



Advanced Energy in Lincoln, NE

June 2017



District Energy Corporation



- District Energy Corporation (DEC) is a nonprofit, inter-local agency made up by the of Lincoln and Lancaster County
- DEC Energy was formed in 1989 for purposes of:
 - Constructing,
 - Financing,
 - Furnishing, and
 - Operating thermal energy facilities and related services for providing heating and cooling to governmental entities
- DEC currently owns and operates four thermal energy plants and is the process of constructing two more facilities

Governance



- DEC Energy is governed by a five-member Board of Directors
 - Two county commissioners
 - Two city representatives
 - Council member
 - Mayor appointee
 - One Lincoln Electric System Board member



Management Agreement



- Lincoln Electric System (LES) manages DEC's systems and affairs:
 - LES is responsible for the overall operation, maintenance, and administration resulting in the equivalent labor of seven full-time positions for 2017
 - LES is not responsible for any liabilities of the corporation, including its indebtedness, and the corporation has agreed to indemnify LES



Management Agreement



- Why does LES manage DEC?
 - LES was instrumental in its creation
 - Synergy between LES and DEC allows for mutual benefits
 - Focus on reliability, efficiency, sustainability, robustness, value justified on life-cycle cost analysis; profits are not a motive for either LES or DEC
 - LES had experience operating a now decommissioned CHP plant in downtown Lincoln
 - Aligns with LES Vision and Mission Statements



Financing for Projects



- DEC has historically issued tax-exempt bonds to support capital construction funding
 - DEC is rated AA+ by both Fitch Ratings and Standard & Poor's
 - DEC receives a high bond rating due to all financings being secured by the Energy Services Agreements with governmental entities.
 - DEC currently has \$37.7M in outstanding debt

Energy Services Agreements



- DEC has take or pay, long-term ESAs with:
 - City
 - County
 - Lincoln Electric System
(Currently under construction)
 - State of Nebraska
(One existing plant, one currently being planned)
 - West Haymarket Joint Public Agency
(City of Lincoln/University of Nebraska)
 - The West Haymarket JPA sells services to customers in the JPA “footprint”

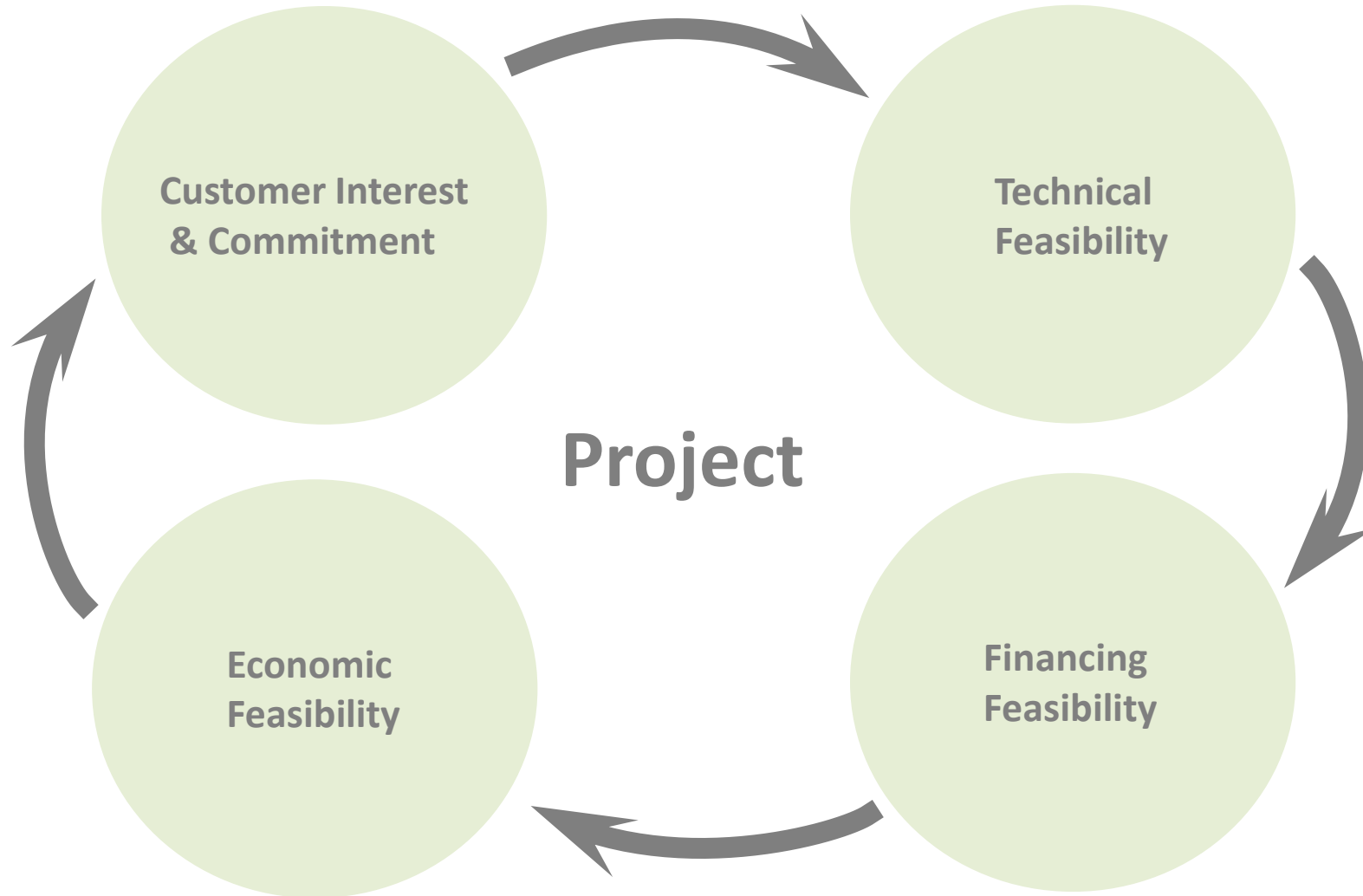


Cost of Service



- DEC adheres to cost of service principles for rate design
 - Rates are designed to:
 - Be fair, reasonable, and nondiscriminatory
 - Collect funds needed to operate the utility and provide sufficient reserves
 - Rates are not designed to:
 - Generate a profit for any stakeholders
 - Create cross-customer subsidization
 - Rates are adopted by the DEC Board of Directors in conjunction with the annual budget process

Project Development Flow Chart



DEC Master Planning Goals

- Determine opportunities to grow district energy in Lincoln
- Reduce energy costs for energy system customers
- Increase energy resilience and reliability in Lincoln

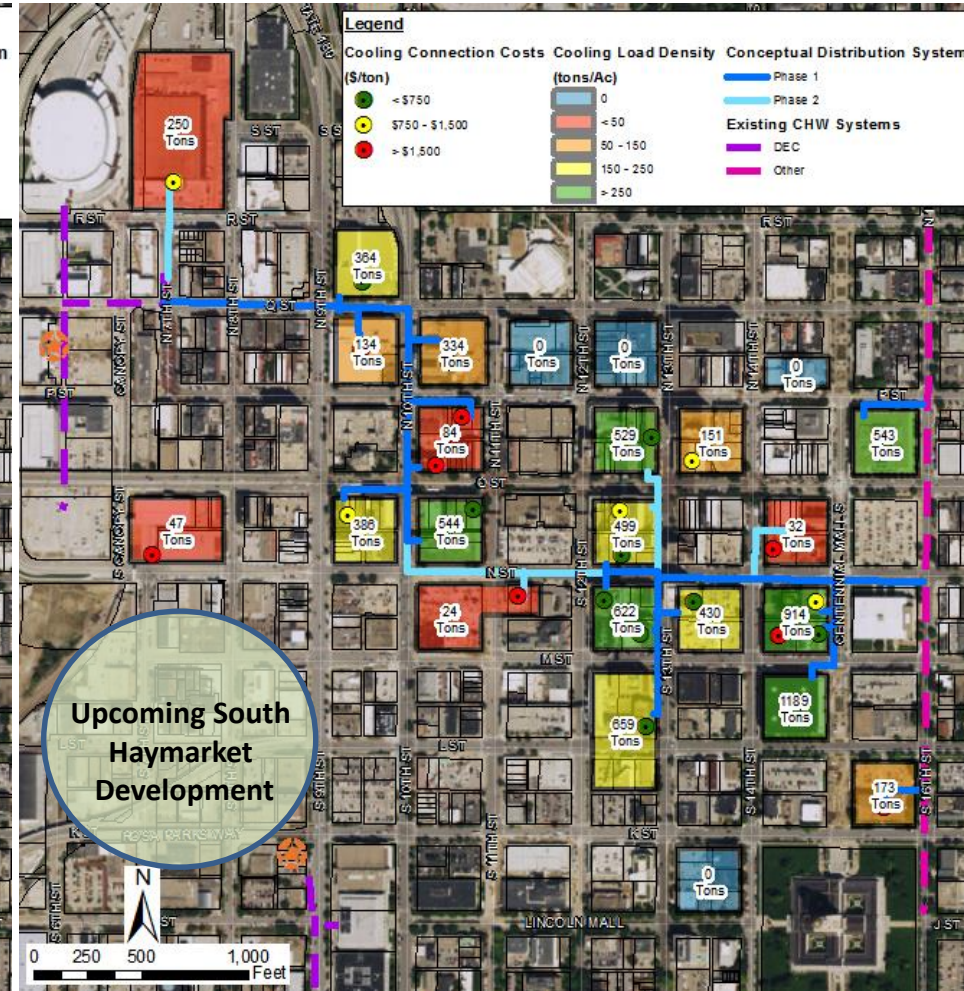
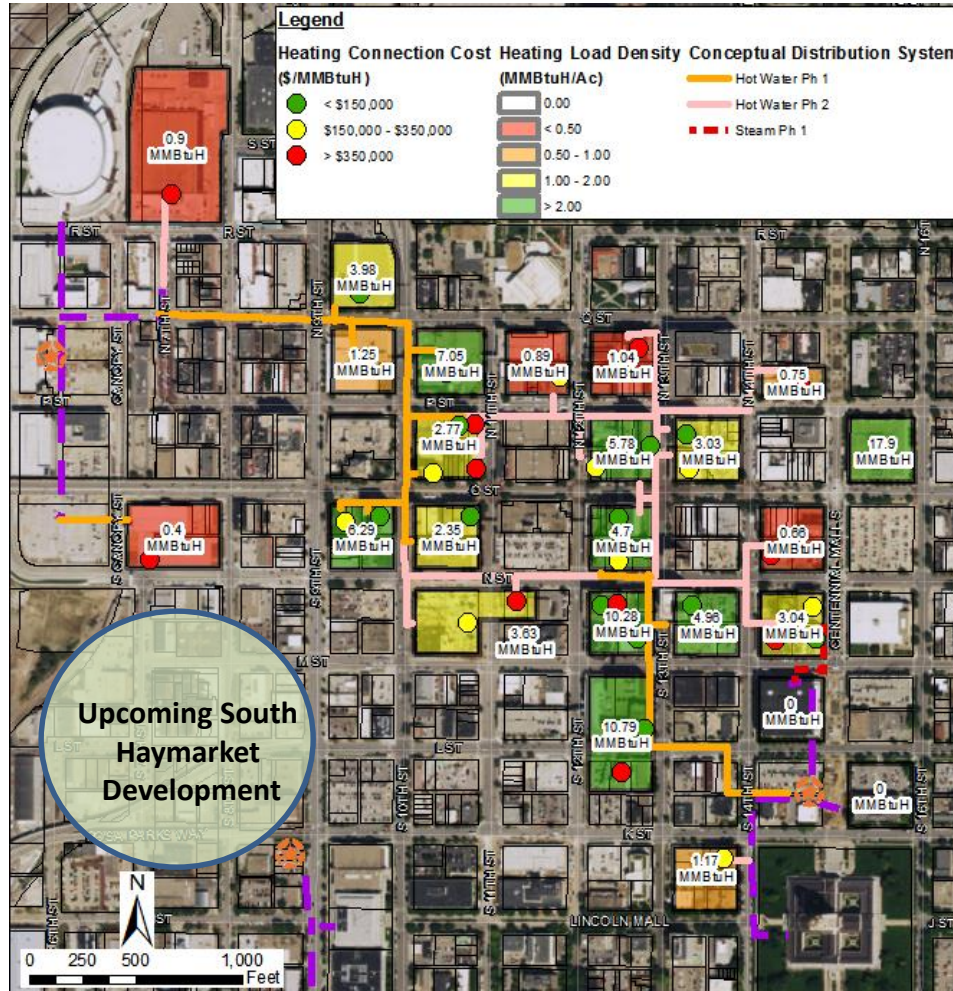
Operational Improvements



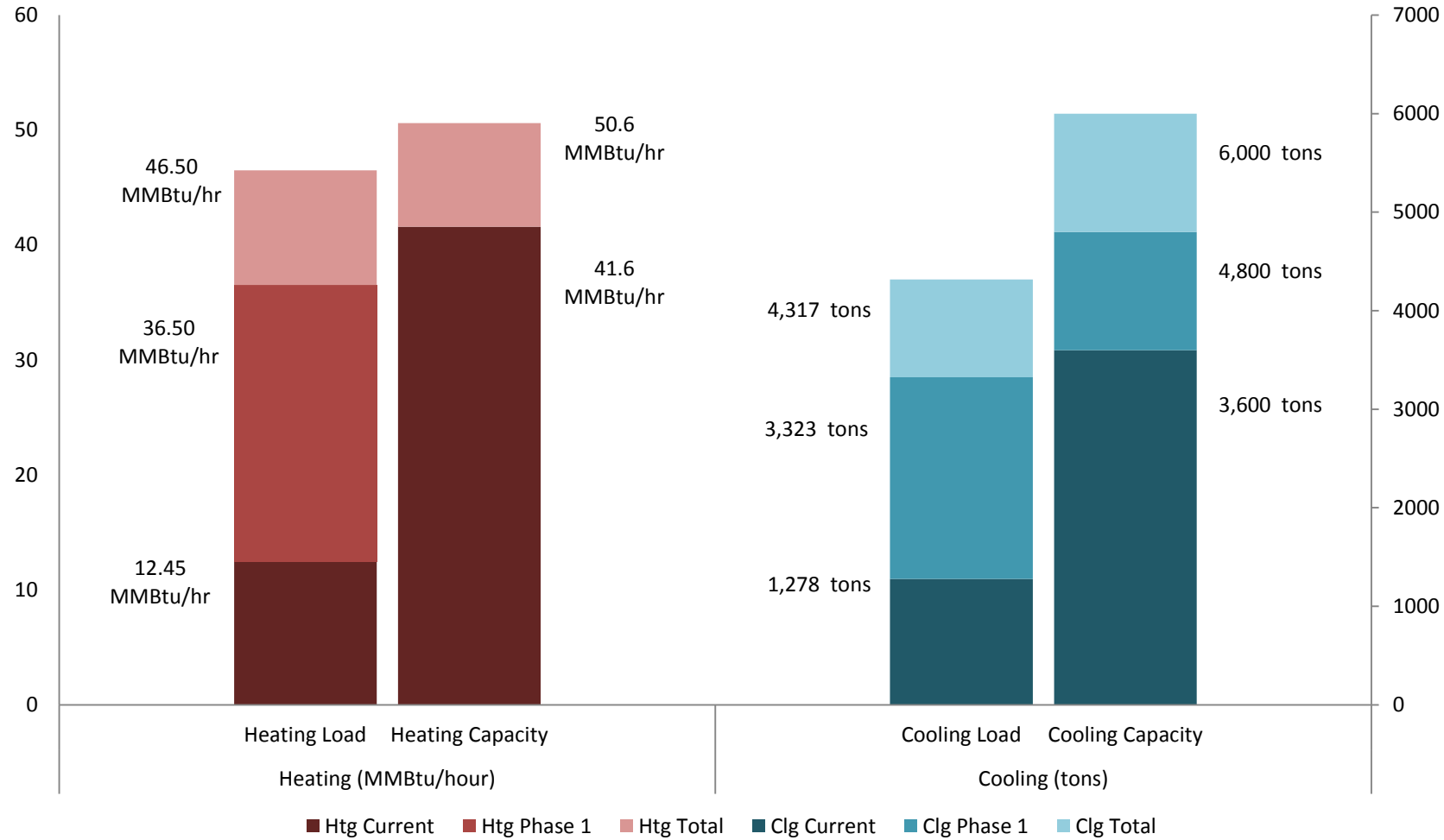
- LES operational and management strategies are efficient and effective
- Opportunities for improvement:
 - Improved and calibrated energy metering at CCTP, state, and WHM
 - Upgrading boilers at CCTP
 - Hot water supply temperature setback at WHM
 - Improved hot water delta T at WHM



Growth Opportunities



WHM Plant Load and Capacity



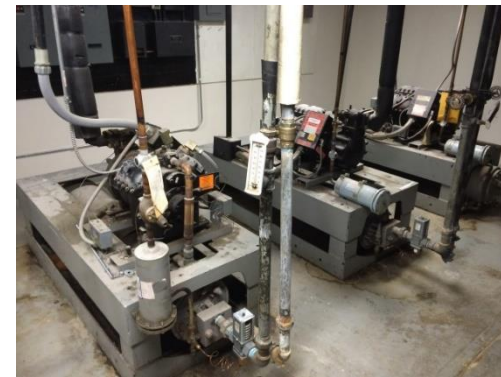
¹ Load estimates include Hudl & Liner properties estimated loads, but does not account for any additional load growth for yet to be determined development within WHJPA boundary

² Capacity assumed to keep minimum N+1 Redundancy

Structuring for Growth



- Scenario 1 – Agreement with a public (governmental) entity (*new or existing*)
- Scenario 2 – DEC as a “traditional” utility with tax-exempt debt
- Scenario 3 – DEC as a “traditional” utility with taxable debt
- Scenario 4 – Retain current structure (within 10% private use limit)



Preferred Organization Direction

- **Short term growth from the state and WHM plants:**
Pursue growth within the 10% private use limit until debt is retired for each system
- **Removal of growth constraints for growth at all plants:**
 - Governing documents
 - Ownership concession
 - WHJPA customer consent
 - Pursue Local District Heating & Cooling (LDHC) Bonds to finance distribution piping extensions
- **Plan for Further Growth**
Continue discussions and evaluation for transition to Scenario 1 or Scenario 2

Expanding the WHM System



West Haymarket Hot Water Expansion Estimate	Phase 1 Expansion	Future Phases Expansion	Total - All Phases
Plant Improvements Cost (\$)	\$0	\$405,000	\$405,000
Distribution System Cost (\$)	\$2,891,000	\$1,946,000	\$4,837,000
Service Laterals Cost (\$)	\$464,000	\$1,556,000	\$2,020,000
Total Capital Cost (\$)	\$3,355,000	\$3,907,000	\$7,262,000

West Haymarket Chilled Water Expansion Estimate	Phase 1 Expansion	Future Phases Expansion	Total - All Phases
Plant Improvements Cost (\$)	\$650,000	\$1,794,000	\$2,444,000
Distribution System Cost (\$)	\$3,145,000	\$1,235,000	\$4,381,000
Service Laterals Cost (\$)	\$685,000	\$959,000	\$1,644,000
Total Capital Cost (\$)	\$4,480,000	\$3,988,000	\$8,469,000

Financial Results



State System Growth Financial Results	Phase 1			Future Phases		
Financing Rate	4.50%	6%	7.50%	4.50%	6%	7.50%
Total Customer Savings	\$5,341,047	\$4,911,587	\$4,379,391	\$5,223,616	\$4,400,214	\$3,045,610
Total % Net Savings	28.14%	25.88%	23.08%	21.99%	18.53%	12.82%

WHM System Growth Financial Results	Phase 1			Future Phases		
Financing Rate	4.50%	6%	7.50%	4.50%	6%	7.50%
Total Customer Savings	\$6,501,315	\$5,328,114	\$4,051,654	\$4,474,954	\$2,243,930	(\$212,516)
Total % Net Savings	12.65%	10.37%	7.88%	7.12%	3.57%	-0.34%

Customer's energy-related savings presented as NPV of 30-year cost savings, compared to business as usual.

Risks



- Customer acquisition timing and success
- Non-governmental Financings
- Timing – some buildings need to make decisions now
- Concerns from outside entities or watch groups
- Difficult underground construction
- Chilled water from NU Corp



Proceeding with System Growth



- Implement recommended system upgrades
- Remove organizational growth constraints
- Customer acquisition
- Growth strategies
- NU Corp discussions
- Determine the preferred organizational structure beyond 10% growth
- Conceptual design and construction pricing
- Prepare the business operations for growth
 - Energy service agreement
 - Energy rate strategies
 - Reallocation of demand charges
 - Customer service strategy



Questions?



Dan Dixon
Supervisor, Inter-Local Projects, Project Engineering
ddixon@les.com
402.473.3373

Michael Ahern
SVP, System Development
michael.ahern@ever-greenenergy.com
651.248.0618