2023-02-03

City of El Paso, TX

Climate Policy Amendment to City Charter

Yearout Energy has prepared budgetary estimates for the specific initiatives outlined in the table below to assist the City of El Paso in their considerations of amending the City Charter to include the proposed "Climate Policy". A description of the methodologies applied for each initiative in summarized in the sections below.

Initiative	Budgetary Amount
9.6 Tracking Climate Emissions	$191,900
Utility Tracking (Baseline, Benchmarking, Annual Tracking)	*$126,900*
Greenhouse Gas (GHG) Inventory (Every Few Years)	*$55,000 (Avg)*
Annual Reporting	*$10,000*
9.8.1 Solar Power Generation Plan	$10,000
9.8.2 Rooftop Solar Power Generation	$10,000
9.9 Renewable Energy	$142,995,000
Renewable Energy Goals Plan (Over 3-Year Period)	*$495,000*
Energy Efficiency & Electrification (Self-Funding Over Multiple Phases)	*$50,000,000*
80% Clean Renewable Energy by 2030 (Accounts for IRA)	*$67,500,000*
100% Clean Renewable Energy by 2045	*$25,000,000*

9.6 Tracking Climate Emissions

This initiative involves a multi-step approach to properly report on climate impacts.

Step 1 – Utility Tracking (Includes Baselining and Benchmarking)

The first step would be to gather detailed historic utility information (a minimum of 36-Months) for all utility meters and accounts serving City of El Paso assets. This data would be processed and analyzed to accurately establish the baseline performance of each site. Individual sites would then be benchmarked against similar sites to further understand current performance employing industry standard metrics such as Energy Utilization Index (EUI), Energy Cost Index (ECI), and EnergyStar Portfolio Manager Score (0 to 100). All results from this analysis would feed into the following steps of this initiative and would be made available via an online dashboard for public awareness, transparency, and ongoing tracking. The budgetary cost to perform this step is estimated at $100/meter each year as depicted in the table below.

Utility	Est. Meter Qty	Budgetary Cost
Electricity	877	$87,700
Natural Gas	185	$18,500
Water	207	$20,700
Total	1,269	$126,900

Step 2 – Comprehensive Greenhouse Gas (GHG) Inventory

The second portion of this initiative would involve the compilation of a comprehensive greenhouse gas (GHG) inventory for the City of El Paso. The information gathered in step 1 would be essential in completing this secondary step. The budgetary cost for this step is estimated to range from $10,000 to $100,000 and depends heavily on the level of effort from City staff in gathering all the information needed to accurately perform the GHG inventory. This detailed exercise can be performed on any frequency that meets the City's objectives.

Step 3 – Annual Reporting

Once accurate baseline utility and GHG performance have been established for City assets, ongoing reporting may occur that measures the climate impacts from any projects implemented or policies enacted. Assuming the City continues to employ Steps 1 and 2 described above each year, minimal ongoing costs are anticipated for this step outside of the efforts from the Climate Director and other City Staff. A significant amount of the information that would feed into this annual report would come from the previous items described in Steps 1 and 2. Therefore, the budgetary cost for this step is estimated to be $10,000 annually.

9.8.1 Solar Power Generation Plan

Creation of an annual solar power generation plan by the Climate Director and supporting City Staff is estimated to have a budgetary cost of $10,000 annually. The budgetary cost is for planning and reporting only, and excludes the cost of labor, equipment, and materials to implement renewable energy systems.

9.8.2 Rooftop Solar Power Generation

Establishing and maintaining policies that encourage the development of rooftop solar power generation capacity within the City of El Paso is estimated to have a budgetary cost of $10,000 annually. The budgetary cost is for policy development and maintenance only, and excludes the cost of labor, equipment, and materials to implement renewable energy systems.

Renewable Energy Goals Plan

As noted in the proposed climate policy language, achieving 100% clean renewable energy by 2045 can only be accomplished by implementing a variety of strategies that work together to drive deeper impacts. The first and most important strategy in any net zero climate goal is energy efficiency. Prior to generating clean renewable energy or electrifying City infrastructure, the city must first eliminate wasted energy in the built environment. Comprehensive energy efficiency renovations are key to decarbonization, going beyond simple LED lighting

retrofits, and expanding solutions that involve improvements to the building envelope systems, heating and cooling systems, electrical systems, domestic water systems, and other building systems.

Taking a holistic approach in developing this plan will help the City to better understand how energy efficiency, electrification, and renewable energy work in unison to achieve the City's net zero climate goals. This form of assessment is referred to as Investment Grade Audit (IGA) and often involves the following scope:

- ASHRAE Level 3 Energy Audit,
- Development of recommended energy and water efficiency improvements,
- Development of recommended renewable energy and energy storage improvements,
- Development of recommended critical capital improvements,
- Development of building electrification measures to further support net-zero energy goals,
- Development of public transportation recommendations,
- Development of LED street light conversion recommendations,
- Development of electric vehicles and charging infrastructure improvements,
- Calculated cost and savings for all recommended measures,
- Calculated reduction in carbon emissions through the implementation of project scope,
- Identification of available utility rebates, grants, and other incentives to help fund improvements,
- Preliminary financial analysis of recommended project scope, and
- All tasks performed in close collaboration with City staff.

The cost to perform an investment grade audit typically falls between $0.15 to $0.30 per square foot of audited floor area. The city currently operates approximately 3.3 million square feet of permanent building space. As not to overwhelm City staff or contracted partners, it is recommended that the city approach this planning phase over a 3-year period instead of the proposed 1-year period. As the IGA is completed for one set of buildings each year, the identified improvements can immediately move into the implementation phase while the next set of buildings undergo an IGA. This will ensure that the city and community begin to experience the benefits of this plan sooner while also distributing costs and workload across multiple years of implementation.

One major benefit to this approach is that the cost of the IGA is often rolled into the cost of the construction project and funded by the savings generated from the measures implemented. This would save the city any upfront costs for taking this approach towards developing a comprehensive energy efficiency and renewable energy plan. The table below depicts the budgetary costs associated with this initiative over the recommended 3-year period.

Year	Description	Budgetary Cost
1	IGA for 33% of City Building Gross Area - ~1.1 million square feet	$165,000
2	IGA for 33% of City Building Gross Area - ~1.1 million square feet	$165,000
3	IGA for 33% of City Building Gross Area - ~1.1 million square feet	$165,000
Total		$495,000

80% Clean Renewable Energy by 2030

Baseline Annual Consumption and Cost

The city provided the following estimated annual utility information for calendar years 2019, 2020, and 2021. Only annual cost information was provided, so annual energy consumption was estimated based on $0.10/kWh for electricity and $0.50/therm for natural gas. The table below summarizes the information.

Utility	Unit	2019	2020	2021	Avg
Electricity	$	$9,918,076	$9,596,558	$10,050,409	$9,855,014
	kWh	99,180,760	95,965,580	100,504,090	98,550,143
Natural Gas	$	$1,472,848	$1,231,924	$1,370,943	$1,358,572
	therm	2,945,696	2,463,848	2,741,886	2,717,143
Total	$	$11,390,924	$10,828,482	$11,421,352	$11,213,586
	kbtu	632,974,353	573,819,359	617,108,555	607,967,422

Energy Efficiency

Reducing the amount of energy consumed by City facilities is the most cost-effective solution towards meeting net-zero and clean energy goals. Improving the performance of existing facilities through efficiency and optimization will significantly reduce the amount of costly renewable energy production necessary to achieve these goals. It is often said that *the cheapest source of energy is the energy never consumed*.

The EPA estimates that roughly 30% of the energy consumed in buildings is wasted and unnecessary in keeping the building comfortable and operational. Therefore, if it is assumed that 30% of the current energy consumed by City facilities can be identified and eliminated through the IGA process previously detailed above, the City could reduce their annual utility costs by approximately $3.4 million. The City could then leverage those savings through a project vehicle like Energy Savings Performance Contracting (ESPC) where the savings would be guaranteed to the City by an Energy Services Company (ESCO) and used to self-fund the improvements. For instance, if the City were to engage in an ESPC project with a 15-year finance term, assuming no escalation in utility rates or outside grants or incentives, the City could self-fund approximately $50 million in energy and water efficiency improvements without needing to tap into capital budgets.

Estimated Annual Utility Costs Savings from Efficiency (~30% Reduction)	$3,400,000
Potential Available Project Funding from Leverage Savings Through a 15-Year ESPC	$50,000,000

Electrification

In addition to efficiency, the City can explore the electrification of City facilities and elimination of fossil fuel based energy sources to further support these climate objectives. Practical solutions and technologies exist today that enable this conversion of fuel sources to take place. One example of an applicable technology is air-source or water-source heat pumps which provide both space heating and cooling using electricity. Heat pumps are more

energy efficient than gas-fired furnaces in heating applications and operate well in El Paso's climate zone. The recently passed Inflation Reduction Act (IRA) provides generous incentives in the form of direct payments to tax-exempt entities such as the City of El Paso to undertake these electrification initiatives.

Renewable Energy

Working in tandem with efficiency and electrification, the city will need to deploy renewable technologies, such as solar photovoltaic (PV) systems, to generate enough clean renewable energy to achieve an 80% offset. It is important to note that this offset is for the energy consumed by City facilities only and does not include offsetting carbon emissions for other items captured in a comprehensive GHG inventory (e.g. travel, supplies, etc.). Using the baseline information above, and accounting for both efficiency and electrification, the city would need to generate approximately 72 GWh of renewable energy annually, which equates to roughly 40 MW dc of new installed solar PV capacity.

The City is already underway with a couple renewable energy projects at the Airport that includes 3.5 MW dc of capacity (2 MW Solar VPPA + 1.5 MW Carport). Accounting for these systems reduces the balance to 36.5 MW dc of additional renewable energy capacity needed to achieve an 80% offset. Based on today's market, the budgetary cost to implement a mixture of rooftop, ground-mount, carport, and utility-scale solar PV across the City would be roughly $90 million assuming an average installed cost of $2.50/Watt.

The recently passed Inflation Reduction Act (IRA) provides generous incentives in the form of direct payments to tax-exempt entities such as the City of El Paso for renewable energy projects. For budgetary purposes, a 25% reduction in the cost of these systems in the form of a direct payment can be estimated by the city, reducing the total cost for this initiative to $67,500,000.

100% Clean Renewable Energy by 2045

An estimated additional 10 MW dc of renewable energy capacity would be needed to achieve 100% net-zero energy goal. It is important to note that this offset is for the energy consumed by City facilities only and does not include offsetting carbon emissions for other items captured in a comprehensive GHG inventory (e.g. travel, supplies, etc.). Based on today's market, the budgetary cost to implement a mixture of rooftop, ground-mount, carport, and utility-scale solar PV across the City would be roughly $25 million assuming an average installed cost of $2.50/Watt.

No IRA incentives are accounted for here due to timing.

El Paso Municipalization Feasibility Study Scope Definition and Cost Estimate Prepared by hbaileygroup for the City of El Paso March 22, 2023

Background

The City of El Paso Texas (the City) has a need for a high-level overview of the costs and requirements associated with a more detailed municipalization feasibility study. Due to an upcoming election prompted by a petition to vote on a "Measure to Add Climate Policy to the City Charter", which includes a provision to "employ all available efforts to convert El Paso Electric to municipal ownership", the City desires to have a general understanding of the components and range of costs for consultants to perform a study evaluating municipalization. This report provides a list of activities that should be included in a feasibility study as well as a range of costs.

Municipalization, by definition, is the transfer of private entities, assets, service providers or corporations to public ownership by a municipality. In the case of El Paso, this would be the acquisition of El Paso Electric's (EPE or the Utility) electric system by the City to serve city customers. This process has many components and can be a mutually agreed upon transfer or one done through litigation. It is important for the City to understand the steps and costs of acquiring the system that serves the City, as well as the risks and benefits. This can be accomplished through a feasibility study.

An argument might be made that the cost of acquiring the EPE system is $4.3 bill, because that is what IIF paid in 2020. Unfortunately, the acquisition price may not be a good proxy for acquiring and setting up a stand alone city owned utility. The $4.3 bill price was negotiated between two private companies and no new utility operations had to be established. A municipalization is a different legal and financial process, which will have to include a partial acquisition of EPE's service area as well as creating a whole new utility function. There are many more elements and costs to municipalize because the City is only acquiring the service area and assets within that service area.

Feasibility Study

A feasibility study will be essential in identifying and quantifying the elements that ultimately determine, not only the acquisition cost of the utility assets, but the construction costs of separating a City owned system from the Utility's larger system. In addition, capital and operating expenditures for setting up standalone operations, technology and compliance costs, new services, and power supply options will all need to be considered when evaluating the

true investment needed to municipalize. The full cost of acquiring the Utility's assets and setting up a new City operated utility cannot be determined without studying all the parts that go into forming that utility.

First, a municipalization study is a multi-year process, the cost of which can be impacted by the level of cooperation in accessing essential data, the level and type of community activism around this issue, and litigation that may be filed by the utility or other parties to delay any municipalization action. Any or all of these will impact the consultants ability to perform analysis.

Information and experience from working on the City of Boulder municipalization, along with other contacts with cities that have formed or are in the process of evaluating forming their own utility, provided data points for this report.

It is recommended that the City approach the feasibility study in a two phase process. Phase I will be a preliminary evaluation which will allow the City and its stakeholders to have a general range of costs to establish a utility and to review the steps necessary to proceed to Phase II, a detailed study encompassing a full implementation plan.

PHASE I

The Phase I feasibility study will be an evaluation of the key components of municipalization that can help determine whether forming a city owned electric utility is even possible. It would include a cost estimate based on reasonable knowledge of what would be the major components required to form the utility but qualifying that a Phase II study would be required to truly vet and model this option in more detail. In addition to the quantitative analysis and comparison to pre-established metrics, there should be a qualitative evaluation as to what is the right solution for the City. This could include things like improved equity in services, local control, and choices of programs that could be offered to the community.

The estimate for a Phase I study is between $1.2 million and $2.5 million and expected to take 1 to 1.5 years to complete. The cost and schedule are dependent on data accessibility and quality, as well as any legal processes which may impact the timing and information needed to determine whether municipalization is a reasonable option. Data accessibility examples include information from the Utility such as energy usage and demand by customer class for all consumers within the city limits, load profiles of the city usage patterns, and an inventory of assets to be acquired, with a description and vintage of equipment located in the city limits. The study will also rely on data supplied by the city such as customer demographics and growth projections, city owned electric assets, and city limit boundaries. The Phase I time frame could span from 9 months to 1.5 years, again depending on stakeholder involvement and EPE cooperation.

Answering the following questions is key to providing guidance in the evaluation and ultimate outcome of both Phase I and II of the feasibility study. These questions are fundamental to facilitate an objective evaluation that the City can use to guide their decision making:

1) What is the City hoping to achieve by taking over EPE's system that serves the city?
2) Can the City legally take over the investor owned utility? (state laws on condemnation and rights to utility infrastructure vary by state) If the answer is yes, what is the process for acquiring from an unwilling seller?
3) Who is the city utility going to serve and how will the service territory be defined?
4) What assets will the City acquire? What condition will they be in at the time of take over? What is their value?
5) What services will the City utility provide (for example will there be an emphasis on local generation, electrification of transportation, innovative services and financing for customers to become more energy efficient)?
6) How will the new utility be organized, how much of the city's resources can be shared to support the city owned utility?
7) What is the total cost of forming a utility and what will be the impact on city ratepayers?

Answering these questions is the first step in evaluating municipalization. Answering question number 1 will establish the criteria and metrics for determining the feasibility of such an undertaking.

The project should have an oversight committee that can provide guidance, establish the criteria for measuring the feasibility of a city owned utility, and be available to answer questions and provide guidance to the consultants performing the studies.

Objective criteria, that can be translated into measurable outcomes for determining whether municipalization meets the City's needs, is a critical component of evaluating feasibility. Studying the feasibility of taking over an electric utility is a complex process, which not only involves technical knowledge of utilities but an understanding of the community, its culture and priorities.

Community guidance involves knowing the priorities of who will be served, making decisions on what programs will have the most impact or will be well received, or what segment of the community may oppose this endeavor. There will be a need for public input and regular updates to the community. This oversight committee will provide that community guidance.

What the Phase I study should include:

- Criteria and metrics for a successful city owned electric utility
- Communication requirements for engaging and informing stakeholders

- Delineation of service area and customers to be served by a city owned utility
- Legality of taking over EPE assets and service area, as well as any regulatory requirements or proceedings at the Texas Public Utility Commission or Federal Energy Regulatory Commission for utility asset transfers
- Engineering assessment of the system condition, assets to be acquired, needed improvements, and points of separation
- Power supply
- Services to be provided
- Sources of Financing
- Business structure - will this be part of the city or a separate operation, will it have shared services provided by the city or will it hire/contract out the resources to support the operations
- Financial model of costs and potential impact to ratepayers in the city

PHASE II

Phase II builds on the work and decisions made during the Phase I analysis. Phase II should only proceed if the City can achieve the goals it established for forming and owning its own electric utility, as measured by the criteria established in Phase I.

Phase II takes a deep dive into the components that were identified in Phase I. For example, if it is determined the City can legally take over the Utility's assets in a defined area and the regulatory filings and oversight are verified, Phase II will document the process and steps, as well as the timeframe and refinement of the costs. It is in this phase that a true understanding of the challenges of moving forward with municipalization will be incorporated into a plan to acquire assets and transition ownership.

Detailed engineering will include an inventory of all the assets to be acquired, their age, and condition, and the engineering necessary to separate the City's service area from the Utility's larger system. In addition, a construction plan for both the separation and needed improvements to the existing system will need to be developed and priced.

Proposals and outreach for potential power suppliers will be initiated. Transition plans and staffing levels created.

Financing sources will be identified, and credit ratings obtained.

Services, rates, and billing systems will be further refined.

Facilities and technology systems identified, and roadmaps created.

A formal governance structure will be defined. Whether it will be overseen by the city council or a separate citizen's board or something in between. This is a strategic step in forming a utility.

This phase of the study evaluates all aspects of creating the utility and develops an implementation plan such that upon completion, the City will execute on the formation of their municipal electric utility.

Phase II could take from 2 to 5 years, depending on the difficulties encountered along the way. The estimated cost of this process is approximately $10,000,000 or $2 million a year. The size of the system, complexity and access to data will drive the schedule and cost.

Conclusion

In conclusion, to get the most value of a feasibility analysis, it makes sense to break the study into two phases so that decision makers and the public can get a sense of what is possible before spending millions of dollars on something that may not be legally feasible or cost effective. This should be a community decision and should, therefore, include a robust engagement plan. The more informed stakeholders are, the better the input to city leadership. Managing expectations is important and community engagement takes time and resources. Both, of which, should be built into the workplan schedule.

Exploring municipalization should not be taken lightly and requires a clear vision of what the city hopes to achieve, what goals can only be met by owning their own utility, as well as the backbone to be in it for the long haul. It will not be easy. Part of the process is exploring ways to get what the city wants. Alternative solutions may arise during the analysis that may be more cost effective. Phasing the study gives the City time, information and space to explore the best alternative for El Paso. By spending between $1.2 mill and $2.5 mill for a Phase I, the City may determine an alternative path and avoid the additional $10 mill for Phase II, or the fundamentals of the study may justify moving forward with the second phase.

Lastly, because other cities across the country are looking at or have municipalized their electric systems, I would recommend reaching out and learning about their processes and what has or has not worked. There are many reasons for a community to own and control their own electric system, especially if the current provider is not meeting their needs. However, there may also be alternative solutions to achieve those goals if the incumbent is a willing partner.

hbaileygroup
Heather Bailey
P.O. Box 50084
Austin, Texas 78763
heather@hbaileygroup.com
(512) 461-4518

Utility, non-profit, and organizational
Consultants making a difference