



Community Energy Plan

wattsmart® Communities



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Acknowledgements

A special thanks to the following organizations and individuals who helped develop this Community Energy Plan for the City of Moab.

Moab's Community Planning Team

The team was formed from a diverse group of City and County staff, local organizations, local businesses, and devoted community members.

City of Moab and Grand County Representatives

- Deborah Barton, Solid Waste Special Services District #1
- Lisa Church, City of Moab Communications Manager
- Pat Dean, City of Moab Public Works Director
- Ruth Dillon, Grand County Council Administrator
- Mike Duncan, City of Moab City Council
- Jeff Galley, City of Moab Streets Superintendent
- Eric Johanson, City of Moab Assistant City Engineer
- Kalen Jones, City of Moab City Council
- Zacharia Levine, Grand County Community and Economic Development Director
- Kaitlin Myers, Grand County Community and Economic Development Specialist
- Emily Niehaus, City of Moab Mayor
- Rosemarie Russo, City of Moab Sustainability Director

Community Representatives

- Andrew Austin, Austin Solar
- Roslynn Brain-McCann, Utah State University Moab
- Darcey Brown, Grand County League of Women Voters President
- Andrea Cook, City of Moab resident, Educational Consultant
- Maggie Corson, Portal Vista HOA
- Liz Dana, B2Rez, Bynum Development
- Barry Ellison, Ponderosa Energy Consulting
- Shik Han, Business Partnership
- Bill Hawley, Grand County Airport Board
- Whitney Hawley, City of Moab resident
- Phil Irby, Portal Vista HOA
- Sara Melnicoff, Moab Solutions
- Ben Oberhand, Ponderosa Energy Consulting
- Howard Trenholme, Green to Gold Business Partner, Red Rock Café CEO

Rocky Mountain Power Representatives

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- Bill Comeau, Director of Customer Solutions
- Deb Dull, Regional Business Manager
- Clay Monroe, **wattsmart** Business Program Manager

wattsmart Communities Facilitators

- Susan Blythe, Brendle Group
- Ellie Troxell, Brendle Group

Executive Summary

This Community Energy Plan (“plan”) highlights energy priorities for the City of Moab and outlines tangible steps for the City to move the community toward its energy efficiency and renewable energy goals. Rocky Mountain Power’s **wattsmart** Communities team facilitated a series of planning workshops with Moab’s Community Planning Team – starting in fall of 2017 and wrapping up in spring 2018 – to develop this plan. The planning team included representatives from Moab’s City operations, Solid Waste Special Services District #1, Grand County, Utah State University Moab, local businesses and trades, and citizens committed to representing local energy priorities and supporting implementation of the plan’s strategies.

Vision and Goals

Aligning with Moab’s [General Plan](#) and [2020 Vision: A Sustainable Moab Plan](#), the vision for this plan, and related efforts, is to support evolving and sustaining a complete community that values a diverse and stable resident population, a healthy environment, a resilient economy, and the arts and culture by:

- ***Reducing community dependence upon nonrenewable fuels and increasing community utilization of clean, renewable energy sources***
- ***Increasing energy efficiency and the utilization of clean, renewable energy sources in new residential and commercial projects in Moab***
- ***Increasing the energy efficiency of Moab’s least efficient residential and commercial structure***

Focus Area 1: Housing

Increase Energy Efficiency in New and Remodel Construction

Increase Energy Efficiency in Existing Housing

Focus Area 2: Lodging

Increase Energy Efficiency and Renewable Energy Activities in the Sector

Focus Area 3: Community Solar

Encourage Rooftop Solar and Participation in Renewable Energy Programs

Develop Options for Local Solar Capacity in Grand County



Decide to Thrive

The City of Moab engaged with Rocky Mountain Power's **wattsmart** Communities program to leverage resources for developing an actionable electric energy plan for the community. As part of the planning process, community stakeholders were identified and invited to participate on a Community Planning Team. They were convened for planning workshops where their input on community priorities, targets, and strategies were gathered and form the basis for this plan. The Community Planning Team members represent a variety of community organizations, views, and perspectives for a more informed plan. Also, they will be instrumental in leading and executing the efficiency and renewable energy strategies identified and engaging the broader community for greatest impact.

This Community Energy Plan is a first step in a broader sustainability planning effort underway at the City and will serve as a template and catalyst for other efforts.

wattsmart Communities

wattsmart Communities is Rocky Mountain Power's newest program within the **wattsmart** portfolio. This program broadens Rocky Mountain Power's energy efficiency and renewable energy programs delivered to entire communities, such as Moab's, with the commitment to support the unique needs of the community toward achieving community energy-savings goals.

The content of this plan is derived from the outcomes of three planning workshops over the course of four months with Moab's Community Energy Leader and Community Planning Team committed to representing local energy priorities. During this process, the Community Planning Team answered three essential questions: (1) Where are we now? (2) Where do we want to go? and (3) What is our course of action? (see Figure 1).



Figure 1. **wattsmart** Communities Planning Process

COMMUNITY ACTION PLAN

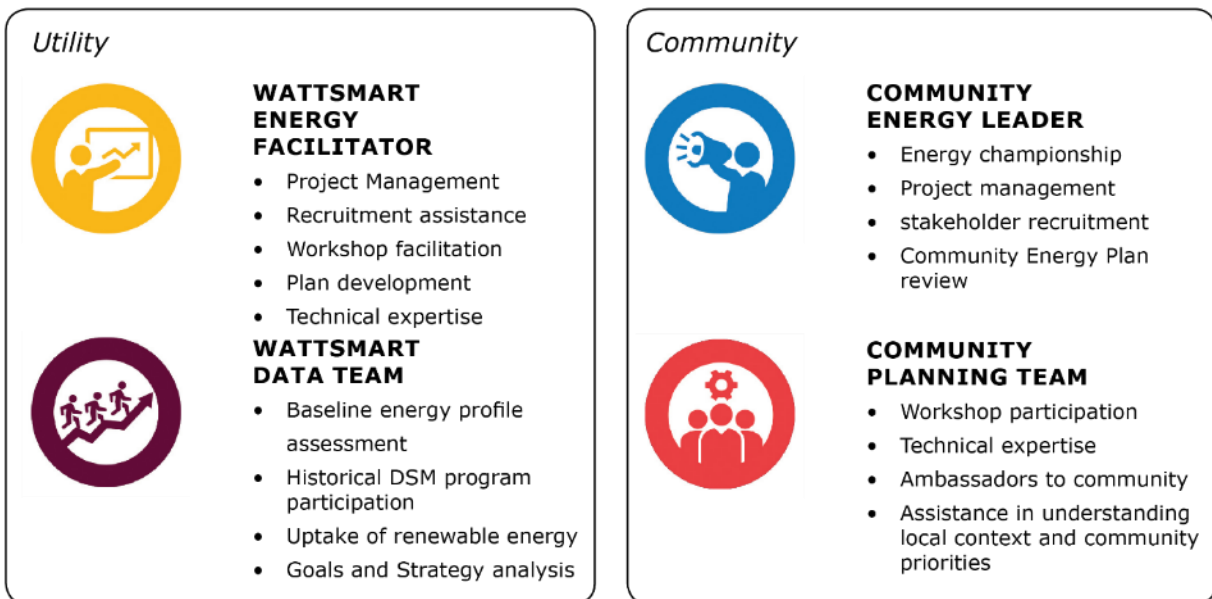


Figure 2. **wattsmart** Communities Roles and Terminology

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Where Are We Now?

The City of Moab has always been influenced by, and is determined to sustain, natural resources. Exemplifying the City's long history of environmental stewardship, Moab became the first United States Environmental Protection Agency (US EPA) Green Power Community in the nation. In 2004, the City gained recognition by generating 4% of its energy use from renewable sources. Likewise, as a

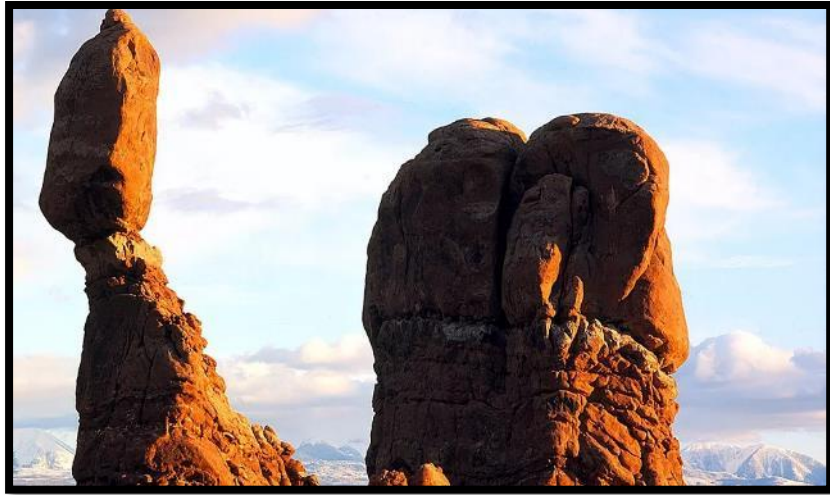


Figure 3. Balancing Economic, Environmental, and Social Sustainability (source: www.sustainablemoab.com)

longtime supporter of renewable energy, the City of Moab has a co-beneficial partnership with Rocky Mountain Power beginning with its participation in Blue Sky in 2002. Through its Blue Sky participation, the Moab community has been awarded over \$430,000 in Blue Sky renewable energy funding for seven local renewable energy projects (list of projects in Appendix 2).

With this as a backdrop, the City recognizes the need to continue to lead in promoting energy efficiency and renewable energy community-wide *and* regionally. To this end, the City believes in not only setting goals to reduce energy use and increase support for and use of non-renewable fuels, but also to take immediate and impactful action today to make progress on its aspirational goals identified in *2020 Vision: A Sustainable Moab Plan* and in support of the Global Covenant of Mayors, signed in 2017.

2020 Vision goals include reducing the City of Moab government's proportionate use of non-renewable fuels by 20% by 2020; increasing the City of Moab government's proportionate use of clean, renewable energy sources by 20% by 2020; and achieving 100% renewable electricity use for government facilities by 2027 and community-wide by 2030. At the same time, the City wants to be a model for local residents, businesses, and other communities with a unifying call to action through programs such as lighting assessments and upgrades and participation in sustainable business recognition programs. Additionally, Moab recently was selected as one of ten national teams to participate in the Solar Energy Innovation Network. The Network is a collaborative research effort focused on developing long-term, solar-enhanced grid reliability and resiliency.

The City is committed to operating in a manner that lowers its ecological impacts while strengthening economic and societal leadership, known as the Triple Bottom Line (TBL) and facilitating community challenges that consider TBL impacts. The City continues to look for ways to collaborate with state and local organizations that promote sustainable economics, equity, and environmental stewardship, such as Community Rebuilds and the Housing Authority of Southern Utah.

Community Rebuilds is a local non-profit organization that builds energy-efficient housing, provides sustainability education, and improves the housing opportunities for the workforce. The Housing Authority of Southern Utah provides sustainably-built and affordable homes to eligible occupants (Figure 4). Other TBL initiatives include helping businesses apply for utility incentives, mentoring local community members in forming a new energy efficiency consulting firm (Ponderosa Energy), and donating energy efficient light bulbs to low-income families through the Food Bank and Workforce Development Office.

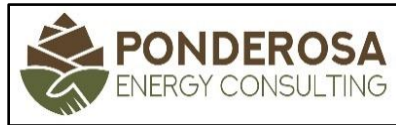


Figure 4. Community Rebuilds Efforts

More broadly, under the [Global Covenant of Mayors](#), Moab has committed to implement policies and undertake measures to reduce and limit greenhouse gas (GHG) emissions, prepare for the impacts of climate change, increase access to sustainable energy, and track progress toward these objectives.

Moab has pledged to develop, formally adopt, and report on the following elements. This Community Energy Plan directly or indirectly supports all of them.

- Community-scale GHG emission inventory
- An assessment of climate hazards and vulnerabilities
- Ambitious, measurable, and time-bound target(s) to reduce/limit GHG emissions
- Ambitious adaptation vision and goals based on quantified scientific evidence when possible, to increase local resilience to climate change
- Ambitious and just (equitable) goal to improve access to sustainable energy

- Plan(s) to address climate change mitigation / low emission development, climate resilience and adaptation, and access to sustainable energy, including provisions for regular (annual or biennial) progress reports

Building upon this legacy and a broader climate perspective, this Community Energy Plan is a catalyst for action, involving the community in measurable and impactful initiatives and outlining a process for tracking progress toward longer-term reduction goals.

Community Energy Profile

A first step in the **wattsmart** Communities planning process is to explore a community's energy profile, which provides a picture of the community's current energy landscape. **wattsmart** Communities facilitators analyzed and presented electric energy consumption and renewable energy net-metering data provided by Rocky Mountain Power by user type (i.e., residential and non-residential) to illustrate the community's electricity baseline as a framework for developing the targets and actions in this plan. Moab's energy profile illustrates historic electricity use and incentive program participation, helps identify potential opportunities, and supports model scenarios that informed decision making during the planning process. Three years of data, 2014-2016, were used for analysis, with 2016 established as the baseline.

Electricity Consumption

As of 2016, Moab has approximately 6,240 total customers.¹ While customers in Moab are primarily residential (83%), the residential customers consumed less than half of the community's electricity in 2016 – about 41.2 gigawatt-hours (GWh) (33%). Contrastingly, while there are far fewer non-residential customers, they consumed over half the electricity in 2016 – about 82.2 GWh (67%). Figure 5 shows the Moab community's proportion of customers in comparison with electricity use in 2016.

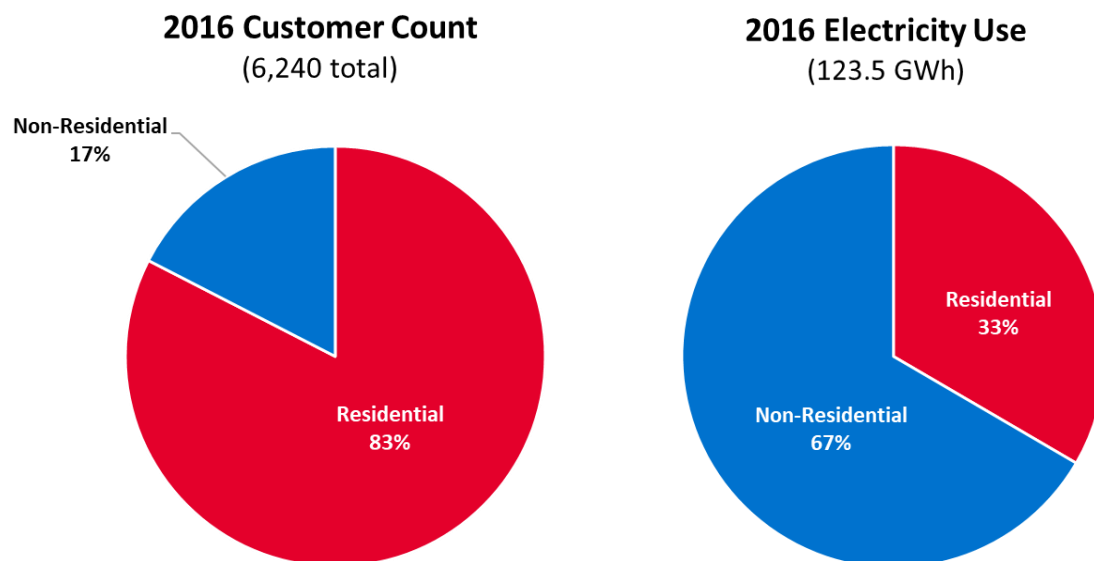


Figure 5. Electricity Use by Customer Type in 2016

¹ A customer is defined as a unique identifier for a location of electric service.

Year-to-year electricity consumption from 2014 through 2016 shows modest growth in both the residential and non-residential sectors. The residential sector exhibited a 1.0% increase in electricity use, whereas the residential customer base grew by 1.5% over the same period. The non-residential sector exhibited a 1.8% increase in electricity use over the 3-year period while the non-residential customer base grew nearly 2.3%. Therefore, electricity use is not linearly correlated with customer base growth per sector. Figure 6 shows year-to-year sector consumption from 2014 to 2016.

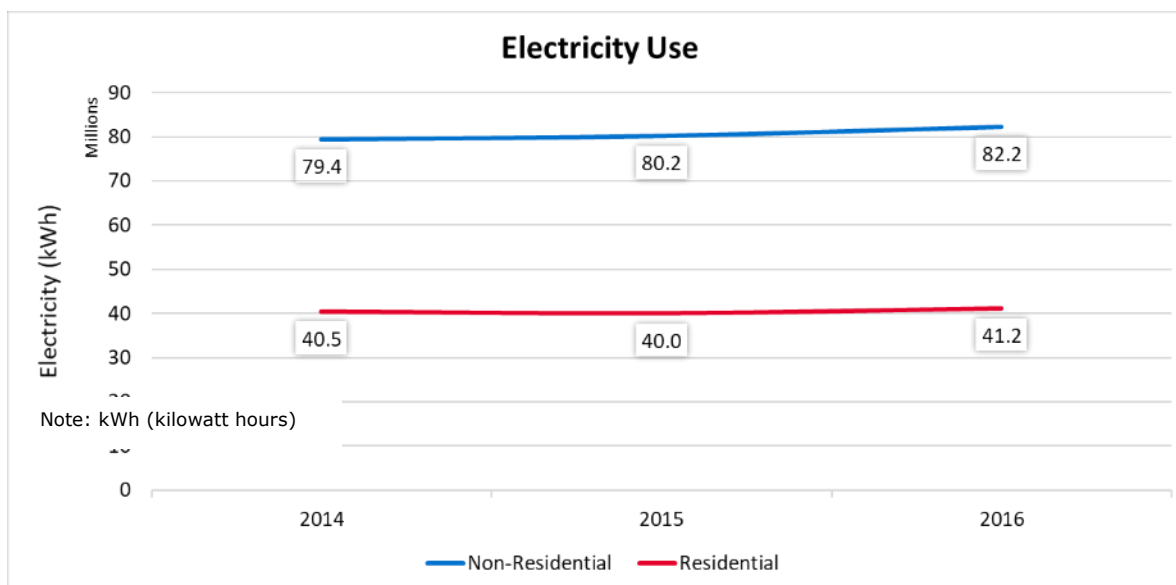


Figure 6. Year-to-Year Consumption by Sector (2014-2016)

Net Metering

Some Moab customers generate a part or all of their electricity from on-site solar or other renewable energy generators. Net metering enables these customers to connect to the power grid and, through a billing mechanism, receive credit for the electricity they supply back to the grid. In 2016, net metering electricity generation in Moab was approximately 1.52 GWh, with a nearly 50/50 split between residential and non-residential generation. Figure 7 shows Moab's net metering generation in 2016.

Net-metered electricity generation has grown significantly (75%) in the residential and non-residential sectors from 2014 to 2016. This exemplifies a strong and growing interest in the Moab

Net Metering kWh Generation (1.52 GWh)

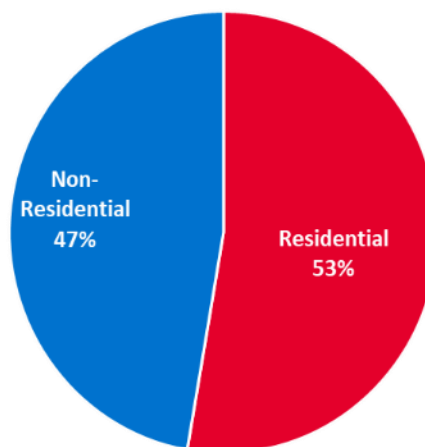


Figure 7. Net Metering Electricity Generation (2016)

community for renewable energy generation. Figure 8 displays year-to-year net metering trends.

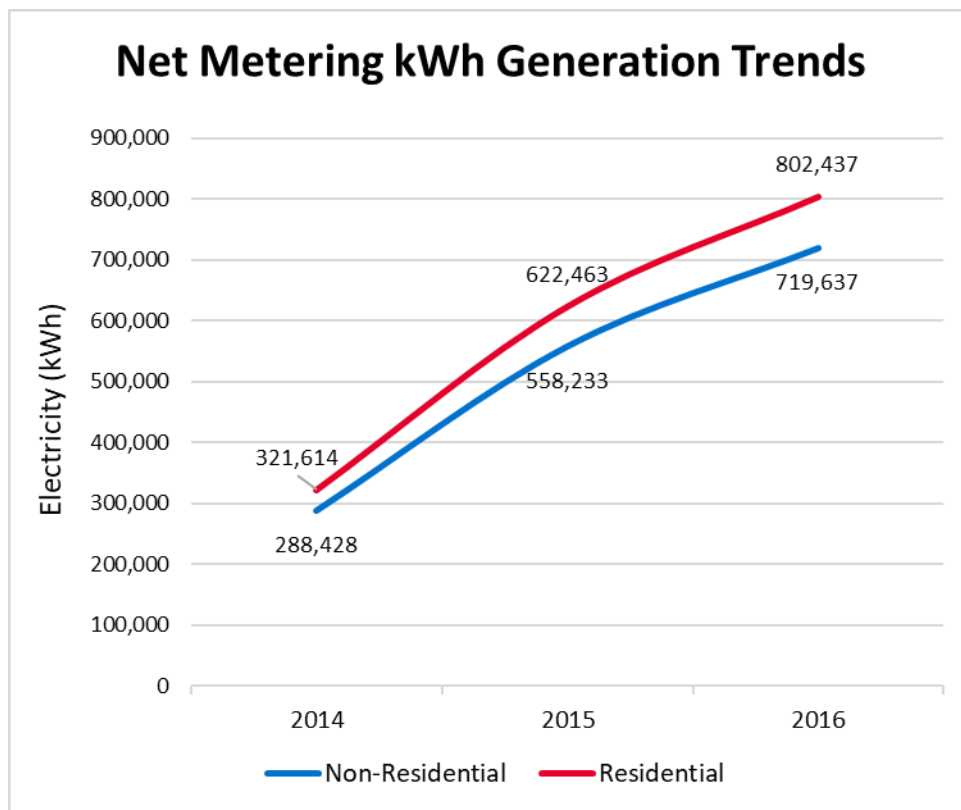


Figure 8. Net Metering Electricity Generation Trends (2014-2016)

Electricity Costs

The Moab community spent an estimated \$12.2 million in electricity costs in 2016. Per residential customer, this amounts to an average of \$930 spent annually, or about \$80 monthly. An average non-residential customer spent \$6,680 annually, or about \$560 monthly. Note that electricity costs vary by sector and time of year. For more information about energy rates and charges by sector, visit www.rockymountainpower.net.

Program Participation

Baseline data provided by Rocky Mountain Power include historic participation counts in **wattsmart** demand-side management (DSM) programs and related electricity savings, as well as renewable energy program customer participation counts and energy delivery. These data provide a snapshot of the types of programs customers in Moab are using and to what degree. They also show opportunities for greater participation in the available offerings and helped to guide strategy development for this plan.

wattsmart Program Participation

In the years 2015 and 2016, an average of 112 of 5,074 eligible residential customers in Moab (2.2%) participated in a DSM program. Of the participating customers, an average of 117 projects were completed, as shown in Figure 9, with average total annual electricity savings of 527 kWh per project. This is equivalent to a participating homeowner saving \$47 annually on his/her electricity bill. The program with the greatest participation was Energy Kits and the top three average cost-saving projects were the following:

1. New Homes (\$115/project)
2. Home Energy Savings-HVAC (\$124/project)
3. Home Energy Savings-Water Heater (\$83/project)

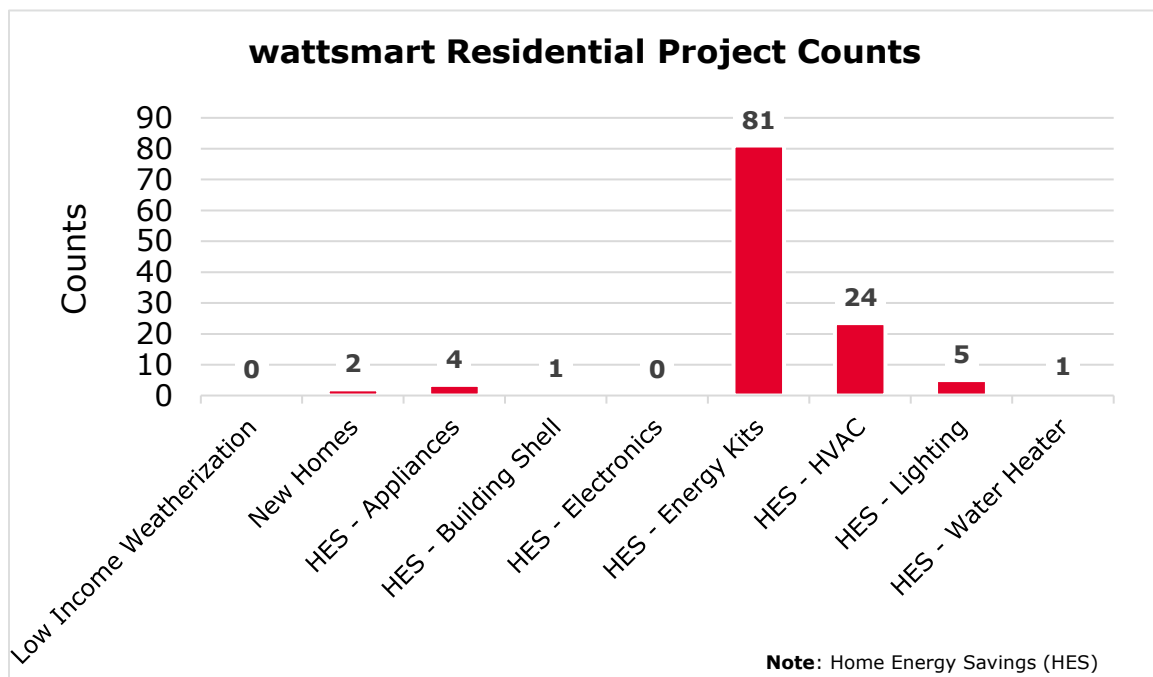


Figure 9. **wattsmart Residential Average Project Counts (2015-2016)**

Likewise, in 2015 and 2016, an average 22 of 1,065 non-residential eligible customers participated in a DSM program. Of the participating customers, an average of 29 projects were completed, as shown in Figure 10, with average annual electricity savings of 26,760 kWh per project. For businesses, this equates to saving about \$2,408 annually, or \$201 on their monthly electricity bill. The program with greatest participation was **wattsmart Business Lighting** and the top three cost-saving projects, on average, were the following:

1. **wattsmart Business-Custom** (\$19,045/project)
2. **wattsmart Business-Irrigation** (\$1,775/project)
3. **wattsmart Business-Lighting** (\$1,614/project)

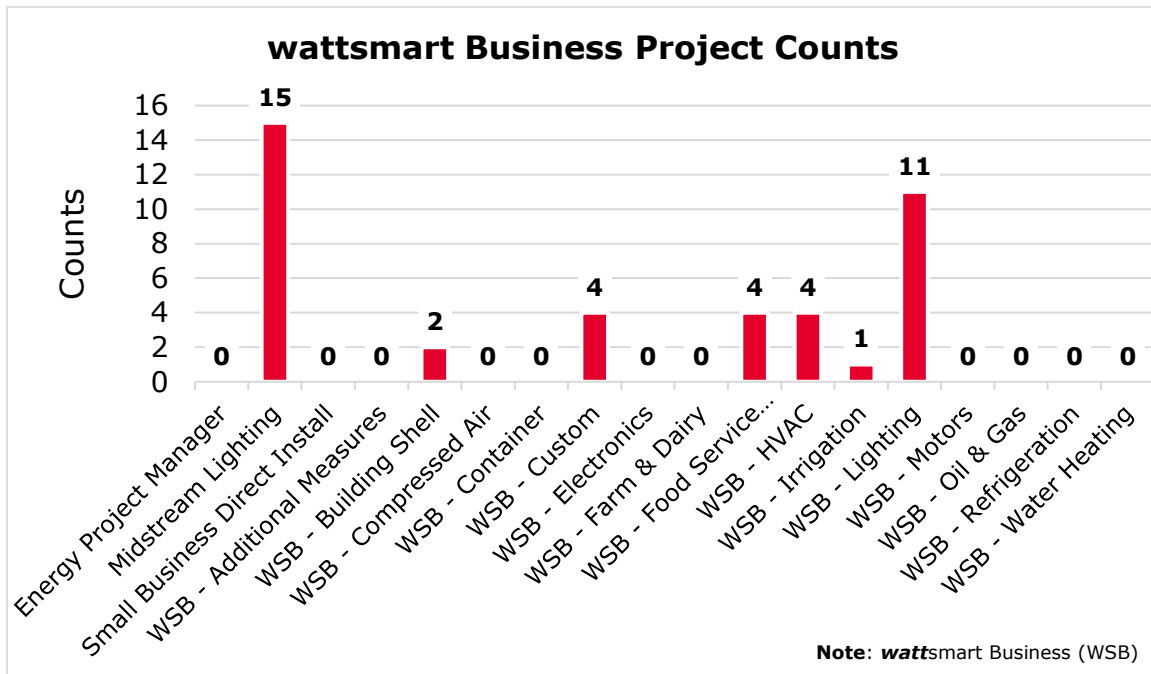


Figure 10. **wattsmart Business Project Counts (2015-2016)**

Renewable Energy Program Participation

In 2016, there were 735 customers participating in the Blue Sky renewable energy program representing about 12% of the eligible customers and 2.6% of the community's total electricity use (summarized in Figure 11). Non-residential customers subscribe nearly half of the energy delivered through Blue Sky even though they represent a small portion of Blue Sky customers in Moab. Table 1 summarizes Blue Sky's average customer base, generation per customer, and percent of annual electricity use per customer by sector, averaged from 2014 to 2016.

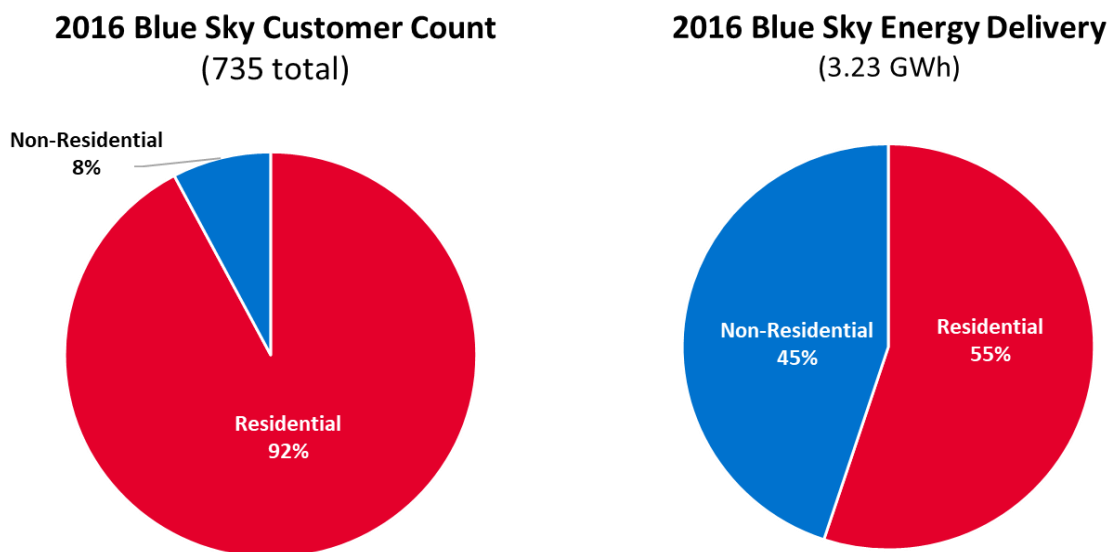


Figure 11. **Blue Sky Program (2016)**

Table 1. Blue Sky Program Summary (2014-2016)

Sector	Average Customer Count	Average Generation per Customer (kWh/ customer)	Average Percent Generated of Annual Electricity Use
Residential	689	2,642	33%
Non-Residential	59	25,591	34%

Solar Subscriber is an alternative renewable energy program offered by Rocky Mountain Power that allows customers to get some or all of their energy from solar power. Customers subscribe in blocks of 200 kWh and can keep their subscription for up to 20 years. This program was not available to Moab customers prior to 2017 so no historic data are available.

Community Energy Efforts

The City of Moab has a long history of leading by example in pursuing and enacting energy-related activities and initiatives. Many of these initiatives are included in Table 2.

Table 2. Community Energy Practices

Moab's Past and Present Energy Efforts
City of Moab • Designated as the first Green Power Community by the US EPA in 2004. • General Plan 2017 update addresses energy and resource conservation within the Environmental Sustainability element with detailed goals, policies, and action steps. • Created and filled a new full-time Sustainability Director position in 2017. ◦ Responsibilities include implementing comprehensive strategies to help Moab reach its energy efficiency and renewable energy goals. • Adopted <i>2020 Vision: A Sustainable Moab Plan</i> (2008) that outlines goals for future energy independence: ◦ Transitioning municipal operations to at least 50% renewable electricity by 2024 and 100% by 2027. ◦ Transitioning to 100% community-wide renewable electricity by 2030. ◦ Reducing by 50% all GHG emissions community wide by 2032 and by 80% by 2040. • Awarded a Solar Energy Innovation Network grant administered by the National Renewable Energy Laboratory (NREL) and supported by the Department of Energy (DOE) to accelerate renewables through data-based decision-making in 2017. • Installed solar at almost all City-owned buildings, including the Animal Shelter (2011), City Hall (2015), Art Center (2006), and Recreation and Aquatic Center (2006). • Installed a geothermal system at City Hall in 2005.² • Recipient of a \$50,000 grant to install 4 electric vehicle charging stations in 2018, one of which will be solar powered, at Moab City Hall. • Launched Green to Gold; a free and sustainable business recognition program in 2018.

² The geothermal system is made up of 52 wells 200 feet deep under the back-parking lot. Energy is acquired by pumping a glycol fluid through an enclosed closed loop system in and out of each well to the heat pumps. Building temperatures are heated or cooled from the adjusted temperature, thus using less energy to regulate indoor temperature. City Center is approximately 30,000 square feet with 21 HVAC units. The technology is shared with the Grand County Library, which is approximately 14,000 square feet and has 8 HVAC units tied into the geothermal field.

- “Leading by Example” in 2018 by joining the Green to Gold Business Program. Conducted lighting assessments at several local businesses in 2018.
- Promoted energy conservation through the new website: Sustainablemoab.com (Figure 12).
- Used community-based social marketing (CBSM) techniques to promote a pilot lighting challenge among City departments.
 - The winners were Aquatics (first place), City Administration (second place), and Art & Film (third place).
 - Collectively the light bulb replacements will avoid almost 8 tons of GHG emissions and save \$10,360.
 - Scheduled to recommission three City buildings.

Moab Community

- In 2017, 38 businesses and organizations participated in Rocky Mountain Power’s Blue Sky subscription program (see complete list in Appendix 2).
- The City launched the Superbulb Superbowl Challenge among City and Grand County staff, developers, non-profits, and the business community. Grand County’s win was reminiscent of Super Bowl XXIV.
 - County staff accounted for over 50% of the total behavior change and Red Rock Bakery, Easy Bee Farm, and Bynum Developers participated in the Superbulb Challenge.
 - Cumulative savings will be 7 tons of pollution and over \$10,000 in savings that can be redirected into the community.
- The Moab Charter School launched an energy conservation club called BEACON WATTS UP Club for 3rd-6th grade students and centers on the importance of energy conservation, renewable energy, and how to understand it using math.
 - Local energy efficiency expert, Barry Ellison, helped the club conduct its first off-campus energy audit of an important community partner, The Youth Garden Project (YPG).
 - Students learned about energy efficient lighting technology, including different types of lights and wattages. At YPG, students inventoried lights, located the wattages, and added data to their audit sheets.
 - Students learned about various tools used for energy audits, include a blower door test (Error! Reference source not found.), which measures positive and negative pressure in a building to identify leaks.
 - The club used a thermal camera to visually locate the leaky areas in a home.



Figure 12. Sustainable Moab Promotional Banners



Figure 13. Blower Door Test, Youth Garden Project



Green to Gold Business Program

In 2018, the city launched a Green to Gold Business Program. Green to Gold is a free, voluntary program that offers solutions to help Moab businesses and non-profits reduce environmental impact, save money, and gain recognition for their achievements in energy and water conservation, waste reduction, alternative transportation, and social responsibility. The first business to join the program, Adventure Inn, is just one of several businesses committed to energy efficiency and adoption of renewable energy.

Case Study: Adventure Inn

Moab's Adventure Inn is 100% solar-powered with a photovoltaic system installation on its roof. The 72.8 kW system (226 Hanwa Q-cell solar modules) is projected to produce 104,120 kWh of power annually. The electricity generated by the system is expected to power 100% of the hotel's 28 guest rooms and public spaces as well as future EV charging stations. The clean energy produced by the system is expected to equal a reduction of 135,981 pounds of GHG emissions each year – the equivalent of planting 1,735 trees. In addition to the environmental benefits, the system has the potential to save the hotel more than \$270,000.

Case Study: Red Rock Bakery

Howard Trenholme, CEO of Red Rock Bakery, was another early participant in the Green to Gold Program. Howard installed solar panels last spring before prospective changes in the rate of solar energy reimbursement in Utah were to go into effect. "Ultimately, you'll get to the point where you're not paying anything for electricity," Trenholm said. Trenholm is committed to helping other businesses as well as educating his staff and customers about the benefits of solar energy.

Case Study: Neighborhood-level Leadership

The Portal Vista Homeowners' Association collaborated with the City in its efforts to create a sustainable community. Maggie Corson led the efforts, focusing on reducing both energy and water use among HOA members. Maggie distributed the adult and kid versions of the March Water Challenge and distributed Rocky Mountain Power's brochure that provides many ideas for reducing energy use and saving money.



Figure 16. Moab Green to Gold Program



Figure 15. Moab Green to Gold Partner - Adventure Inn



Figure 14. Moab Green to Gold Partner - Red Rock Bakery



Where Do We Want to Go?

Understanding Moab's energy context and existing initiatives sets the stage for determining a roadmap for moving forward on electricity savings. This roadmap includes a broad vision for the long term and identifies community priorities formulated by the Community Planning Team that serve to organize immediate strategy activities and initiatives for making progress toward goals.

Energy Vision

An energy vision is an aspirational description that aligns with core community ideals and values to inspire work toward achieving future energy goals. The Community Planning Team agreed to use Moab's *General Plan* and *2020 Vision: A Sustainable Moab Plan* statements to serve as guides for Moab's energy future.

General Plan Vision

Evolving and sustaining a complete community that values a diverse and stable resident population, a healthy environment, a resilient economy, and the arts and culture.

2020 Vision: A Sustainable Moab Plan

Reduce community dependence upon nonrenewable fuels and increase community utilization of clean, renewable energy sources.

Increase energy efficiency and the utilization of clean, renewable energy sources in new residential and commercial projects in Moab.

Increase the energy efficiency of Moab's least efficient residential and commercial structures.

Likewise, Rocky Mountain Power is taking steps toward a more sustainable future. In partnership with Moab, both can work together to achieve their energy goals. Exemplifying Rocky Mountain Power's commitment to sustainability, Figure 17 shows the energy efficiency and fuel mix shifts from 2017 projected through 2026. Over the next 10 years, 88% of forecasted load growth will be met by energy efficiency investment of over \$1 billion. More specifically to Moab, Rocky Mountain Power has invested more than \$158,000 in rebate dollars in 2016 alone to help customers within the community save energy and money. In addition, Rocky Mountain Power has contributed to or provided sponsorships for the Moab Music Festival, the Moab Chamber of Commerce, Utah State University/Moab Campus, and several non-profit organizations on the order of more than \$60,000.

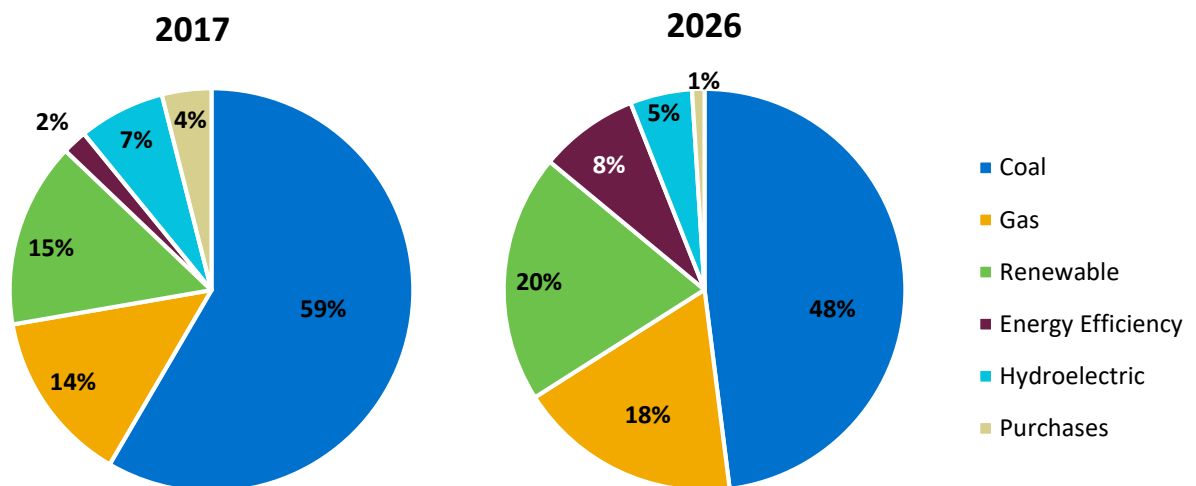


Figure 17. Rocky Mountain Power Energy Efficiency and Fuel Mix

Focus Areas

To make progress toward the community's energy vision, the Community Planning Team selected three focus areas determined to have the greatest potential for impact over the next 2 years: housing, the lodging sector, and community solar. These focus areas were selected based on the nature of the Moab community and its ties to the recreation industry, its older building stock, and analysis of baseline energy information. Other potential focus areas were also identified and will be addressed in future phases. These include, but are not limited to, homeowners' associations, municipal/public facilities, and food services.

Focus Area 1 – Housing

Moab has a diverse housing stock with an estimated 2,370 total housing units ranging from single-family detached units (62%) to mobile homes (20%). Of the existing housing stock, the majority (90%) were built prior to the year 2000. Moreover, residential customers represent over three-quarters of Moab's customer base and consumed about one-third of the community's electricity in 2016. In comprehensively engaging the housing sector, Moab's residents are poised to save energy and money while experiencing greater health and comfort in their living spaces.



Figure 18. Community Rebuilds Project

Focus Area 2 –Lodging Sector

Like other communities whose economies depend heavily on recreation and tourism, lodging of all varieties accounts for much of the building stock in Moab. According to NREL's State and Local Energy Data (SLED) Buildings and Industries Summary for Moab, there are at least 22 recognized accommodation establishments in Moab, that combined are the fourth largest group of electricity users in the community. Add to this group the less formal types of lodging

accommodations, including short-term housing rentals, and the potential grows even larger. Being able to raise awareness in this sector has the potential for significant energy impacts.

Focus Area 3 – Community Solar

Moab, as a municipality and a community, is interested in increasing renewable and alternative energy options and participation. The community has been a Utah leader in renewable energy subscriptions through Blue Sky and is looking to do more through a multifaceted approach. Moab aims to expand the number of businesses that install onsite distributive energy and join the Blue Sky subscription program or Solar Subscriber program, as well as leveraging participation in NREL's Solar Energy Innovation Network. This collaboration aims to use real data to identify the systemic and unknown barriers to increased renewable energy, and Moab is working together with other communities to explore how to overcome these barriers and promote existing and new options in their areas of influence. This Community Energy Plan is a strategic mechanism for raising awareness and promoting action for greater renewable energy activities. Figures 19 through 22 are some of the solar installation projects already in place in Moab.



Figure 19. Moab City Center Solar Installation



Figure 20. Moab Recreation and Aquatic Center Rooftop Solar



Figure 21. Moab Arts and Recreation Center Solar Panels



Figure 22. Community Rebuilds Solar Project

Course of Action

Simply identifying focus areas is a first step, but having an impact on these focus areas requires actionable and measurable strategies. The strategies laid out in this section include a description or objective for the activities, targets to show progress, a scope of work with detailed steps for getting things done, and teams and leaders with accountability for execution. Furthermore, each strategy includes estimated timelines, necessary resources, and metrics for success.

Strategies

Focus Area 1 – Housing

Strategy 1: Increase Energy Efficiency in New and Remodel Construction	
Description	
This strategy aims to reduce electricity use of new and remodel construction by raising awareness about energy efficiency resources available among Moab’s home builders and designers. This strategy will coordinate with Focus Area 2, Lodging Sector.	
Targets	
- Engage one developer to participate in Rocky Mountain Power’s New Homes Program by the end of 2019 - Pursue 10 new or remodel construction projects to incorporate energy efficiency upgrades	
Scope	
- Convene strategy team - Develop list of area contractors, developers, and architects - Engage contractors, developers, and architects to understand design development process and opportunities for improvement - Conduct a cost analysis comparison to inform decision-makers about the benefits of energy efficient development and host class(es) that offer continuing education credits to share analysis - Engage building department staff to disseminate information at point of permit for remodels and planning staff to disseminate information for new builds during the development and design process - Advocate for state adoption of up-to-date energy codes (e.g., IECC 2018)	
Responsible Parties	
Lead: Rosemarie Russo, Sustainability Director, City of Moab Team: - Lisa Church, Communications Manager, City of Moab - Jeff Reinhart, Planning and Zoning, City of Moab - Grand County Community and Economic Development - Jeff Whitney and/or Bill Hulse, Grand County Building Department - Emily Niehaus, Moab Housing Task Force representative - Jeff Adams, Claire Core, Resiliency Hub representatives - Shik Han, Developer/ contractor representative - Jenna Whetzel, Amanda Ferre, Housing Authority of Southern Utah	

Rocky Mountain Power program staff
Resources
City of Moab/ Grand County - Contractor contact information and lists, including: - Austin Solar (Andrew Austin) - Strata Solar (John Knight) - Ponderosa Energy Consulting (Ben Oberhand) - Lindquist Electrical (Ken Lindquist) - Hillside Electric (Dennis Mogensen) - Henderson Builders (Jason Henderson) - Eric Plourde - Rick McElhaney wattsmart Communities - Rocky Mountain Power support for outreach events Rocky Mountain Power programs
Communication Channels
- Sustainable Moab website - General City website - Direct outreach to developed contact list - Community partners (e.g., Moab Area Housing Task Force) - Local builders' association or similar
Timeline
Q2 2018 - Convene strategy team and establish regular check-in meetings - Develop contact list of area contractors, developers, and architects - Conduct outreach to area contractors, developers, and architects to establish relationships and identify representatives to participate on strategy team - Host brown bags on energy efficiency, WELL Building Standard, green infrastructure, blue roofs, and Leadership in Energy and Environmental Design (LEED) - Identify team roles and immediate actions - Identify and quantify a minimum standard for energy efficiency upgrades to advocate for in new builds Q3 2018 - Develop key messages and associated programs to promote - Develop first round of outreach materials - Share materials with building department staff to deliver at point of permit and planning department to deliver during development and design process - Begin outreach and encourage utility rebate participation - Conduct cost analysis comparison between standard construction practices to code compared to above-code Q4 2018 - Incorporate cost analysis comparison results into outreach materials and host class(es) or a webinar to share results offered with an opportunity to receive continuing education credits

- Continue outreach and encourage utility rebate participation
- Track utility program participation and other metrics or outcomes

Q1-Q2 2019

- Continue outreach and encourage utility rebate participation
- Refresh all outreach materials as needed
- Advocate for state adoption of up-to-date energy codes (e.g., IECC 2018)
- Evaluate progress and adjust strategy as needed
- Track utility program participation and other metrics or outcomes

Q3-Q4 2019

- Continue to advocate for state adoption of up-to-date energy codes (e.g., IECC 2018)
- Continue outreach and encourage utility rebate participation
- Track utility program participation and other metrics or outcomes

Metrics

- Number of Rocky Mountain Power program participants
- Number of contractors, developers, and architects engaged

Strategy 2: Increase Energy Efficiency in Existing Housing

Description

This strategy aims to reduce electricity use by engaging Moab's existing homeowners (single-family home, townhome, and mobile home focus) to make energy efficiency upgrades through a robust outreach and education campaign coinciding with piloting a residential rewards program that will save energy and money.

Targets

- Engage 100 homes in completing an energy efficiency upgrade³ by the end of 2019
- Engage at least one homeowners' association (HOA) to incorporate energy efficiency upgrades in planned unit developments by the end of 2019

Scope

- Convene strategy team
- Conduct outreach to identified organizations to engage on strategy team
- Develop list of HOAs and homeowners
- Develop messaging to raise awareness about energy efficiency resources and opportunities that will improve efficiency in homes
- Identify best channel(s) for outreach to homeowners and HOAs, including hosting a residential challenge (e.g., customized flyers, social media posts, website content, and in-person events or workshops)
- Develop and promote a list of top priority energy efficiency upgrades, programs, and activities
- Create a calendar detailing activities and responsibilities for a homeowner outreach campaign
- Develop and host a residential challenge
- Develop and pilot a residential rewards program
- Pursue formalizing residential rewards program, if successful

Responsible Parties

Lead: Rosemarie Russo, Sustainability Director, City of Moab

Team:

- Grand County Community and Economic Development
- Lisa Church, Communications Manager, City of Moab
- Ben Riley, Moab Area Housing Task Force representative
- Claire Core, Jenna Whetzel, Resiliency Hub representatives
- Rocky Mountain Power program staff
- Maggie Corson/Phil Irby, Portal Vista HOA representatives
- Sue Schrewsbury, Byrd & Company
- Sharon Relph, Beyond the Desert
- Premier Property
- Moab Property Management

Resources

City of Moab/ Grand County

- Homeowner contact information and list

³ An energy efficiency upgrade is defined as implementing an energy efficiency project as an outcome of participating in a RMP program. Home Energy Report does not apply.

• HOA contact information and list wattsmart Communities • Rocky Mountain Power support for outreach events • Rocky Mountain Power programs
Communication Channels
• Sustainable Moab website • General City website • Direct outreach to developed contact lists • Utility bill inserts • Community partners (e.g., Moab Housing Task Force) • Social media (e.g., Facebook, Nextdoor)
Timeline
Q2 2018 • Convene strategy team and establish regular check-in meetings • Confirm representatives from partner organization to participate on strategy team • Develop key messages and associated programs to promote • Develop contact list of homeowners and HOAs Q3 2018 • Finalize calendar of activities and responsibilities for homeowner outreach campaign • Develop first round of outreach materials • Plan and begin promotion of residential challenge Q4 2018 • Finalize and host residential challenge (e.g., goal to eliminate use of incandescent bulbs in Moab) • Begin homeowner outreach campaign • Develop framework and vet feasibility for residential rewards program • Track utility program participation and other metrics or outcomes Q1-Q2 2019 • Continue homeowner outreach campaign and encourage utility rebate participation • Continue development of residential rewards program, if viable • Evaluate progress and adjust strategy as needed • Track utility program participation and other metrics or outcomes Q3-Q4 2019 • Continue homeowner outreach campaign and encourage utility rebate participation • Launch residential rewards program pilot and assess for program formalization long-term • Track utility program participation and other metrics or outcomes
Metrics
• Number of Rocky Mountain Power program participants • Number of residential challenge participants

Focus Area 2 – Lodging Sector

Strategy 1: Increase Energy Efficiency and Renewable Energy Activities	
Description	
Given the tourist economy in Moab, hotels and other types of guest lodging make up a significant portion of buildings, whether as formal accommodations or the more informal varieties, such as home rentals. These buildings can benefit from improved efficiency and could be good candidates for renewable energy options. This strategy aims to target lodging owners/operators and staff with educational information and resources to make energy improvements to their properties, educate their guests about efficiency, and be recognized for their proactive efforts.	
Targets	
2018	- Enroll 18 businesses in the City's Green to Gold Sustainable Business Program and encourage them to participate in at least one Rocky Mountain Power wattsmart Business program - Enroll 18 businesses in a renewable energy program (e.g., Blue Sky, Subscriber Solar, Local Carbon, ENERGY STAR)
2019	- Enroll 19 businesses in the City's Green to Gold Sustainable Business Program and encourage them to participate in at least one Rocky Mountain Power wattsmart Business program - Enroll 19 businesses in a renewable energy program (e.g., Blue Sky, Subscriber Solar, Local Carbon, ENERGY STAR)
Scope	
- Convene strategy team - Develop list of lodging owners and short-term rental property management companies - Introduce Green to Gold Sustainable Business Program and encourage energy audits to identify upgrade opportunities - Develop messaging lodging owners can use to educate their guest about efficient/sustainable guest behaviors (best practices) - Develop templates for signage to communicate with guests - Compile list of energy efficiency best practices and options for renewable energy for lodging properties - Offer Lunch & Learns (e.g., energy efficiency, well building, green infrastructure, blue roofs, and LEED) - Encourage lodging owners to participate in Rocky Mountain Power's Small Business Direct program (Q2 2018) 75% of project costs covered by available incentives and co-pay of 25% - Energy assessment and project retrofit options and costs - Scheduling and retrofit project installation and management - Recommendations - Publicly recognize lodging owner actions on sustainablemoab.com and through public events - Replicate strategy for short-term rentals and food service in Moab	
Responsible Parties	
Lead: Rosemarie Russo, Sustainability Director, City of Moab	

Team: • Lizzie Samuelson, Moab Chamber of Commerce • Zacharia Levine, Grand County Community and Economic Development • Claire Core, Ben Riley, Jenna Whetzel, Resiliency Hub • Quinstar Property Management, Moab Rents, Accommodations Unlimited, Moab Property Management, Moab Realty, Red Rock Management Group (Property management companies) • RosyInn Brain-McCann, Utah State University • Maggie Corson, Portal Vista • Elaine Gizler, Travel Council • Existing lodging business that could serve as peer example (Adventure Inn/Archway Inn, Marcus Heimgartner) • Rocky Mountain Power program staff
Resources (available and needed) • Rocky Mountain Power Small Business Direct program and other wattsmart Business programs • Community Development Block and/or Hot Spot funds • NREL technical support (facilities and operators)
Communication Channels • Property management contact list • City website • Green to Gold Sustainable Business website • Chamber of Commerce contact list • Board of Realtors contact list • Social media outlets (Nextdoor, Facebook, Twitter) • Rocky Mountain Power/water utility customer email lists
Timeline Q2-Q3 2018 • Convene strategy team and develop contact list • Coordinate with Rocky Mountain Power on Grand County Small Business Direct timing and outreach (schedule for campaign) • Develop leave-behind materials for owners/operators (energy efficiency best practices) Q3 2018 • Implement Small Business Direct campaign • Share leave-behind materials with information on Green to Gold and best practices Q4 2018 • Conduct follow-up with participants • Publicly recognize participants • Develop case study to share in 2019 Q1 2019 • Repeat process for Food Service
Metrics • Number of participants

- Number of projects
- Number of Green to Gold members
- Number of Blue Sky subscribers
- Number of on-site solar installations

Focus Area 3 – Community Solar

Strategy 1: Encourage Rooftop Solar and Participation in Renewable Energy Programs
Description
Moab wants to increase local rooftop solar installations as well as participation in existing renewable energy subscription programs by enhancing awareness through education and information on renewable energy options for various residential and business customers.
Targets
• 1 to 2 workshops with goal of 50 participants (home owners and/or businesses) to raise awareness about rooftop solar and subscription solar • 5 additional residential solar installations per year (beyond current county baseline of 70 total installations), resulting in approximately 30 kilowatts (Kw) new solar capacity installed by end of 2019 • 2 additional commercial solar installations per year (beyond current county baseline of 70 total installations), resulting in approximately 30 kW new solar capacity installed by end of 2019 • 20% (~1,200 customers) of community members participating in renewable energy options, such as Blue Sky or Subscriber Solar, by end of 2019
Scope
• Convene strategy team that includes City staff, solar installers, residents or business owners who have solar, and Rocky Mountain Power representative • Work with Rocky Mountain Power and City/County communications departments to gather and/or develop educational materials that will encourage awareness and participation in existing renewable energy options (subscription packet) • Develop information on benefits of installing solar to share with property owners (would be good to have a case study or testimonial) (rooftop or ground-mounted installation packet) • Develop City incentive and application process to encourage solar installations (package with tax incentives) • Develop list of property owners (private and public) with rooftop or ground-based potential for solar arrays • Conduct outreach to property owners with benefits packet • Prepare for and host educational workshops to outline existing renewable energy options, approaches, and Moab goals (identify speakers) ◦ Subscription options and nuances (commitment, renewable energy credits [RECs], rates, benefits, etc.) ◦ On-site solar (costs, rates, return on investment, business case, etc.) • Conduct outreach to community members for workshops • Encourage HOA participation • Host workshops, sign up subscribers, introduce interested community members to solar installers • Track participation and share results publicly on sustainablemoab.com • Repeat workshops annually to sustain new participation
Responsible Parties
Lead: Mayor Emily Niehaus Team: • Rosemarie Russo, City of Moab Sustainability Director • Jeff Reinhart, City and County Planning Departments

• Grand County Community and Economic Development Department • Roslynn Brain-McCann, Utah State University • Andrew Austin, Austin Solar • John Knight, Strata Solar • Maggie Corson, Portal Vista HOA • Rocky Mountain Power staff
Resources (available and needed)
• RMP Blue Sky and Subscriber Solar programs • City incentive (new) • Federal tax incentives for solar installations
Communication Channels
• Developed contact list • City website • Utah State University Extension Sustainability Initiative based out of Utah State University Moab • Green to Gold Sustainable Business website • Chamber of Commerce contact list • Social media outlets (Nextdoor, Facebook, Twitter) • Rocky Mountain Power customer emails • Moab Ad-Vertiser classifieds publications • Public service announcements on local radio stations
Timeline
Q2 2018 • Convene strategy team • Develop calendar for materials and workshops • Gather available materials and identify gaps • Develop City solar installation incentive and application Q3 2018 • Develop solar installation benefits packet • Develop workshop content and outreach content • Conduct outreach Q4 2018 • Develop case study of existing owner of solar installation • Host first workshop • Track progress with property owner effort Q1-Q2 2019 • Host second workshop • Publicly recognize participants and share results • Develop case study to share in 2019 • Set calendar for outreach and workshops in 2019
Metrics
• kW solar capacity installed • Number of Blue Sky and Solar Subscriber participants

Strategy 2: Develop Options for Local Solar Capacity in Grand County

Description

Moab and Grand County want to increase access to and availability of locally-generated renewable energy at a variety of scales to meet community interest and demand and to be more energy independent.

Targets

- Identified site(s) for solar garden(s) in Moab or Grand County
- Proposal for developing the site(s) (including property ownership, installation ownership, community participation mechanism, and pricing)

Scope

- Convene strategy team that includes City and County planning staff, solar developer(s), and Rocky Mountain Power representative
- Research how to incorporate renewable energy into the City Parks Plan and County Parks Plan during next revision cycle and engage planning staff, where necessary
- Work with NREL collaboration and solar developers to establish criteria for optimal solar garden sites
- Identify list of potential sites currently owned by local governmental entities for first consideration and vet against siting criteria – some examples are listed below:
 - Landfill (Klondike north of the airport and 40 acres south of the Moab Landfill that was the old shooting range)
 - Airport
 - Recycling Center
 - Tailings site
 - UMTRA site
 - Old City Park stormwater retention basin
 - Lyons parking lot
 - Downtown parking lot
- Perform preliminary evaluation and prioritize sites
- Conduct due diligence on availability, limitations, jurisdictional concerns, long-term use plans, potential capacity, etc. on top three sites
- Work with developer(s) to map potential capacity, business model approach, and other details (who pays, who owns, distribution details, connectivity details, type of financing mechanism – owned, power purchase agreement, etc.)
- Prepare and deliver proposal to Rocky Mountain Power for top site(s)
- Work with Rocky Mountain Power to develop project and solicit subscribers
- Measure outcomes

Responsible Parties

Lead: Mayor Niehaus

Team:

- Rosemarie Russo, City of Moab Sustainability Director
- Jeff Reinhart, City and County Planning Departments
- Deborah Barton, Solid Waste Special Services District #1
- Grand County Community and Economic Development Department
- Deb Dull, Rocky Mountain Power
- Eric Lockhart, NREL representative
- Andrew Austin, Austin Solar

• John Knight, Strata Solar • Sarah Wright, Utah Clean Energy • Solar garden developer
Resources (available and needed)
• Political will and community interest • NREL Solar Energy Innovation Network • Solar developers • Local government properties • Rocky Mountain Power
Communication Channels
• Intra-City and County communications • City Council • City website • Community outreach channels once solar garden plans are completed and subscriptions are available (City and County websites, Facebook, events, etc.)
Timeline
Q2 2018 • Convene strategy team • Establish criteria for determine best sites • Identify list of potential sites (owned by local governmental organizations) Q3 2018 • Vet sites against criteria • Conduct due diligence on top three sites to determine viability Q4 2018 • Develop recommendations and prepare proposal to Rocky Mountain Power Q1-Q4 2019 • Collaborate with Rocky Mountain Power on proposal and best approach for implementation 2020 • Begin project implementation • Solicit subscribers
Metrics
• kW solar capacity installed • Number of subscribers

Implementation Target Summary

The Community Planning Team established strategy targets to achieve over the 2-year implementation period that are detailed in the previous section. Using a bottom up process, the targets were quantified and aggregated to measure potential electricity savings, estimated project counts, and equivalent estimated GHG emission reductions that could result from successfully implementing the identified efforts and actions. Reaching this plan's strategy targets sets the Moab community on the path toward achieving its broader community energy and climate goals.

By the end of 2019, the Moab community aims to complete 149 new energy efficiency projects (112 **wattsmart** Residential; 37 **wattsmart** Business) while maintaining average historic project counts in the community (see Figure 23). In equivalent electricity savings, the community could reduce its energy use an estimated 3.21 GWh over the implementation period. Nearly half of those savings (1.53 GWh) would be new electricity savings from the project targets proposed in this plan (see Figure 24). GHG emissions reductions from these efficiency project targets – new energy efficiency projects as well as maintaining historic project counts – could total 1,329 metric tons of carbon dioxide equivalent (MTCO₂e) or the equivalent of removing 283 vehicles from the road. Participating households could see average estimated savings of 1,290 kWh or \$140 annually off their electricity bills. Similarly, participating businesses could see average estimated savings of 29,060 kWh or \$2,615 on their annual electricity bills.

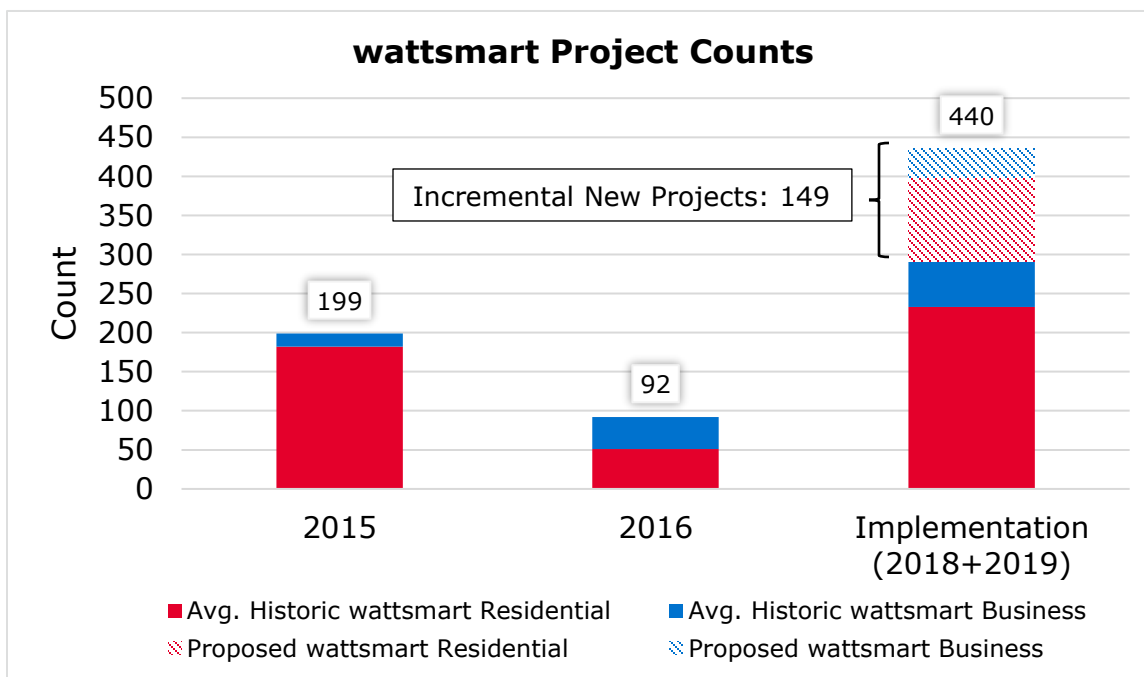


Figure 23. **wattsmart** Proposed Project Counts

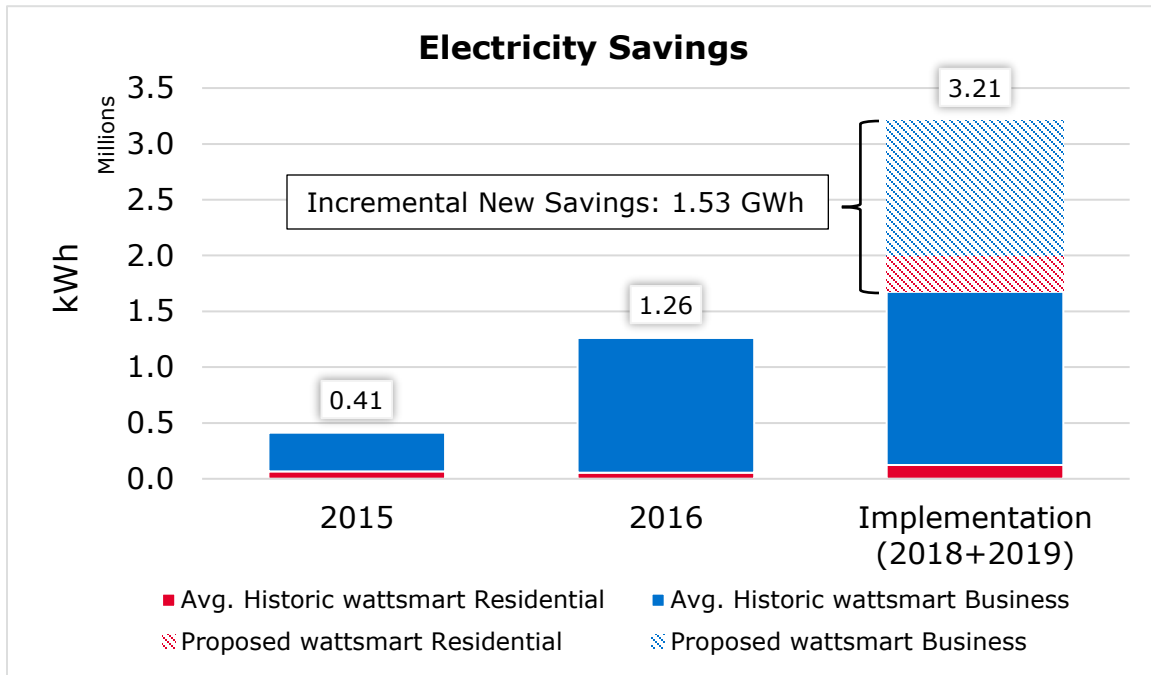


Figure 24. Estimated Electricity Savings

In addition, Moab is looking to encourage increased participation in existing renewable energy subscription programs, such as Blue Sky, in parallel with promoting greater installation rates of rooftop solar. By the end of 2019, the community aims to encourage 489 new residents and/or businesses to be subscribed in Blue Sky while maintaining the historic average of 748 existing subscribers in the community. New, incremental electricity subscribed is estimated to be 2.97 GWh and total electricity subscribed in the community is estimated to be 9.65 GWh by the end of 2019. This is an equivalent estimated emission reduction of 3,996 MTCO₂e – similar to removing 850 vehicles from the road.

The Moab community further aims to encourage 5 new residential and 2 new commercial rooftop solar systems totaling a capacity of at least 60 KW. Electricity generated through these new installations is conservatively estimated to be 147,168 kWh. Total net metering is estimated to generate 2.36 GWh and reduce community-wide emissions 976 MTCO₂e – similar to removing 208 vehicles from the road.

Total estimated GHG emission savings by the end of 2019 as a result of Moab's implementation efforts is 6,301 MTCO₂e, or 3,150 MTCO₂e annually, as shown in Figure 25. As an illustration, the equivalent number of vehicles removed from the road as a result of successful activities related to this plan translated from equivalent GHG emissions reduction is summarized in Table 3.

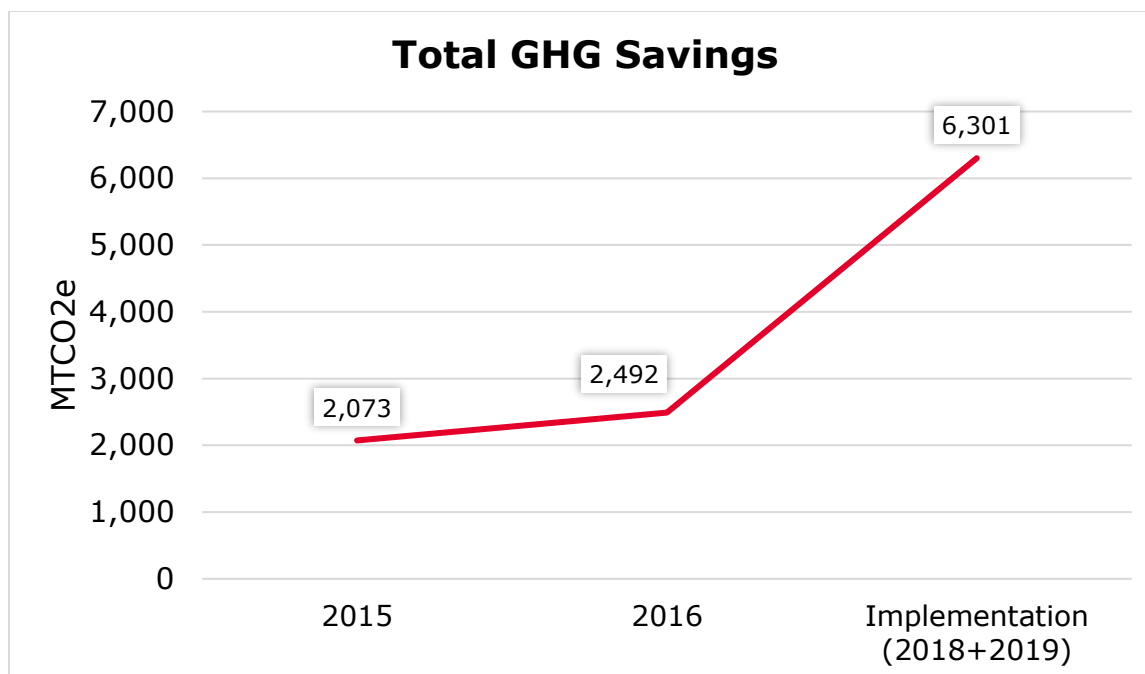


Figure 25. GHG Emission Reduction Estimates

Table 3. GHG Emissions Equivalent Vehicles off the Road

Total Number of Vehicles off the Road	
Blue Sky	850
Net Metering	208
wattsmart Residential	40
wattsmart Business	244
Total	1,342

Implementation Approach and Tracking

This plan is just the first step in a series of activities that will be executed over the next years and beyond. Without systematic execution, there is no real progress. To that end, each strategy identified and framed in this plan by the Community Planning Team includes a leader and team members that will build out the details and timelines and follow through with increased engagement and activity. These leaders and teams will necessarily adjust as they proceed to accommodate new information and resources, unforeseen challenges, and lessons learned along the way.

As the Community Energy Plan is implemented, it is imperative to measure and monitor progress across strategies toward the targets and aspirational community energy goals, particularly as compared to the baseline. This step will involve monitoring and tracking achievements made in implementing the strategies while quantifying their impacts to measure success over time and to inform future actions. This iterative implementation process is illustrated in Figure 26. This implementation cycle necessarily includes regular and step-wise activities for accommodating lessons learned and continuing to make progress beyond initial activities, as shown in Figure 27.



Figure 26. Iterative Implementation Cycle

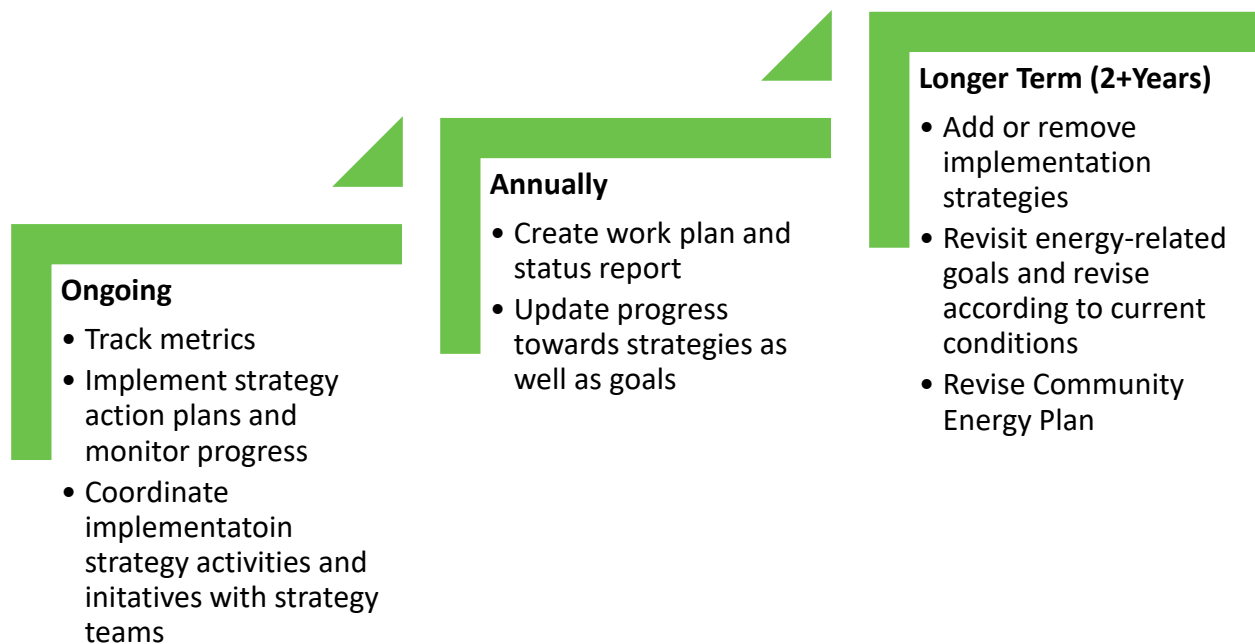


Figure 27. Step-Wise Process

Roles and Responsibilities

To support the success of the Community Energy Plan as well as build a comprehensive sustainability program, the **City Sustainability Director** will lead implementation and on-going progress. The Sustainability Director will serve as the central coordinator of the plan's strategies across focus areas and will lead metric-tracking activities. The Sustainability Director also will coordinate among and across City and County departments, convene Community Action Team meetings, convene quarterly strategy leader meetings, oversee the plan's monitoring and reporting activities, and initiate future Community Energy Plan or broader sustainability program amendments and updates in relation to the plan.

The Sustainability Director will work directly with Rocky Mountain Power to coordinate information and track the metrics and targets across strategies. Rocky Mountain Power will provide the City's annual electricity consumption by sector (i.e., residential and non-residential) in addition to DSM and renewable energy program participation by sector annually, or as otherwise requested by the Sustainability Director.

To support Moab's Global Covenant of Mayors pledge, the City Sustainability Director also is tasked with the following, as they relate to the monitoring and progress of this Community Energy Plan:

- Energy Star: Building Performance Data (City buildings)
- Community-wide GHG emissions: energy use, energy sources (electricity)
- City-building/facility GHG emissions: energy use, energy sources (electricity)
- Green to Gold pre-assessment data, assessment reports, GHG emissions
- Dark sky-compliant lighting

Strategy Leaders are responsible for implementing the steps outlined in the respective strategy work plans. On a quarterly basis, the team will review and evaluate progress made in implementing the strategy work plans, including a status check, challenges/barriers, and other notable points of discussion and coordination.

Members of the **Community Action Team** will support the Sustainability Director in implementing the Community Energy Plan. The team will meet on a quarterly basis to review the strategies and align on implementation efforts of the strategy action plans. To capture and communicate the spectrum of efforts and achievements, the team will prepare an annual status report or snapshot to summarize the status of each focus area and associated strategy. Following the status report each year, the list of strategies will be updated to remove outdated items and refine details related to timing and responsibilities. The City has myriad avenues to communicate both internally and externally about its community energy efforts, and the status report will be shared with the broader community in these ways.

Rocky Mountain Power will serve as a resource and partner and will bring all available energy efficiency and renewable program offerings to Moab in coordination with the Sustainability Director. Rocky Mountain Power is committed to transitioning to a sustainable future and a partnership with Moab can help both parties achieve their goals. This partnership will include energy efficiency expertise and funding through **wattsmart** programs, accessibility and encouragement for greater use of renewable programs through Blue Sky and Subscriber Solar, and willingness to evaluate feasibility of building new solar resources based on customer willingness to participate. Rocky Mountain Power will provide program participation numbers as needed, although individual participation information cannot be shared. In partnership with the Sustainability Director, periodic reports can be shared with the City Council, Mayor, Grand County Council, and/or members of the Community Action Team.

The Vision, Alignment, and Execution model, in Figure 28, provides a visual structure for roles and guidance on how to lead implementation in the Moab community.



Figure 28. Overview of Implementation Leadership Model

Plan Amendments and Updates

The Community Energy Plan provides a framework for community energy reduction through 2020. It is likely that amendments and updates to the plan will be necessary. Similarly, the plan will need to be updated as strategies are successfully implemented and new technologies, opportunities, partnership, and community priorities shift. As a part of a broader sustainability program, the Community Energy Plan should align with the City's comprehensive sustainability efforts and organizational processes.

Appendix 1. Glossary of Terms

Community Energy Plan: A written document that outlines the collective energy vision, goals, and strategies for achieving those goals.

Community Energy Profile: A summary of your community's energy consumption, participation in DSM programs, and use of renewable energy.

Community Planning Team: Community stakeholder group comprised of residents, businesses, organizations, and utility and government representatives.

Customer: A unique identifier for the location of electricity service.

Demand Side Management (DSM): Modification of consumer demand for energy through various methods, including education and financial incentives. DSM aims to encourage consumers to decrease energy consumption, especially during peak hours or to shift time of energy use to off-peak periods, such as nighttime and weekend.

Energy Baseline: Historical data (usually a full calendar year) of a community's energy consumption, including electricity, renewable energy, and other sources of power.

Energy Vision: An expression of the community's shared energy intention.

Focus Area: A category the community selects to target for action (e.g., residential energy efficiency, economic development).

Goals: The results toward which efforts and actions are directed. There can be a number of objectives and goals outlined in order to successfully implement a plan.

Greenhouse gas (GHG): Gas in the atmosphere that absorbs and emits radiant energy within the thermal infrared range (primary GHGs include water vapor, carbon dioxide, methane, nitrous oxide, and ozone). GHG emissions, or any of the atmospheric gases that contribute to the greenhouse effect by absorbing infrared radiation produced by solar warming of the Earth's surface, are associated with affecting climate change.

HOA: Homeowners' association.

HVAC: Heating, ventilation, and air conditioning.

LED: Light-emitting diode.

LEED: Leadership in Energy and Environmental Design is a green building rating system used globally providing a framework to create healthy, highly efficient, and cost-saving green buildings promoting sustainability achievement.

kW: Kilowatt (1,000 watts); a unit of electric power.

kWh (kilowatt-hour): A unit of electric consumption.

MTCO₂e: Metric tons of carbon dioxide equivalent (MTCO₂e); measure used to compare the emissions from different GHGs based on their global warming potential (GWP). The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by its associated GWP.

MW: Megawatt (1 million watts); a unit of electric power.

Solar Garden: Shared solar array with grid-connected subscribers who receive bill credits for their subscriptions.

Solar PV: Solar photovoltaic; solar cells/panels that convert sunlight into electricity (convert light, or photons, into electricity, or voltage).

Subscription: An agreement to purchase a certain amount of something in regular intervals.

Appendix 2. Blue Sky Renewable Energy Funded Projects

As a result of local participation in Blue Sky, the following projects have been awarded to Moab:

Year Selected	Project	Tech.	Status	Award Amount	Size (KW)
2006	City of Moab Arts and Recreation Center	Solar	Complete	\$50,000	5.37
2006	Moab Recreation and Aquatic Center	Solar	Complete	\$50,000	5.17
2007	Moab Public Radio - KZMU	Solar	Complete	\$60,000	12.00
2009	Grand County Library	Solar	Complete	\$50,000	12.00
2011	City of Moab Animal Shelter	Solar	Complete	\$41,400	11.65
2013	Grand County High School	Biomass	Complete	\$125,000	60.00
2015	Moab City Center Expansion	Solar	Complete	\$60,000	25.00
			Total	\$436,400	131.19

Appendix 3. List of Communication Channels and Contractor Resources

Communication Channels
Sustainability Corner
Moab Sun News
Moab Times-Independent
Moab Ad-Vertiser
Tip of the Times
Nextdoor
KZMU Radio Station
KCYN Radio Station
Moab classifieds
League of Women Voters
Moonflower newsletter

Note that this list of contractors is not an inclusive list and none of these contractors are recommended by the City of Moab or Rocky Mountain Power above others, either on the list or otherwise.

Contractor Type	Company Name	Contact	Phone	Email/ Address
Local Contractors/Contacts				
Designer/Developer	Moab Springs Ranch	McKay Edwards	(435) 222-2091	mckayedwards@quail.com
Designer/Developer	Bynum	Shik Han	(303) 558-1119	shikco@gmail.com
Electrical	Grand River Electrical Inc.	Brian Murray	(435) 259-8113	
Electrical	Hillside Electrical	Dennis Mogensen	(435) 259-7859	hillsideelectric@yahoo.com
Electrical	Lindquist Electrical	Kent Lindquist	(435) 259-5638	EDKLINDQUIST@yahoo.com
Energy Auditors	Ponderosa Energy Consulting LLC	Ben Oberhand & Barry Ellison	(818) 437-9538	ben@ponderosanrg.com
Plumbing	JBs	Jake Barlow	(435) 220-0076	
Retailer (discounted LED bulbs)	Walker: True Value	Lori	(435) 259-8258	<u>260 S Main St, Moab, UT 84532</u>
LED Distribution	CLEAResult	David Hatch	(503) 961-6155	david.hatch@clearresult.com
Retailer (discounted LED bulbs)	Ace Hardware	Terry	(435) 259-5165	<u>237 N 100 W, Moab, UT 84532</u>
Solar Photovoltaic	Andrew Austin	Andrew Austin	(435) 260-2949	austinsolarmoab@gmail.com
Solar Photovoltaic	Stratra Solar	John Knight	(503) 860-8903	jknight@stratasolar.com
Solar Photovoltaic	Correlate	Max Dworkin	(916) 337-6207	Max@correlateinc.com
Solar Photovoltaic	Correlate	Todd Michaels	(916) 337-6207	todd@correlateinc.com
Senior Planner	Planning Dept.	Jeff Reinhart	(435) 259-5129	jreinhardt@moabcity.org
State				
Energy Auditors	Codale	Rob Smith	(435) 636-2900	robs@codale.com
Solar Photovoltaic	Auric Solar	Dakota Brown	(801) 686-2783	dakota.brown@auricsolar.com
Solar Photovoltaic	Intermountain Wind and Solar	Peggy Loomis	(801) 295-5255	peggy@imwindandsolar.com
Solar Photovoltaic	Solar Installs	Vaughan Greening		Permitting@clearsolar.us
Solar Photovoltaic	Superior Energy Systems	Robert Soldat	(435) 259-7638	rsoldat@citolink.net
Solar Photovoltaic	Synergy Power	Melroy Maki	(801) 874-9386	coulton@synergypowerpv.com