Effective Energy Management Strategies for North Texas Communities

Developed by

The North Central Texas Council of Governments (NCTCOG)

under contract to

The Texas State Energy Conservation Office (SECO)

Contents

Background and Overview

Why should energy plans be utilized by local governments?

Energy consumption is one of the highest sources of ozone nonattainment and regional greenhouse gas (GHG) emissions. To limit the negative effects of these emissions and achieve attainment of Environmental Protection Agency (EPA) standards, nonattainment cities and affected counties under the 2008 8-hour ozone National Ambient Air Quality Standards must set a goal to reduce their electricity consumption by five percent annually. In 2018, the Texas Commission on Environmental Quality indicated that approximately five percent of ozone-forming nitrogen oxides emissions in the Dallas-Fort Worth (DFW) ozone nonattainment area are expected to be attributable to Electric Utility Point sources. Thus, local municipalities should create an energy plan with an overarching goal to reduce their electricity consumption.

By reducing electricity consumption by five percent, a municipality can reduce strain on the grid and increase the grid reliability in extreme weather. As electrification has expanded, Electric Reliability Council of Texas (ERCOT) members have grown increasingly vocal in concerns about the stability of the electric grid. Concerns grew dramatically in the aftermath of Winter Storm Uri in 2021, during which the ERCOT grid failed for several days. The surprise winter event has raised questions about the degree of risk present to the ERCOT grid, which is isolated from other electric grids in the country. These events create a risk to the supply of heating and cooling in residential and commercial buildings, the charging of electric vehicles, and any other essential functions relying on electricity.

Similarly, extreme heat will continue to prompt grid-straining loads as the number of triple-digit days is anticipated to double from 2001-2020 levels by 2036.[1] Extremely hot weather both lessens the resiliency of the power grid and the availability of clean water for access by counties in the region due to power availability. Both higher air temperatures and higher temperatures of industrial discharges can cause changes in source water quality related to increased water temperatures.[2] This requires the Texas Commission on Environmental Quality and local counties to issue boil water notices, as the local water supply could contain germs that make humans sick.

A reduction in electricity consumption could also help offset increasing emissions due to the population growth in the DFW area. Population growth in the DFW metropolitan area outpaced any other metro area in the country in 2022, with the addition of 170,396 residents creating a drastic increase in demand for electricity in the region.[3] Cohesive plans are needed to limit the impact that this additional energy consumption has on the grid and air quality. NCTCOG highly encourages that each organization create an energy plan that supports local efforts to attain federal ozone standards across the 10-county ozone nonattainment area that is within NCTCOGs service aera boundary.

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[1] Nielsen-Gammon, John, Sara Holman, Austin Buley, and Savannah Jorgensen. "ASSESSMENT of HISTORIC and FUTURE TRENDS of EXTREME WEATHER in TEXAS, 1900-2036." Texas A&M Office of the Texas State Climatologist, October 7, 2021. https://climatexas.tamu.edu/files/ClimateReport-1900to2036-2021Update.

[2] Environmental Protection Agency Office of Water. "Incident Action Checklist – Extreme Heat." EPA, January 2015. https://www.epa.gov/system/files/documents/2021-10/incident-action-checklist-extremeheat_508c-final.pdf.

[3] US Census Bureau. "Metropolitan and Micropolitan Statistical Areas Population Totals and Components of Change: 2020-2021." Census.gov, 2022. https://www.census.gov/data/tables/time-series/demo/popest/2020s-total-metro-and-micro-statistical-areas.html.

Reducing emissions starts with making plans to implement effective strategies to reduce energy consumption. Planning for effective energy management will involve understanding your entity's baseline or starting point, the resources available to implement resulting projects and programs, and the necessity of setting and tracking goals and milestones determined during the drafting of an energy plan. These plans should be developed, implemented, and tracked to ensure progress is made to reduce consumption and conserve energy. An energy plan can provide a city with a comprehensive understanding of the steps to improve air quality. The plan should be detailed to ensure the goals pursued are ideal for reducing greenhouse gases and account for all anticipated risks.

Energy plans should be implemented within each of the facilities and/or campuses of the planning entity and produce a safe and productive environment for occupants, while simultaneously providing prudent management of financial and energy resources to reduce greenhouse gas emissions resulting from energy consumption and conserve energy whenever possible to reduce grid strain and comply with state energy consumption requirements.

Resources and Additional Information

Link	Description
Energy Management Policy & Plan Presentation	This presentation was created by NCTCOG as an explanation of how an entity can create an energy plan. The information on this presentation can be seen in the "Organizational Structure and Support for an Energy Management Plan" section of this paper.
NCTCOG and SECO Resources for Energy Management Presentation	NCTCOG and SECO created this presentation as a list of resources for information on funding options, energy codes, solar energy, and energy assessments.
Guide to Community Energy Strategic Planning | Department of Energy	This link, provided by the Department of Energy (DOE), details the step-by-step process of creating a Community Energy Strategic Plan. The DOE provides a similar list of action plans to this energy plan template that can yield an alternative perspective. Information from the DOE on establishing a leadership team can be found in the "Energy Management Roles and Responsibilities" section.
CAP-April2020.pdf (greenhoustontx.gov)	The City of Huston Energy Plan is a great example of how an Energy Plan should function. This plan has a section titled, "How to Read this Plan," which can be useful when completing steps 3 and 5 of the action plans.
Home | Dallas Climate Action | City of Dallas	This link to the City of Dallas Energy Plan provides insight into a local energy plan. The City of Dallas included many deliverables which can inspire the categories and goals chosen by municipalities when implementing the energy plan template provided in this paper.
City of Denton Renewable Resource Plan (DRRP) (PDF)	The City of Denton is another example of a local Energy Plan that could serve as inspiration for municipalities creating their own energy plan. Specifically, this energy plan could be useful when writing a mission statement or statement on concern, as the City of Denton has many statements with similar attributes.

Organizational Structure and Support for an Energy Management Plan

Mission Statement

A mission statement announces that the municipality will dedicate the necessary resources to creating an energy plan. It is important that the cities voice their intentions through a mission statement as it will guide the project in the direction of reducing electricity consumption and increasing energy efficiency. Team members will benefit from a mission statement, as it will entail what should be expected of them throughout the project. In addition, a mission statement can assist the public in understanding what the project is, and how it will benefit them to support the project. A detailed mission statement should include the project goals and objectives, as well as any project requirements. Next, the scope of the project should be defined. This involves major deliverables, times frames, or topics that would deepen the understanding of the project. The mission statement should also state how the implementation of the energy plan will be assessed for success or failure.

Example Mission Statement:

For the purpose of addressing air quality and resiliency concerns, [City/County/District]'s mission is to reduce electricity consumption by [X%] in [Category 1, Category 2, Category 3]. To accomplish this, the [City/County/District] will measure [how will the project be assessed] to assess [the major deliverables]. The goals and targets of this energy plan should be implemented by [end project goal year].

Statement of Concern

A statement of concern is a necessary step of a well-developed energy plan. By including a statement of concern, the City/County/District is not only projecting the outcome of their goals, but it also names a central problem that the energy plan will address. Clearly defining a problem will ensure that the energy plan serves the best interests of the community. This also gives the City/County/District the opportunity to mention the consequences of not enacting an energy plan.

Example Statement of Concern:

The [City/County/District] is concerned with current and projected energy costs and power requirements due to population growth patterns within the area. It is within the best interest of the [City/County/District] to conserve energy and natural resources.

Energy Management Roles and Responsibilities

Several departments will need to be involved throughout the development and implementation of an energy plan at a local government. Consideration should be given to the following topics in determining who needs to provide input on the plan and who will be involved as progress is made toward achieving any goals laid out in the plan. Energy management may be housed in its own department at a local government. If this is the case, the energy management team should lead the effort in energy planning and lead coordination efforts with any other departments that should provide input.

This section lists the roles for those involved in the energy plan. Identifying and assigning leadership roles will promote the completion of the energy plan while effectively utilizing resources. In addition,

establishing leadership within the project will motivate stakeholders and necessary government officials to engage with the energy plan. More information can be found in the Department of Energy's Guide to Community Energy Strategic Planning.

Energy Management Roles:

- Champion for the Energy Plan
    - Highly visible, prominent government official that provides motivation and sponsorship for the energy plan.
- Plan Manager
    - Top administrator that leads the team in developing and finalizing the energy plan.
- Energy Management Steering Committee
    - The group that will lead in writing, implementing, and measuring the energy plan. This committee should include members of the departments that are involved in the project.
        - If there is an Energy Management Department, the committee may not be necessary. The Energy Management Department would lead this effort and coordinate with members of other departments as needed. Administrative tasks and lack of resources can be a barrier that may delay the execution of an energy plan. Therefore, while this committee is an optional step, it provides a great way to combat the challenge of allocating and implementing resources to complete necessary tasks.
    - Energy Management Steering Committee Responsibilities:
        - Develop a comprehensive program for energy efficient operations
        - Responsible for implementation, operations, and enforcement
        - Establish routine energy tracking
        - Evaluate energy rates and utility provider proposals
        - Routinely review efficiency improvements; recommend new technologies, more efficient equipment, systems, and operating techniques
        - Work with other departments to develop efficient practices
        - Annually review and revise the standard practices
        - Energy purchase, systems purchasing, education, reporting
- Stakeholders
    - Organizations, individuals, and others that have a vested interest in the success of the project and could contribute ideas or resources.

Energy Management Roles and Responsibilities Chart

Role	**Name and Job Title**	**Contact Information**
Champion for the Energy Plan	Name, Title	Phone Number, Email Address
Plan Manager		
Energy Management Steering Committee Member		
Stakeholder		

Acceptable Equipment Operating Parameters

This step encourages municipalities to eliminate risks involving the management of facilities in measuring, implementation, and usage. It is the municipality's responsibility to ensure that staff know how to use equipment to mitigate harm to the person or the machines. This can look like internal or external education, testing safety measures, etc. Proper equipment uses aid in the reduction of electricity consumption and will be beneficial to efforts outlined in the energy plan.

Equipment including HVAC systems, office equipment, lighting, and any other machinery utilizing electricity should be properly maintained and usage should be monitored. Outlined below are some measures that should be taken to ensure your facility cuts back on excess energy consumption through proper equipment use.

After Hours Event Approval Process

Information should be distributed to all facility staff on how to handle after-hours events requiring equipment usage. This includes requiring approval for accessing the facilities after hours, limiting the use of equipment within the facilities after hours, and requiring all lights and any equipment that consumes electricity are returned to the state they were left in at the end of normal operating hours. Lights and any equipment that consumes electricity should be turned off where possible or placed into standby mode. Equipment restrictions during after-hours use could include prohibiting the use of high consumption equipment within facilities outside of normal business hours or requiring specific approval for this equipment. All staff that have access to the facility should be informed of the approval process and the practices expected of them should they request to use the facility after hours.

Maintenance and Operation (M&O) for Buildings and Equipment

Operations and Maintenance are the decisions and actions regarding the control and upkeep of property and equipment. These include, but are not limited to, the following: 1) actions focused on scheduling, procedures, and work/systems control and optimization; and 2) performance of routine, preventive, predictive, scheduled, and unscheduled actions aimed at preventing equipment failure or decline with the goal of increasing efficiency, reliability, and safety.

Promotion of Energy Management

The prime objective of this step is to promote programs and practices that aim to minimize energy consumption to the maximum extent possible. This should start internally, with municipal facilities and grow externally into the communities it serves through promotion of efforts and strategies consumers can practice conserving energy. The specific activities related to this step will vary based on the goals set in the organization's energy plan.

Awareness and Outreach

Ensure all employees within a facility implementing an energy plan are aware of the efforts of the organization to reduce energy consumption and encourage them to follow some best practices.

- All staff, occupants, should be aware of utility management efforts.
    - Signage to turn off lights, report improper use of equipment, etc.

    - Implementation of an organization-wide after-hours approval process
    - Posted schedules for equipment maintenance
- Provide feedback on energy and $ saved.
    - Posters, emails, newsletters
    - Use of ENERGY STAR Portfolio Manager or internal consumption tracking
    - ENERGY STAR Certifications
    - Incentives for achieving goals or participating in efforts to reduce consumption

Integration into Energy Planning

STEP 1 – Make a Commitment to Energy Conservation

Making a commitment to energy conservation is one of the first steps in the creation of an energy plan. This involves stating what the problem is and why the city is choosing to approach it. By addressing the problem and its causes, this step sets an expectation of what the energy plan should achieve. According to the Texas Health and Safety code, it is the responsibility of the ozone nonattainment areas and affected counties to set a five percent energy conservation goal. While this mandate is specific to ozone nonattainment areas, it serves as a best practice for all local governments to set and strive for a goal of reducing energy consumption by five percent annually to stay on track with their energy goals. This step involves creating both a mission statement and a statement of concern. More information on those can be found on page **6**.

Step 1: Mission Statement

For the purpose of addressing air quality and resiliency concerns, [City/County/District]'s mission is to reduce electricity consumption by [X%] in [Category 1, Category 2, Category 3]. To accomplish this, the [City/County/District] will measure [how will the project be assessed] to assess [the major deliverables]. The goals and targets of this energy plan should be implemented by [end project goal year].

Step 1: Statement of Concern

The [City/County/District] is concerned with current and projected energy costs and power requirements due to current population growth patterns within the area. It is within the best interest of the [City/County/District] to conserve energy and natural resources.

STEP 2 – Assess Performance

This step advises cities on what categories should be focused on and what goals are achievable. Local Government Energy Reporting (LGER) will be useful to show where energy reduction in the municipality is necessary and feasible. For organizations that do not complete LGER annually, reviewing the reporting requirements on SECO's website will provide guidance to create an internal report that will identify baselines for your energy plan. See the reporting help guide here for an understanding of the necessary data: https://comptroller.texas.gov/programs/seco/docs/reporting-help-guide.pdf. Assessing the current performance of a category will set a baseline for the evaluation process to introduce a target and measure the success of the action plan. NCTCOG recommends for municipalities to use the EnergyStar Portfolio Manager to consolidate energy consumption and billing information to build institutional knowledge and enable benchmarking over time. Optional areas to assess are the current cost of electricity, the current ozone levels, and the current greenhouse gas emissions for the municipality.

Step 2: Pre-Energy Plan Metrics

Metric	Pre-Energy Plan Measurement
Electricity Consumption (annually or monthly average)	
Amount spent on electricity (annually or monthly average)	
Greenhouse Gas (GHG) Emissions (current)	

STEP 3 – Assign Categories and Set Goals

After assessing a baseline for electricity consumption, amount spent on electricity, and GHG emissions, cities should list areas in their municipalities that would like to see the biggest reduction in emissions. These categories are broad, foundational areas which utilize energy planning and should be addressed in the mission statement. Goals are the specific issues that need to be addressed in each category. Each goal of a category should have an audience of either the residential, commercial, or industrial sectors. Which audience the municipality wants to address will influence what the goal for that category is. The audience type also guides the target of an energy plan. Targets will tailor goals into achievable statutes that can be measured and assessed. Co-Benefits give additional reasons as to why this goal should be addressed, beyond the need to reduce electricity consumption and GHG emissions. Co-Benefits include, but are not limited to:

- Accessibility
- Affordability
- Resilience
- Cost-Savings
- Economic Growth
- Improved Environmental Quality
- Better Health and Well-being
- Workforce Development

In addition to assigning categories and setting goals, the municipality should set a budget for the energy plan. In this step, funding from grants and outside resources should be considered. Creating a budget of available funding will ensure that the steps going forward are feasible, as it will indicate what list of goals will be able to be funded together and accomplished in this energy plan. When completing the budget sheet for the energy plan, be sure to consider the cost of each item over the course of plan implementation, not just for plan drafting or an individual goal outlined in the plan. For the plan to be successful, it will be important to budget for all activities to be completed under the plan.

Step 3: Goals Chart

Category	Goal and Audience	Co-Benefits
1. Category A	1. Goal 1A	See “Co-Benefits Examples”
	2. Goal 2A	See “Co-Benefits Examples”
	3. Goal 3A	See “Co-Benefits Examples”
2. Category B	1. Goal 1B	See “Co-Benefits Examples”
	2. Goal 2B	See “Co-Benefits Examples”
	3. Goal 3B	See “Co-Benefits Examples”
3. Category C	1. Goal 1C	See “Co-Benefits Examples”
	2. Goal 2C	See “Co-Benefits Examples”
	3. Goal 3C	See “Co-Benefits Examples”

Step 3: Budget Chart

Staff Time: Direct Involvement	$
Staff Time: Administrative Staff	$
Equipment Procurement/Purchasing	$
Equipment Operation and Maintenance	$
Total Budget	$+$+$+$

Example Goal Chart

Category	Goal and Audience	Co-Benefits
1. Transportation	1. Provide equable and safe mobility options for the public	Affordability, Better Health, and Well-being,
	2. Add resiliency to electric vehicle (EV) charging for the public	Resilience, Accessibility
	3. Shift to electric and low-emission vehicles for the municipal fleet	Workforce Development, Improved Environmental Quality
2. Renewables (Energy Transition)	1. Maximize solar panel opportunities for government facilities	Resilience, Cost-Savings
	2. Restore, protect, and enhance the cities' natural ability to capture and store carbon	Improved Environmental Quality, Better Health, and Well-being
	3. Maintain reliable energy during extreme weather for the public	Resilience, Better Health, and Well-being
3. Energy Efficiency	1. Ensure that new commercial buildings are constructed sustainably and are carbon neutral	Workforce Development, Economic Growth
	2. Invest in skilled local jobs to optimize commercial and industrial building operations	Workforce Development, Economic Growth
	3. Improve resilience for new and existing commercial buildings through structural and operational improvements	Workforce Development, Resilience

*Example Budget Chart**

Staff Time: Direct Involvement	$10,000
Staff Time: Administrative Staff	$2,000
Equipment Procurement/Purchasing	$17,000
Equipment Operation and Maintenance	$1,000
Total Budget	$30,000

**Budgets will vary by organization and project scope.*

STEP 4 – Collaborate with Stakeholders

After goals are determined, the next step will be to meet with stakeholders to generate ideas for the Action Plan. This step involves collaborating with organizations and individuals that could contribute ideas or resources. Some possible next steps for the project team could be joining SPEER, attending NCTCOG events, meeting with other cities, etc. This type of peer exchange can be a source of ongoing new ideas, education, and assistance with troubleshooting. Local entities should also meet with community organizers to address the needs of the community, including, but not limited to, diversity, equity, inclusion, and accessibility. In addition, municipalities should organize meetings with commercial entities that would be impacted by the goals determined in Step 3. An Energy Management Roles and Responsibilities Chart should be created and include the entire project team. Stakeholders would be individuals or organizations that the Energy Management Steering Committee would want as a point of contact, as their support would be helpful or necessary to the success of the energy plan.

Step 4: Energy Management Roles and Responsibilities Chart

Role	Name and Title	Contact Information
(e.g., Champion for the Energy Plan, Plan Manager, Energy Management Steering Committee, Stakeholder)	First and Last Name Job Title	Phone Number Email Address

STEP 5 – Create Action Plan

The action plan is the list of targets that should be achieved and actions that will be taken to reach the goals set in Step 3. Actions should be measurable and enforceable to ensure that progress is being made to reach each goal. Consider creating SMART action plans: Specific, Measurable, Attainable, Relevant, and Time-based. Targets will be broken down into their timelines, action, and emissions impact. Timelines provide an estimate of when to begin taking action to achieve each target and how long the project will take. Actions provide a specific plan that will be taken to address the target. The goal for which the targets and actions are set should be carefully considered as targets and actions are completed to ensure the goal is met. The Emissions Impact relates the strategy to one of the overarching purposes of this energy plan, to reduce ozone and greenhouse gas emissions. Lastly, this step should include a chart that lists the estimated budget for achieving the targets. These targets should not exceed the cost set in the budget of Step 2. Ensure the goals, targets, actions, and timeline are in accordance with the budget set for the project.

Step 5: Target Chart

Target	Action	Timeline	Emissions Impact
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low
Increase/Decrease X by Y%	Develop, Support, Update, Engage, etc.	Start Date: End Date:	High/Medium/Low

Step 5: Target Budget Chart

Category/Goal	Staff Time: Direct Involvement	Staff Time: Administrative Staff	Equipment Procurement/ Purchasing	Equipment Operation and Maintenance	Total Budget
1.1	$	$	$	$	$
1.2	$	$	$	$	$
1.3	$	$	$	$	$
2.1	$	$	$	$	$
2.2	$	$	$	$	$
2.3	$	$	$	$	$
3.1	$	$	$	$	$
3.2	$	$	$	$	$
3.3	$	$	$	$	$
Total	**$**	**$**	**$**	**$**	**$**

Example Target Chart

Target	Action	Timeline	Emissions Impact
1.1 Increase bike lanes in residential areas by 100 miles	Develop bike lane plan	Start Date: 2025 End Date: 2040	Medium
1.2 Add two resiliency EV charging stations for public use	Develop resiliency EV charging stations for public use	Start Date: 2025 End Date: 2035	Low
1.3 Convert non-emergency, light-duty municipal fleet to 100% EV	Update municipal fleet	Start Date: 2025 End Date: 2040	High
2.1 Increase solar panels on government facilities by 40%	Develop plan to increase solar panels	Start Date: 2025 End Date: 2040	Medium
2.2 Designate at least 1 20 Arce nature preserve, and plant 10,000 trees	Develop nature preserve and plan to plant trees	Start Date: 2025 End Date: 2030	Low
2.3 Encourage non-critical businesses to decrease electricity use during an extreme weather vent by 30%	Engage with businesses to educate on resiliency	Start Date: 2025 End Date: 2030	Medium
3.1 Implement Energy Star through the city	Support Energy Star for new buildings	Start Date: 2025 End Date: 2035	Medium
3.2 70% of non-residential buildings operated by trained building operator	Engage with non-residential organizations to educate on emission reduction	Start Date: 2025 End Date: 2030	Low
3.3 Implement a citywide building weatherization program through partnership with community organizations	Develop building weatherization program and engage with local community organizations	Start Date: 2025 End Date: 2040	Low

*Example Target Budget Chart**

Category/Goal	Staff Time: Direct Involvement	Staff Time: Administrative Staff	Equipment Procurement/ Purchasing	Equipment Operation and Maintenance	Total Budget**
1.1	$2,000	$500	$0	$0	$2,500
1.2	$1,000	$0	$10,000	$500	$11,500
1.3	$2,000	$0	$5,000	$500	$7,500
2.1	$1,000	$500	$0	$0	$1,500
2.2	$500	$0	$1,000	$0	$1,500
2.3	$500	$0	$0	$0	$500
3.1	$1,000	$500	$0	$0	$1,500
3.2	$1,000	$0	$0	$0	$1,000
3.3	$1,000	$500	$1,000	$0	$2,500
Total* **	**$10,000**	**$2,000**	**$17,000**	**$1,000**	**$30,000**

**Budgets will vary by organization and project scope.*

***These numbers are not intended to serve as an accurate estimate for the cost of the actions required for each goal.*

****These totals should match those in the Budget Chart created in Step 2.*

STEP 6 – Implement Action Plan

The action plan advises the implementation of any energy plan. Municipalities should track, manage, and enforce the action plan to develop progress reports and report achieved milestones. They should also develop time frames for progress updates based on the current energy and climate related statistics in the region. (Suggested – quarterly or bi-annually) The start and stop dates of the project should align with the dates stated in Step 4. Actions should be addressed in order of priority, which will be assessed by ranking completion time, emission impact, cost, and additional feasibility limitations. These ranks should be assessed on a scale of 1 through 3, with 3 being the most feasible and 1 being the least feasible. Then those rankings should be totaled, which will indicate in order of highest number, the priority. The Energy Management Steering Committee should use their own discretion if there are duplicates of a total. Additional Feasibility Notes should be included to list the Additional Feasibility Limitations per target.

- Completion Time
    - Prioritize targets that have a shorter timeline and work up to longer projects.
    - Short term projects will produce savings quicker than long term projects, increasing engagement with the energy plan.
    - The targets that are estimated to take the lowest amount of time should scale a 3, and the targets that are estimated to take the highest amount of time should scale a 1.
- Emission Impact
    - If not all the targets can be completed within the budget or timeframe, it is best to prioritize actions with the highest emissions impact.
    - The targets that have a high emission reduction impact should rank as a 3, targets that have a medium emission reduction impact should rank as 2, and targets that have a low emission reduction impact should rank as 1.

- Cost
    - Cost should be assessed by the best cost-effectiveness.
    - If there are funding opportunities relevant to certain targets, applying for those and incorporating any funding requirements into the plan should be prioritized.
    - Targets that cost more but have a higher impact on energy efficiency may still rank high, though targets with a low cost and high impact will rank higher and should be prioritized.
- Additional Feasibility
    - Other limitations to completing targets could be political realities, enforceability, measurability, risks of success or failure, user safety, legal restraints, stakeholder support, equipment accessibility, etc.
    - If a target has a relatively small number of limitations, the rank should be a 3. If the target has a relatively large number of limitations, the rank should be 1.

Step 6: Priority Rank Chart

Category/Goal	Completion Time	Emission Impact	Cost	Additional Feasibility	Total	Rank
#.#						
#.#						
#.#						
#.#						
#.#						
#.#						
#.#						
#.#						
#.#						

Step 6: Additional Feasibility Notes

Category/Goal	Additional Feasibility Limitations
#.#	Political Realities, Enforceability, Measurability, Risks of Success or Failure, User Safety, Legal Restraints, Stakeholder Support, Equipment Accessibility, etc.
#.#	Political Realities, Enforceability, Measurability, Risks of Success or Failure, User Safety, Legal Restraints, Stakeholder Support, Equipment Accessibility, etc.
#.#	Political Realities, Enforceability, Measurability, Risks of Success or Failure, User Safety, Legal Restraints, Stakeholder Support, Equipment Accessibility, etc.
#.#	Political Realities, Enforceability, Measurability, Risks of Success or Failure, User Safety, Legal Restraints, Stakeholder Support, Equipment Accessibility, etc.
#.#	Political Realities, Enforceability, Measurability, Risks of Success or Failure, User Safety, Legal Restraints, Stakeholder Support, Equipment Accessibility, etc.
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#.#	Political Realities, Enforceability, Measurability, Risks of Success or Failure, User Safety, Legal Restraints, Stakeholder Support, Equipment Accessibility, etc.
#.#	Political Realities, Enforceability, Measurability, Risks of Success or Failure, User Safety, Legal Restraints, Stakeholder Support, Equipment Accessibility, etc.

Example Priority Rank Chart

Category/Goal	Completion Time	Emission Impact	Cost	Additional Feasibility	Total	Rank
1.1	1	2	1	1	5	8
1.2	2	1	3	2	8	4
1.3	1	3	3	3	10	1
2.1	1	1	2	2	6	6
2.2	3	1	2	1	7	6
2.3	3	2	1	2	8	3
3.1	2	2	2	1	7	5
3.2	3	1	1	3	8	2
3.3	1	1	1	1	4	9

Example Additional Feasibility Notes

Category/Goal	Additional Feasibility Limitations
1.1	Legal Restraints, User Safety
1.2	Equipment Accessibility, Risks of Success, or Failure
1.3	Equipment Accessibility
2.1	Equipment Accessibility
2.2	Legal Restraints, Political Realities
2.3	Stakeholder Support, Enforceability
3.1	Political Realities, Enforceability, Measurability
3.2	Enforceability
3.3	Political Realities, Enforceability, Legal Restraints

STEP 7 – Evaluate Progress and Re-Assess

To evaluate the success of an energy plan, a municipality must complete another energy report after the implementation of the action plan. This is to take the difference of the pre-energy plan consumption and emission rates to the post-energy plan consumption and emission rates. The chart should show the effectiveness of the energy plan. A statement should be written to address how difficult the implementation process was and any unseen problems that may have occurred. If the municipality did not reduce carbon emissions by the necessary amount, the plan should be assessed on what succeeded in reducing greenhouse gas emissions, and what could have been better refined to inform future efforts.

Step 7: Post-Energy Plan

Metric	Pre-Energy Plan	Post-Energy Plan	Amount Reduced
Electricity Consumption			
Amount spent on electricity			
Greenhouse Gas Emissions			

STEP 8 – Recognize Achievements

When evaluating the energy plan, cities should assess where their plan was most successful and what was most beneficial in reducing electricity consumption and greenhouse gas emissions. The energy plan can then be extended to reduce consumption and emissions even further in the areas most receptable to the plan. Successful action plans in electricity consumption and emission reduction in one city can also be observed and implemented in other cities. Recognizing achievements within the energy management team is also important to reward the efforts that were put into the plan and to encourage future contributions to air quality and energy efficiency improvements within the municipality.

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Step 1: Mission Statement

For the purpose of addressing air quality and resiliency concerns, _____ mission is to reduce electricity consumption by _____ in _____, _____, _____. To accomplish this, the _____ will measure _____ to assess _____. The goals and targets of this energy plan should be implemented by _____.

Step 1: Step Statement of Concern

_____ is concerned with current and projected energy costs and power requirements due to current population growth patterns within the area. It is within the best interest of the _____ to conserve energy and natural resources.

Step 2: Assess Performance

Metric	**Pre-Energy Plan Measurement**
Electricity Consumption	
Amount spent on electricity	
Greenhouse Gas Emissions	

Step 3: Goals Chart

Category	Goal and Audience	Co-Benefits
1.	1.	
	2.	
	3.	
2.	1.	
	2.	
	3.	
3.	1.	
	2.	
	3.	

Step 3: Budget Chart

Staff Time: Direct Involvement	
Staff Time: Administrative Staff	
Equipment Procurement/Purchasing	
Equipment Operation and Maintenance	
Total Budget	

Step 4: Energy Management Roles and Responsibilities Chart

Role	Name and Title	Contact Information

Step 5: Target Chart

Target	Action	Timeline	Emissions Impact
		Start Date: End Date:	
		Start Date: End Date:	
		Start Date: End Date:	
		Start Date: End Date:	
		Start Date: End Date:	
		Start Date: End Date:	
		Start Date: End Date:	
		Start Date: End Date:	
		Start Date: End Date:	

Step 5: Target Budget Chart

Category/Goal	Staff Time: Direct Involvement	Staff Time: Administrative Staff	Equipment Procurement/ Purchasing	Equipment Operation and Maintenance	Total Budget

Step 6: Priority Rank Chart

Category/Goal	Completion Time	Emissions Impact	Cost	Additional Feasibility	Total	Rank

Step 6: Additional Feasibility Notes

Category/Goal	Additional Feasibility Limitations

Step 7: Evaluate Progress and Re-Assess

Metric	Pre-Energy Plan	Post-Energy Plan	Amount Reduced
Electricity Consumption			
Amount spent on electricity			
Greenhouse Gas Emissions			

Step 8: Recognize Achievements

Assess the results of energy plan implementation, identify areas where continued effort is needed, publicize achievements to staff and communities served, and reward participant efforts.