Energy Supply

Greenhouse gas emissions associated with our energy supply primarily stem from the use of electricity and natural gas in residential and commercial buildings. Energy supply is embedded within and accounted for in the building energy use GHG inventory sectors and analysis. Energy supply is separated into its own sector with prioritized actions, as changes in electricity production and sources of energy can significantly impact the reduction potential of actions in other GHG sectors. Thus, focusing on supply-side planning will bring about drastic reductions independent of recommended actions for businesses and residents.

Electricity and natural gas use accounts for over 50% of San Miguel and Ouray County's total GHG emissions. The carbon intensity of this sector directly relates to the fuel associated with the supply of these utilities from SMPA and BHE. Natural gas has its own emissions factor associated with its use as a direct energy source for heating, hot water, cooking, and more. Because we are unable to influence the production or emissions factor associated with natural gas, recommendations in this section focus on transitioning electricity supply to renewable sources. The mix of these sources of electricity directly impact the emissions associated with electricity use, with fossil fuel resources having a significantly greater carbon intensity than renewable energy sources.

Energy Supply

Fortunately, SMPA has committed to 80% renewable production by 2030. Figure 9 (pg. 27) shows the trend toward increasing renewable energy sources and a decrease of fossil fuel sources within the electricity supplied through SMPA from Tri-State. These changes, along with efficiency improvements and the viability of community energy production, make achieving drastic GHG emissions reductions in the coming decade a realistic possibility. The state of Colorado plans for an 80% reduction of greenhouse gas emissions associated with electricity production and a 37% reduction for emissions associated with natural gas. Our region is well positioned to achieve these goals by contributing to statewide GHG reduction while providing savings for our residents and businesses through a mix of rooftop and community solar, and larger regional renewable generation.

SMPA's contract with TriState includes a limit on local energy generation and distribution within SMPA territory. While this limit was recently expanded to allow for additional community solar farm capacity, it still controls overall production capacity allowable. According to SMPA's contract with Tri-State:

- The Total SMPA system-owned or controlled generation shall not exceed 5% of that SMPA's annual energy requirements in any calendar year, and the total installed generation nameplate capacity shall not exceed 15% of that SMPA's annual peak demand in any calendar year. Generation projects that are eligible under this Policy include renewable or distributed generation under the ownership or control of SMPA.
- Tri-State has instituted a new Policy 119 for community solar generation projects. A community solar generation project (CSG Project) is defined as an SMPA owned or controlled (e.g., through a power purchase agreement) solar photovoltaic generation project that is intended to be marketed by SMPA under subscription arrangements to SMPA's retail customers. Eligible CSG Projects under this policy are limited to an aggregated total of the lesser of (a) 4,600,000 kilowatt-hours or (b) CSG Projects sized to serve no more than two percent (2%) of the 2018 Tri-State energy sales (kWh) to SMPA.

It is important to note, that net-metered renewable energy systems below 10 kW, such as a typical residential roof-mounted PV solar array are not limited by this cap on larger scale power production within SMPA's region. Therefore, increasing the installation of smaller net-metered systems has the potential to significantly reduce our electricity-associated GHGs without counting towards the local generation limits.

Energy Supply Trends & Accomplishments

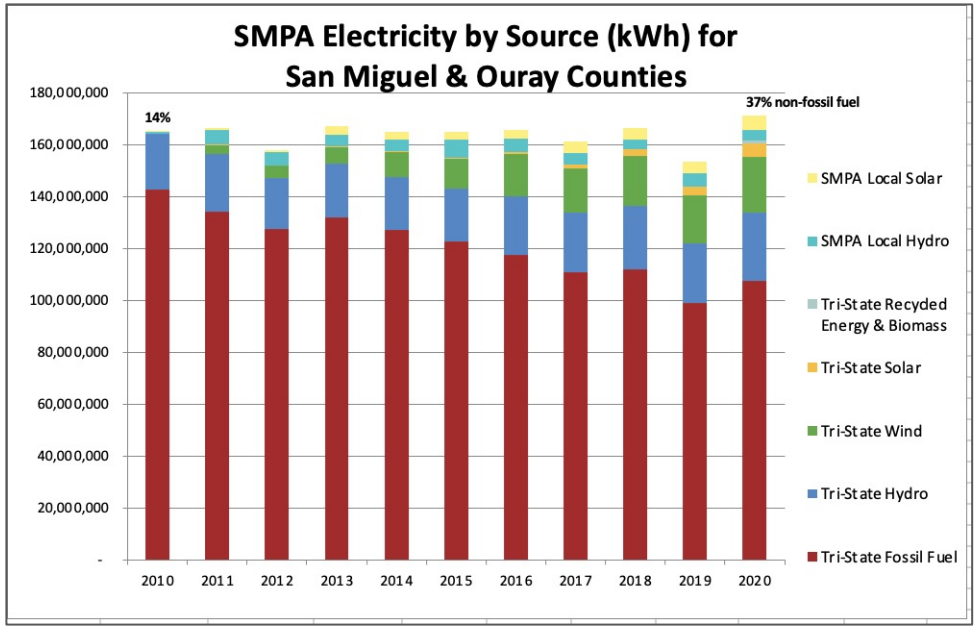

Figure 9

The chart above shows our electricity fuel mix based on production and transmission data provided by Tri-State and local renewable energy production within SMPA territory. Tri-State's fuel mixture was calculated based on annual member reports for 2010, 2016, and 2020. The trend for Tri-State's fuel mix between 2016 and 2020 was calculated linearly.

SMPA provides electricity to homes and businesses in our region. SMPA's power supplier, Tri-State, provides SMPA with 37% of its energy from renewable resources including wind, solar, and hydropower. The remaining 63% of Tri-State's energy currently comes from fossil fuels. This mixture defines our electricity emissions factor (mtCO2e/kWh).

- Increase in non-fossil fuel electricity production from 13% to 37% as shown in Figure 9 at left, as a result of local public pressure.
- SMPA territory has successfully achieved 5% local renewable energy power production, as a result of SMPA, government, and private projects built and operating across the area.
- Due to pressure by progressive cooperatives such as SMPA, this 5% capacity limit set by SMPA's contract with Tri-State has been expanded to allow for an additional 2% of generation from community solar arrays.
- SMPA's first community solar array in Paradox Valley was the 2nd largest of its kind when constructed and was completely subscribed within three years.
- SMPA's 2nd array is an income-qualified solar array located outside of Norwood has recently become 100% subscribed.
- SMPA and Tri-State have both adopted a progressive renewable energy production goal of 80% renewable production by 2030.
- SMPA's Green Blocks program has changed to Totally Green, as a result of community-level input. The program is now easy to join to offset 100% of a members' monthly electricity use.
- Net metered renewable electricity production has increased by over five times since 2010.
- Mountain Village provides additional financial incentives for net metered solar PV systems.

Energy Supply Recommendations

OBJECTIVE 1: Increase percentage of electricity provided by renewable energy sources.

ACTION	GHG REDUCTION POTENTIAL	CO-BENEFITS	TIMELINE	PARTNERS
Establish a local renewable energy generation target and plan to achieve it.	●●●●	= $ ● + ●	3-10	SMPA
Identify and eliminate barriers to local renewable energy production.	●●●○	= $ ○ + ○	3	SMPA, WCU
Advance regional grid flexibility to enable a modernized renewable electricity supply.	●●●●	= $ ○ + ●	5-10	SMPA
Install renewable energy capacity on government buildings.	●●●○	= $ ○ + ●	1-5	SMPA
Incentivize and promote net-metered solar systems on residential and commercial rooftop or pole mount locations.	●●●●	= $ ○ + ●	Ongoing	SMPA, Solar Installers, HOAs
Encourage community participation in SMPA Totally Green program for electricity not covered by local renewable energy production.	●●●●	= $ ● + ○	Ongoing	SMPA, WPL, ROCC, Rotary Club Telluride Inst., HOAs
Support SMPA in increasing community solar arrays in the region.	○○○○	= $ ○ + ●	1-5	SMPA, WCU, Americorps VISTA
Expand free and low-cost solar programs for low-income households.	●●○○	= $ ○ + ●	1-5	SMPA, WCU, Americorps VISTA,
Work with renewable energy installation businesses to promote residential energy incentives and financing opportunities.	●●○○	= $ ○ + ●	1-5	SMPA, Solar Installers

KEY

GHG Potential 1-4 | = Promotes Equity | $ Economic Sustainability | ● Environmental Quality | + Public Health & Safety | Builds Resilience