

Comments of Leslie Glustrom in Support of HB20-1064
Community Choice Energy Study Bill

On Behalf of Clean Energy Action
Colorado House Energy and Environment Committee
January 23, 2020

Thank you Madam Chairwoman and members of the Committee for this opportunity to testify. I am testifying today on behalf of Clean Energy Action and the Colorado Coalition for a Livable Climate—a coalition of 29 Colorado groups from around the state.

I am speaking in support of HB20-1064, the Community Choice Energy bill. I think support for this bill is a bit of a “no-brainer,” as it is past time for Colorado to consider the potential benefits of adding more choices and competition for Coloradans with respect to their electricity suppliers and costs.

Clean Energy Action empowers citizens to work at the local, state and national levels to build a cleaner, lower-cost and more resilient electric system and to support fossil fuel workers and their communities through the coming energy transition.

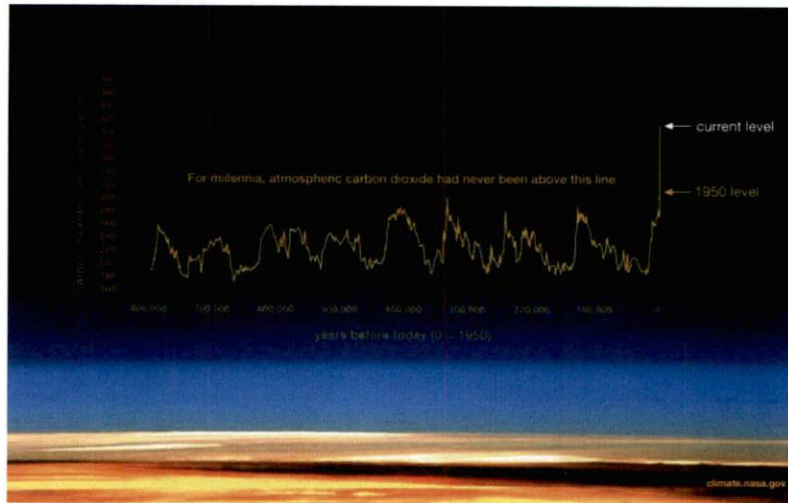
As many of the Committee members know, I am trained as a biochemist, but due to my concern about climate change, I have spent the last 15 years participating at the Colorado Public Utilities Commission and so have significant experience with Colorado’s current “regulated monopoly” system for customers served by Xcel and Black Hills.

I would like to provide the Committee with background data that supports the need for the studies called for in HB20-1064.

The Climate Crisis is Real and Very Serious

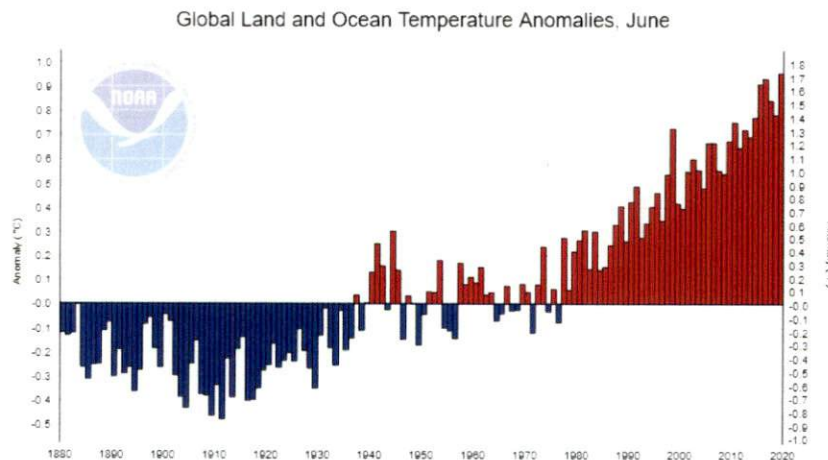
It is now clear to everyone except a small minority that the climate crisis is real and extremely serious. Humans have driven levels of carbon dioxide and other heat-

trapping gases in the atmosphere up at a rate that, as far as we know, is unprecedented in geologic history as shown in the following graph.



https://climate.nasa.gov/climate_resources/24/graphic-the-relentless-rise-of-carbon-dioxide/

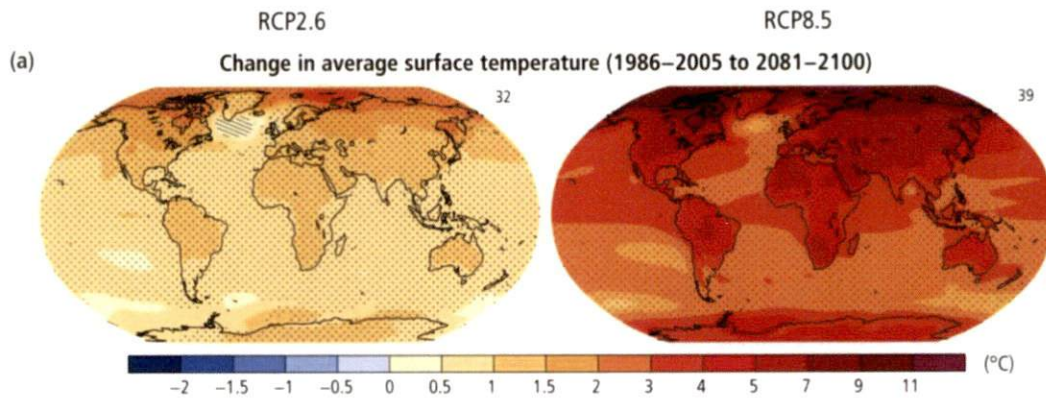
This is not a partisan subject. It is a matter of physics and the basic physics of heat-trapping gases has been understood since the mid-1850s. As a result of the rapidly rising levels of carbon dioxide, fossil methane and other heat-trapping “greenhouse” gases, the planet is warming rapidly as shown below, with each decade warmer than the last.



<https://www.ncdc.noaa.gov/monitoring-content/sotc/global/2019/jun/global-land-ocean-anomalies-201906.png>

Leaving a planet that is increasingly unlivable to future generations is a monumental failure in “good parenting,” and it is now widely understood that we must move as quickly as possible to greatly reduce our emissions of carbon dioxide and other heat-trapping gases to the atmosphere.

Below is a view of the warming that our children and grandchildren will be dealing with. This is why the situation is increasingly referred to as the “climate crisis!”



https://ar5-syr.ipcc.ch/topic_futurechanges.php

Electricity is a Major Source of Greenhouse Gas Emissions

Electricity has been the largest source of heat-trapping gases and is still one of the top two sources according to Colorado’s most recent greenhouse gas inventory.

EXECUTIVE SUMMARY

Exhibit ES 1: Estimated Colorado GHG Emissions by Sector 1990-2030 (MMTCO₂e)

| Emissions by Sector (MMTCO ₂ e) | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 | 2030 |
|---|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Electric Power | 31.425 | 32.659 | 38.823 | 40.291 | 39.535 | 36.283 | 30.997 | 25.545 |
| Transportation | 20.097 | 23.723 | 27.015 | 30.787 | 29.764 | 28.168 | 31.439 | 30.036 |
| Residential, Commercial & Industrial Fuel Use | 15.034 | 17.896 | 20.028 | 24.643 | 26.190 | 25.692 | 24.836 | 26.070 |
| Natural Gas and Oil Systems* | 2.151 | 2.492 | 6.492 | 8.083 | 12.045 | 15.619 | 14.207 | 15.322 |
| Agriculture | 8.627 | 9.313 | 13.416 | 9.582 | 10.069 | 10.660 | 10.377 | 9.060 |
| Coal Mining & Abandoned Mines | 5.152 | 3.814 | 5.494 | 6.810 | 8.137 | 1.851 | 5.963 | 6.604 |
| Industrial Processes | 0.687 | 1.405 | 2.955 | 3.154 | 3.675 | 4.508 | 3.031 | 3.946 |
| Waste Management | 0.976 | 1.129 | 1.538 | 2.366 | 3.583 | 4.186 | 4.678 | 6.067 |
| Grand Total | 84.147 | 92.430 | 115.761 | 125.716 | 132.998 | 126.967 | 125.529 | 122.651 |

* Adjusted projections for 2020 and 2030

From <https://www.colorado.gov/pacific/cdphe/colorado-greenhouse-gas-reports> w direct link being <https://drive.google.com/file/d/1TxyoktxCOLFd6CaUKZzeqskgEIHMjdtq/view>

While Xcel is making progress in adding wind and solar to its system, it is still well over 60% fossil fuel in Colorado, with 2018 data for Xcel in Colorado below. We can and should be moving much faster to use Colorado’s abundant wind and solar resources, and this bill can help with that.

PSCo Overview

COMPANY PROFILES

Electric - Retail

1.5 million customers
29 million MWh

Natural Gas - Retail

1.4 million customers
138 million MMBtu

2018 Financials

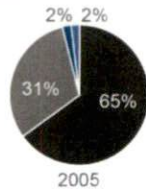
Net Income
Assets
ROE
Equity Ratio

GAAP & Ongoing

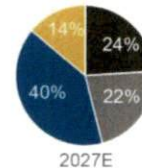
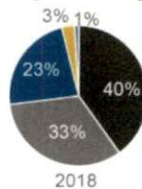
\$552 million
\$17.3 billion
9.10%
54.3%

Credit Ratings (Secured/Unsecured)

Moody's A1 / A3
S&P A / A-
Fitch A+ / A



PSCo System Energy Mix



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<http://investors.xcelenergy.com/Cache/1500126377.PDF?O=PDF&T=&Y=&D=&FID=1500126377&iid=4025308>

Colorado Has Abundant, Very Low-Cost Wind, Solar and Storage Potential

Now for the good news. Colorado has abundant low-cost wind, solar and storage options available. Below is a summary of the bids received by Xcel (Public Service Company of Colorado) in Colorado in March 2018.

PUBLIC VERSION Updated Attachment A

RFP Responses by Technology

| Generation Technology | # of | | Project | Median Bid | |
|---|------------|----------------|------------|---------------|------------------|
| | Bids | Bid MW | | Price or | Pricing |
| | | | MW | Equivalent | Units |
| Combustion Turbine/IC Engines | 29 | 6,365 | 19 | 4,436 | \$ 5.08 \$/kW-mo |
| Combustion Turbine with Battery Storage | 7 | 804 | 3 | 476 | 6.21 \$/kW-mo |
| Gas-Fired Combined Cycles | 3 | 873 | 3 | 873 | █ \$/kW-mo |
| Stand-alone Battery Storage | 28 | 2,144 | 24 | 1,945 | 10.53 \$/kW-mo |
| Compressed Air Energy Storage | 1 | 317 | 1 | 317 | █ \$/kW-mo |
| Wind | 96 | 41,915 | 42 | 16,949 | \$ 19.30 \$/MWh |
| Wind and Solar | 5 | 2,601 | 4 | 2,151 | 19.96 \$/MWh |
| Wind with Battery Storage | 11 | 5,700 | 5 | 2,700 | 20.63 \$/MWh |
| Solar (PV) | 148 | 28,382 | 78 | 14,085 | 30.96 \$/MWh |
| Wind and Solar and Battery Storage | 7 | 4,048 | 7 | 4,048 | 30.41 \$/MWh |
| Solar (PV) with Battery Storage | 79 | 14,980 | 57 | 10,098 | 38.30 \$/MWh |
| IC Engine with Solar | 1 | 5 | 1 | 5 | █ \$/MWh |
| Waste Heat | 2 | 21 | 1 | 11 | █ \$/MWh |
| Biomass | 1 | 9 | 1 | 9 | █ \$/MWh |
| Total | 418 | 108,163 | 246 | 58,101 | |

From: Colorado PUC Docket 16A-0396E, 30 Day Report, March 2018 Update, Attachment A

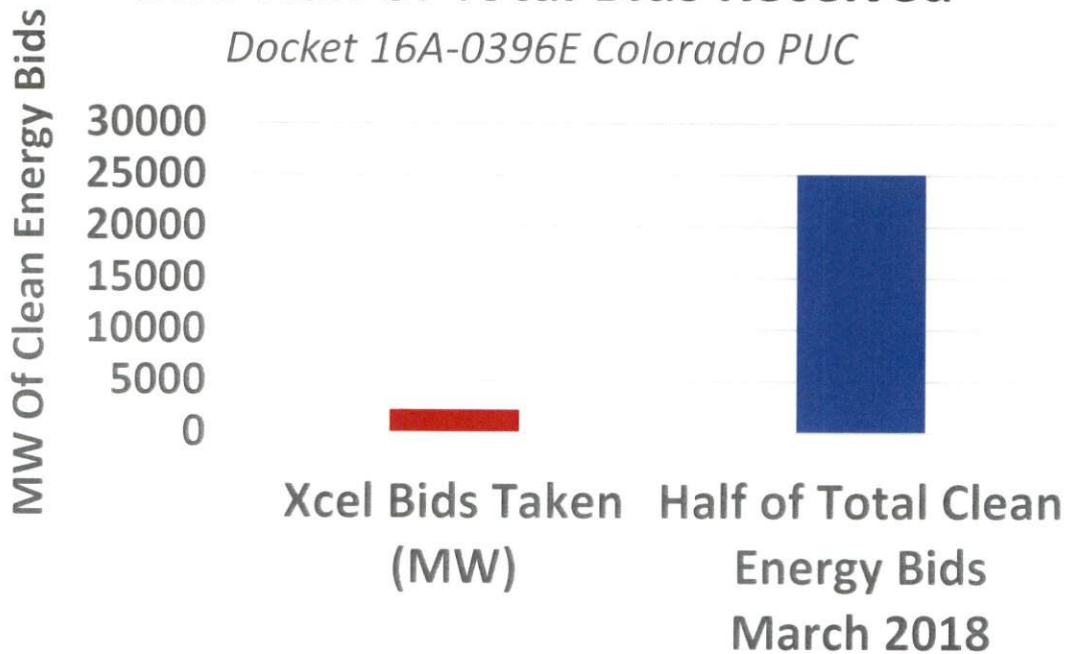
The wind, solar and storage bids under the line in the table above, total over 50,000 MW with median prices averaging below 3 cents/kwh (or \$30/MWh). Xcel took about 2100 MW of these projects but left tens of thousands of low-cost wind and solar projects “on the table.” Adding more choice and competition to Colorado’s electric system can help develop more of these “Colorado grown” projects, bringing jobs, economic multiplier benefits and tax revenues to rural Colorado while lowering the cost of electricity—but this will likely only happen in a cost-effective way if we introduce more choice and competition into Colorado’s electric market.

Community Choice Would Likely Bring More Colorado Wind and Solar to Fruition

Below is a graph comparing the MW of wind, solar and storage bids accepted by Xcel from the 2018 bids compared to half the total (using the arbitrary, and likely erroneous assumption that half the bids received by Xcel were “bad.”)

March 2018 Clean Energy Bids Accepted by Xcel in Colorado v One-Half of Total Bids Received

Docket 16A-0396E Colorado PUC



The large number of bids received by Xcel in March 2018 for wind, solar and storage that are lower cost than their current fossil fuel generation (usually \$30/MWh and above), is an indication that Colorado communities could very likely benefit from, at the very least, studying Community Choice Energy, as proposed by HB20-1064 as a CCE program could accelerate the rate at which we build out Colorado’s abundant, wind, solar and storage resources—while bringing economic benefits to rural Colorado and Colorado electric consumers.

Thank you again for this opportunity to testify.