

**United States House of Representatives  
Select Committee on the Climate Crisis**

**Hearing on August 1, 2019  
“Colorado’s Roadmap for Clean Energy Action:  
Lessons from State and Local Leaders”**

**Questions for the Record**

**The Honorable Suzanne Jones  
Mayor of Boulder, CO**

**The Honorable Kathy Castor**

- 1. In your testimony, you mentioned that the City of Boulder and Boulder County have jointly launched initiatives focused on soil-based carbon sequestration. What Federal policies would help local governments carry out these types of initiatives?**

As mentioned in the Mayor’s testimony, Boulder and Boulder County have launched a collaborative effort around soil sequestration. This partnership is aimed at experimenting with emerging strategies, such as innovative tillage, enhanced soil health practices and other regenerative agricultural techniques, to accelerate carbon drawdown and enhance local ecosystem productivity. When fully implemented, we believe these approaches could conservatively sequester 10% to 20% of local emissions. They also provide significant agricultural and ecosystem benefits such as increased resistance to drought and extreme weather events.

The city recommends the following federal policies to support local initiatives:

- Increase cost share funding to United States Department of Agriculture (USDA)-natural Resources Conservation Service (NRCS) to foster increased adoption of climate smart agricultural practices, e.g., reduced tillage, cover cropping, etc.
- Enhance crop insurance programs offered by USDA-Farm Service Agency (FSA) that create disincentives for cover cropping.
- Increase USDA-Agriculture Research Service (ARS) funding in Colorado toward soil-carbon sequestration research priorities fitted to high plains agroecosystems (irrigation, soil health principles and their economic implications).
- Support research and pilot projects in developing carbon credit marketplace for agriculture
- Increase funding for the NRCS Conservation Innovation Grants Program, which is one of the most important mechanisms to foster multi-party collaboration and innovation around emerging soil health and carbon drawdown strategies.
- Increase funding into National Institute of Farm and Agriculture (NIFA) sustainable agriculture and environmental resource and economic programs.
- Increase funding into Foundation for Food and Agriculture Research (FFAR) programs.

- Increase funding for Agricultural Extension Services.
- Reintroduce the Healthy Fields and Farm Economies Act.
- Amend the 45Q Tax Credit to include biochar and compost producers.
- Ask NRCS to work with ARS and private sector initiatives to standardize soil health protocols, as lack of standardization is causing a confusing set of non-comparable claims.
- Increase funding to USDA for soil health research and knowledge dissemination.
- Significantly increase funding to efforts that support young, veteran and socially disadvantaged farmers to gain access to land ownership and farm establishment support such as the Conservation Reserve Program-Transition Incentive Program (CRP-TIP).

**2. In your testimony, you explained that the City of Boulder’s investments in residential energy efficiency leveraged almost ten times that amount in private investment. What Federal policies would help cities like Boulder continue to leverage private sector investments to reduce carbon emissions?**

**Electrification**

In cities across North America, fossil fuels that provides heating, cooling and hot water in buildings account for a significant portion of greenhouse gas (GHG) emissions—accounting for between 15% and 40% of emissions in a typical U.S. city. According to the Building Electrification Initiative (BEI), reaching “deep decarbonization” goals of 75% or greater reduction in greenhouse gas emissions will require eliminating most of the CO<sub>2</sub> produced by furnaces and water heaters across the country, alongside other measures across the economy.

In the long term, major utility investments and state regulatory action will be needed to fully transition buildings away from fossil fuels. In the short term though, city action can spark the development of new markets and equitable approaches for transitioning to high efficiency electric building systems. This action will deliver immediate GHG and air pollution reductions, while also providing information on best practices and laying the groundwork for more ambitious efforts that will be needed at all levels of government.

Given the scale, voluntary market development alone will probably not be sufficient to achieve these goals; it will require robust local, state, regional and federal policy regimes to transition away from fossil fuel-based building systems. Supporting market development activities will also be necessary to improve existing heat pump products, train and qualify contractors who can install them, and ensure there are customers who want heat pumps and understand their value.

In its 2018 report, *The Economics of Electrifying Buildings*<sup>1</sup> the Rocky Mountain Institute suggests that regulators, policymakers and utilities will need to make adjustments to energy efficiency programs and targets in order to accommodate beneficial electrification. Historically, most energy efficiency programs have focused on reducing electric energy consumption (in kWh) and natural gas energy consumption (in therms). Unfortunately, this approach risks providing a disincentive to beneficial fuel switching, either for buildings or transportation, if a utility will be penalized for adding kWh of electric consumption to the system.

The 2016 Electricity Journal article “Environmentally Beneficial Electrification: The Dawn of ‘Emissions Efficiency’”<sup>2</sup> suggests that energy efficiency targets should either be measured on a

total energy basis— combining electricity, natural gas and other fuels— or on the basis of total emissions associated with the energy consumption. Otherwise, successful electrification could penalize utilities for not reducing electricity demand, even when it provides cost and carbon benefits. Additionally, policies that prohibit utilities from promoting fuel switching should be reevaluated to consider the benefits electrification could provide in meeting policy goals, including carbon reduction.

The Rocky Mountain Institute report further identifies the importance of removing “barriers to aggregated demand-side resource participation in wholesale market products, including energy, capacity and ancillary services.” These barriers include prohibitions on aggregated demand-side resource participation in some products and large minimum resource size requirements for individual loads or aggregations. The Federal Energy Regulatory Commission (FERC) is currently considering action to remove such barriers by requiring markets it regulates to allow aggregated resources to participate alongside traditional resources.

Finally, the Department of Energy and Environmental Protection Agency programs compare the performance of appliances to other models that use the same type of fuel. This approach diminishes the economic, environmental and grid benefits of switching from a fossil-fuel appliance to an electric one. States that follow these federal standards should be aware that the same-fuel-only comparison can reduce the ability to electrify. One solution is to update those standards to compare appliances across all fuel types.

### **Federal Preemptions**

Federal policy currently prevents local jurisdictions from requiring installed appliances, such as heating and cooling equipment, to perform better than federal baselines. This requires jurisdictions to invest significantly in rebate and other incentive programs to drive more efficient choices by residents and businesses. Jurisdictions must be able to mandate better appliance efficiency through code, which would allow limited rebate dollars to be freed up to further leverage investment in deeper savings opportunities. This would also prevent 15 to 20-year stranded investments by residents and businesses in lower-performing equipment.

### **Financing**

Efficiency and local energy generation are critical for reducing greenhouse gas emissions and for enabling a successful transition to a post-carbon future. However, particularly in states like Colorado where current energy costs are among the lowest in the country, the payback for efficiency and renewable investments is often too long (5 or more years) to motivate residents and businesses to make substantial investments. This ultimately has the impact of tying up cash reserves or creating longer-term personal financial obligations. Options that allow efficiency and renewable improvements to be made with lower financial obligation and that allows the obligation to transfer with the property at time of sale would greatly accelerate efficiency and renewable adoption. Examples of mechanisms include property assessed clean energy (PACE) where low-to-no interest loans can be spread over 20 years of property taxes. Similarly, tariff-based financing, where utilities front the cost of the investment and recover that investment through utility rates would help drive adoption.

**3. You mentioned that the Colorado Communities for Climate Action supports expanding the focus of the Natural Resources Conservation Service to include regional-scale land management to improve resilience to climate impacts. Could you please describe this recommendation in more detail?**

*PLEASE NOTE: The following recommendations originate from the City of Boulder rather than the Colorado Communities for Climate Action*

Recent reports from the IPCC and other sources confirm that significant impacts from climate change are now inescapable in the next 10 to 30 years. According to a recent Union of Concerns Scientists analysis, these changes will result in dramatic impacts across the US<sup>3</sup> including:

- The average number of days per year with a heat index above 100°F will more than double, while the number of days per year above 105°F will quadruple
- More than one-third of the area of the United States will experience heat conditions once per year, on average, that are so extreme they exceed the current NWS heat index range (above 137°F)
- Nearly one-third of the nation's 481 urban areas with a population of 50,000 people or more will experience an average of 30 or more days per year with a heat index above 105°F, a rise from just three cities historically (El Centro and Indio, California and Yuma, Arizona).

These findings underscore the critical importance of significantly expanding research and technical assistance for cities to address the way these conditions will be mitigated or aggravated by urban development and urban landscape management.

Less recognized is the interrelationship between urban heat impacts and the management practices in landscapes which surround cities. There is growing evidence that factors like soil moisture levels in areas surrounding cities dramatically impact the incidence and intensity of urban heat extreme events.<sup>4</sup>

Additional funding and pilot project development is needed to explore strategies for utilizing land conservation and management policies to shape climate extreme resilience in both rural and urban communities. The NRCS provides a logical platform for managing resources directed to this purpose. The NRCS platform grew out of the original Soil Conservation Service established in 1935 at the height of the Dust Bowl. It has a history of conducting landscape scale assessment and conservation strategy development to address large scale environmental and social challenges.

In more stable and prosperous times, NRCS's work focuses more on parcel-level technical assistance and incentives; however, in eras of disruptive change, NRCS has been on the forefront of landscape-scale strategy and action. In the 1930s, this included deploying hundreds of thousands of workers implementing soil conservation actions like erosion control or planting windbreaks. In the farm crisis of the 1980s, NRCS was able to launch the Conservation Reserve

Program which created connected networks of conservation areas across broad areas of the Plains states.

Congress should empower and resource the NRCS to explore how it can use both its existing tools and programs and new management systems to develop landscape-scale assessments. These assessment would identify how to enhance the capacity of landscapes to drawdown significant volumes of carbon, increase water holding and infiltration capacities, provide enhanced regional cooling services to metropolitan areas and increase the fertility and productivity of lands that are now significantly degraded due to climate change and past management practices. This would start with a comprehensive soil assessment using standardized soil inventory procedures (see previous recommendations on soil health for more detail). The work identified through these assessments would then form the foundation for exploring Green New Deal-scale reinvestment strategies that could provide employment opportunities for a large-scale workforce.

## References Page

- [1] Rocky Mountain Institute, *The Economics of Electrifying Buildings*, based on data from the U.S. Environmental Protection Agency. <https://rmi.org/insight/the-economics-of-electrifying-buildings/>
  
- [2] Dennis, Keith, Ken Colburn and Jim Lazar, “Environmentally Beneficial Electrification: The Dawn of ‘Emissions Efficiency’,” *The Electricity Journal*, Volume 29, Issue 6, July 2016, Pages 52–58, <https://www.sciencedirect.com/science/article/pii/S1040619016301075>
  
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