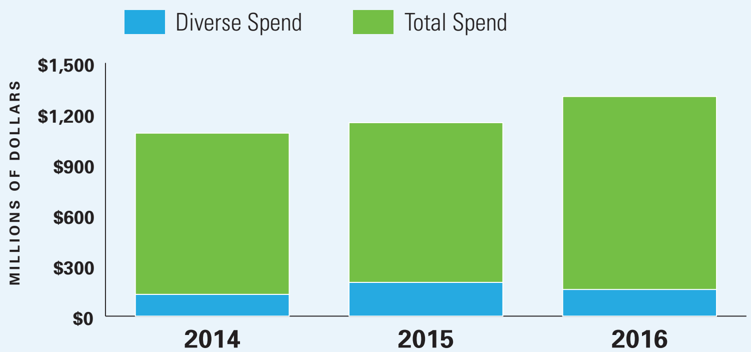
## Supplier diversity

Alliant Energy's supplier diversity program provides equal access for all qualified businesses, including those owned by women, minorities, service-disabled veterans and small business designations. Tracking includes both direct Tier 1 diverse suppliers and also Tier 2 suppliers that report on diverse spend.

To promote the use of diverse suppliers, all bids over $100,000 are highly encouraged to consider a diverse supplier. Our target is to achieve over 15% of total spend from diverse suppliers annually with 2016 results at 12.1%.




### Diverse supplier spend




Source: Alliant Energy records.

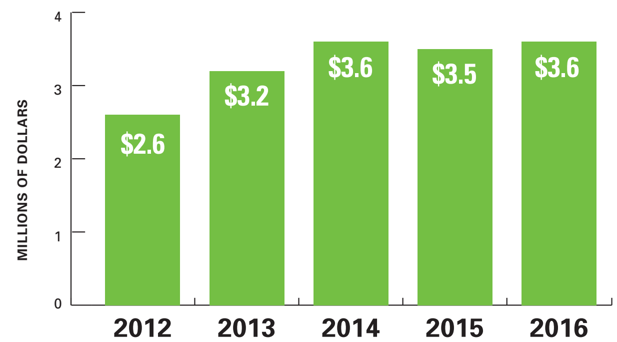
## Research and development

In 2016, Alliant Energy invested $3.6 million in various research and development (R&D) programs. This amount includes both discretionary research funds and funds collected from customer billings as mandated by state regulations. Alliant Energy's participation targets a diverse range of R&D areas related to improving sustainability performance. This information is valuable for new innovations and technology development.

| 2016 Research and development funding areas | |
|---|---|
| Customer energy efficiency | 20% |
| Renewable resources | 16% |
| Energy reliability and resiliency | 15% |
| Utility operational efficiency | 11% |
| Employee and workforce development | 8% |
| Greenhouse gas reductions | 7% |
| Water management | 6% |
| Air emissions reductions | 4% |
| Habitat protection | 4% |
| Safety, security, and privacy | 4% |
| Community economic development | 2% |
| Plant decommissioning | 1% |
| Sustainability planning | 1% |
| University research and education | 1% |

Source: Alliant Energy records

### External research and development dollars spent




Source: Federal Energy Regulatory Commission (FERC) Form 1 filings

# 2017 Corporate Sustainability Report

**Alliant Energy**
**Corporate Headquarters**

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Madison, WI 53718-2148

General information: 1-800-ALLIANT
*alliantenergy.com*

Individual shareowner questions
Alliant Energy Shareowner Services: 1-800-353-1089

Stock transfer agent and registrar
Wells Fargo Shareowner Services: 1-800-356-5343

*shareowneronline.com*

U.S. Securities and Exchange Commission filings and
Corporate Governance: *alliantenergy.com/investors*

August 2017