

# Public Utility Data Liberation (PUDL)

**@ZaneSelvans**  
**Chief Data Wrangler**  
**Catalyst Cooperative**



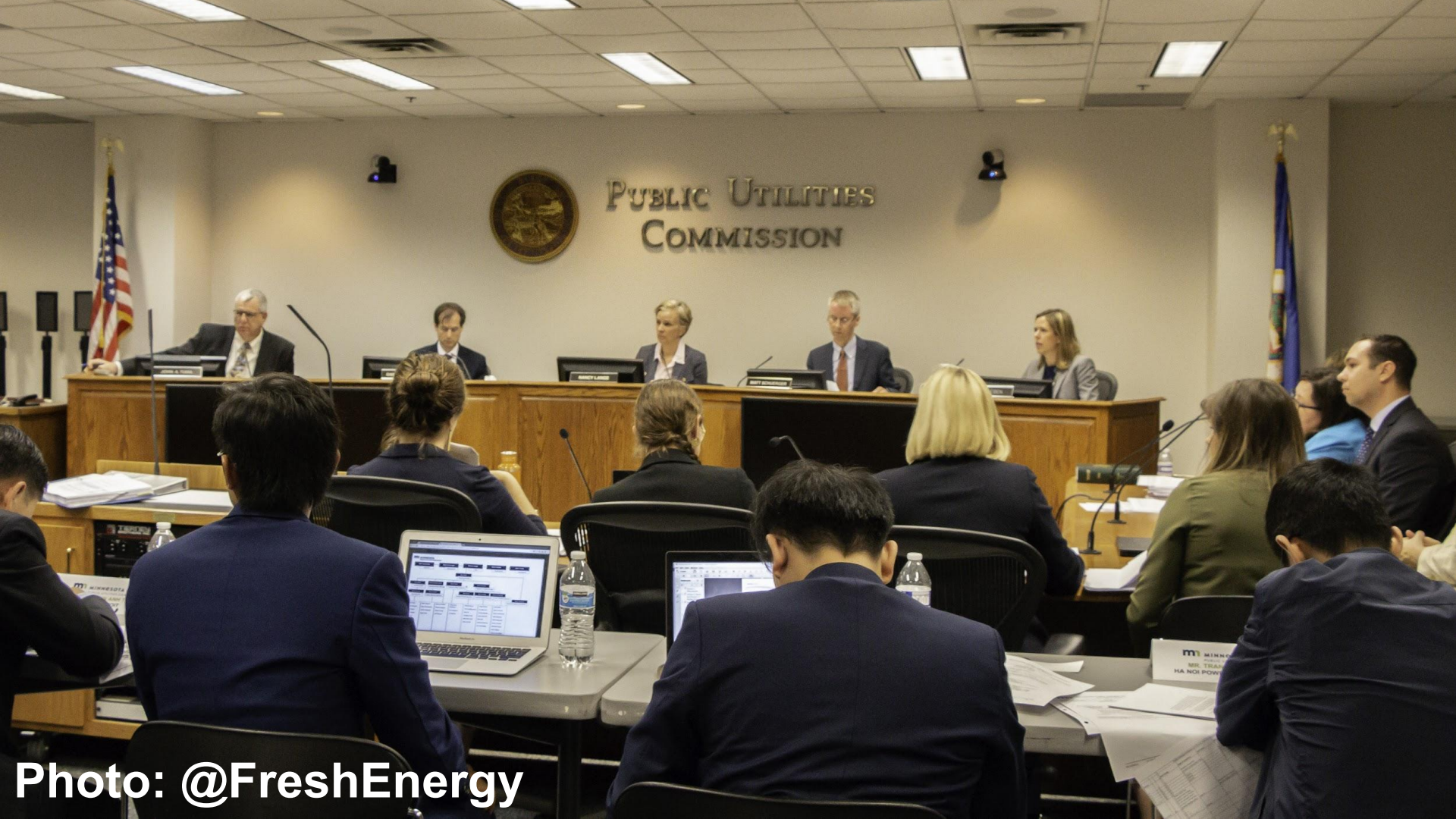
Christina Gosnell @cmgosnell  
President, Catalyst Cooperative





Warming Stripes @ed\_hawkins @ClimateLabBook





PUBLIC UTILITIES  
COMMISSION



MR. [Name]

MR. [Name]

MS. [Name]

MR. [Name]

MS. [Name]



MR. TRAN  
HA NOI POWER

Photo: @FreshEnergy



Unit one of the V.C. Summer Nuclear Station near Jenkinsville, S.C., photographed on Sept. 21, 2016. Photo: Chuck Burton/AP

The Intercept

Facebook icon  
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Comments icon (31)

## SOUTH CAROLINA SPENT \$9 BILLION TO DIG A HOLE IN THE GROUND AND THEN FILL IT BACK IN



Akela Lacy  
February 6 2019, 3:00 a.m.

**THE OBJECTION RAISED** most frequently when it comes to a Green New Deal is its cost. It's preposterous; it's too expensive; we just can't afford it.

But before scoffing at the prospect of the wealthiest nation in the history of the world funding such a project, it's worth taking a look at what one of the country's poorest states was recently able to spend.

South Carolina, in a bid to expand its generation of nuclear power in recent years, dropped \$9 billion on a single project — and has nothing to show for it.

BIZ & IT —

## Regulators suggest \$7.5 billion coal gasifier facility give up, burn natural gas

After years of delays and cost overruns, Southern Company's plant may be a bust.

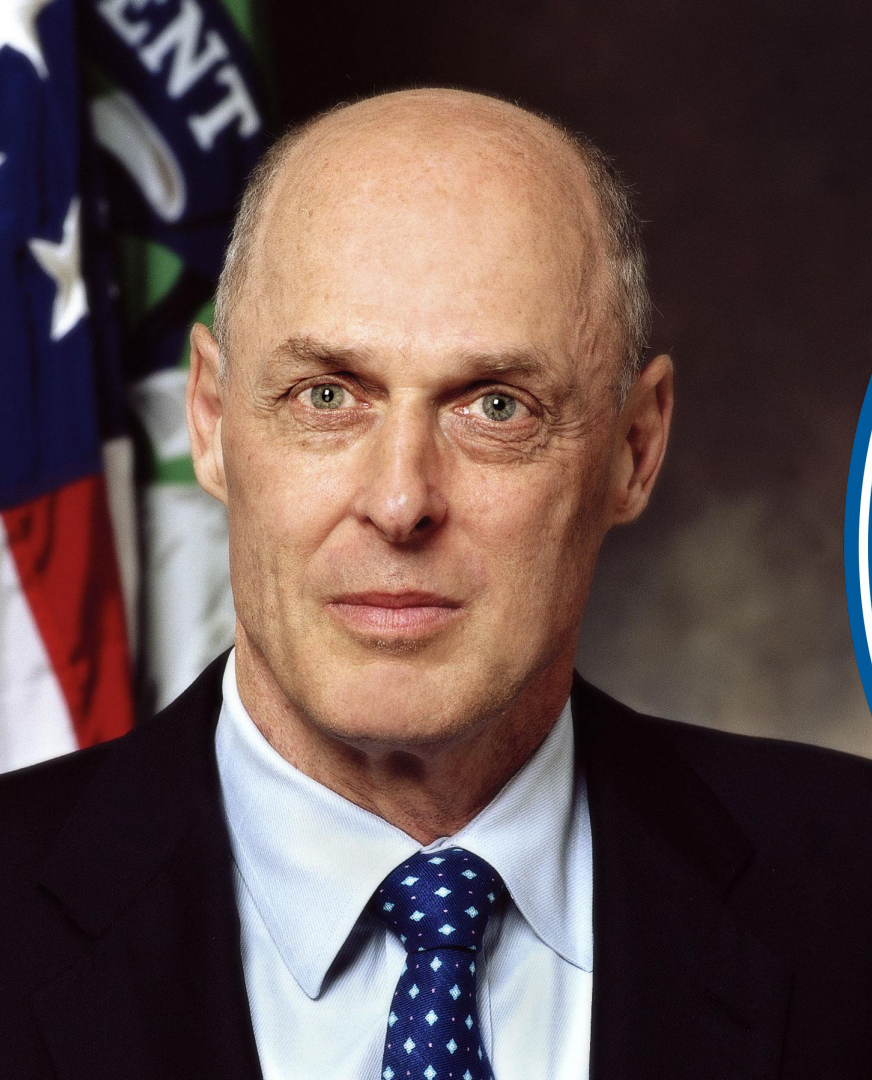
MEGAN GEUSS - 6/26/2017, 1:00 PM

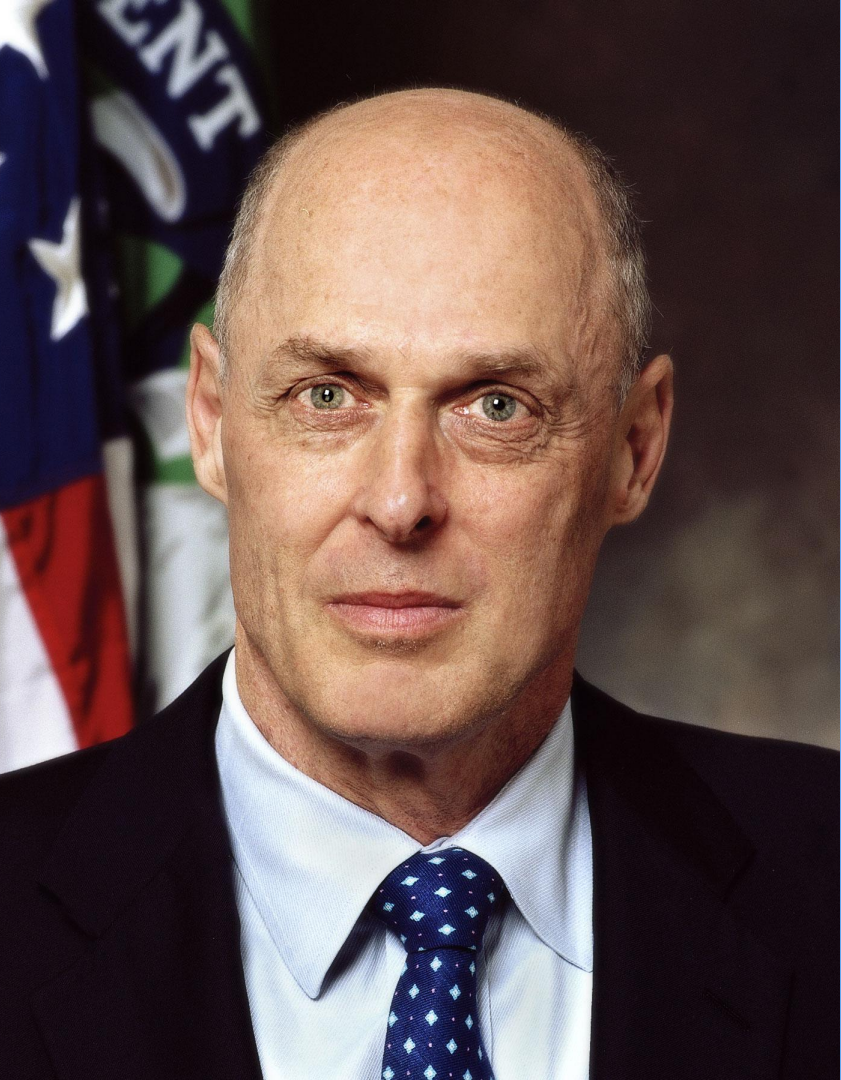


Gary Tramontina/Bloomberg via Getty Images

Enlarge / Cranes stand at the construction site for Southern Co.'s Kemper County power plant near Meridian, Miss., on Tuesday, Feb. 25, 2014.





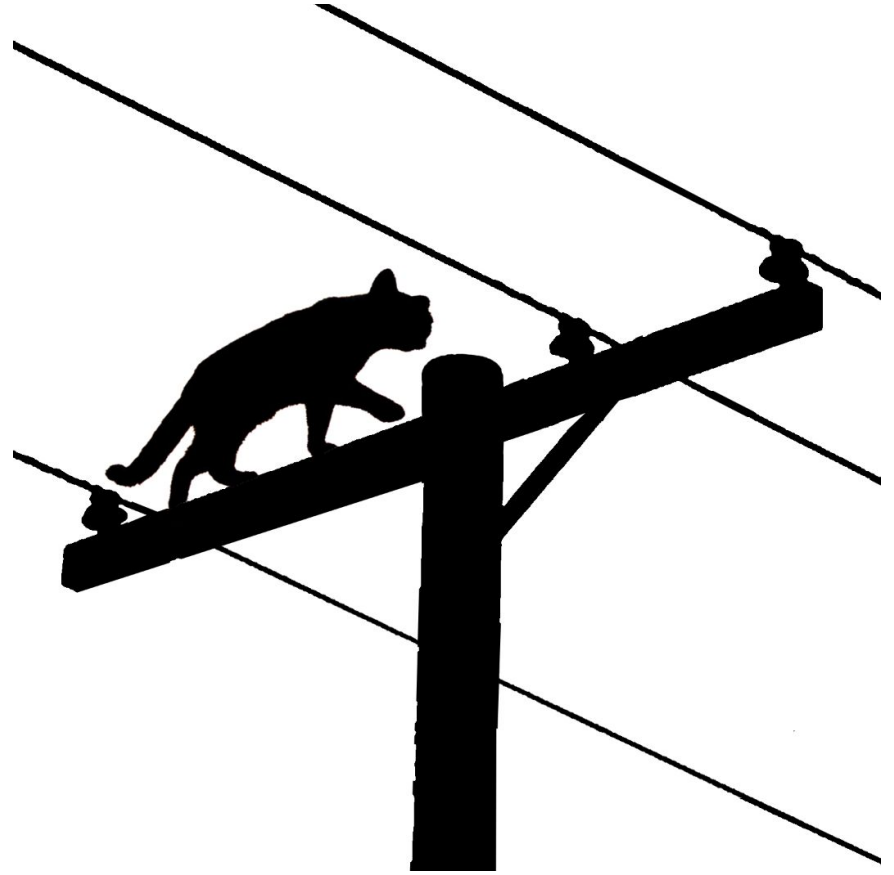


# Goldman Sachs





Clean Energy Action  
<http://cleanenergyaction.org>



Catalyst Cooperative  
<https://catalyst.coop>



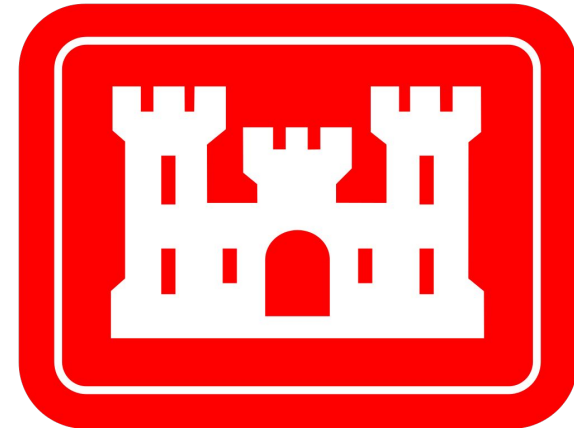
**PHMSA**



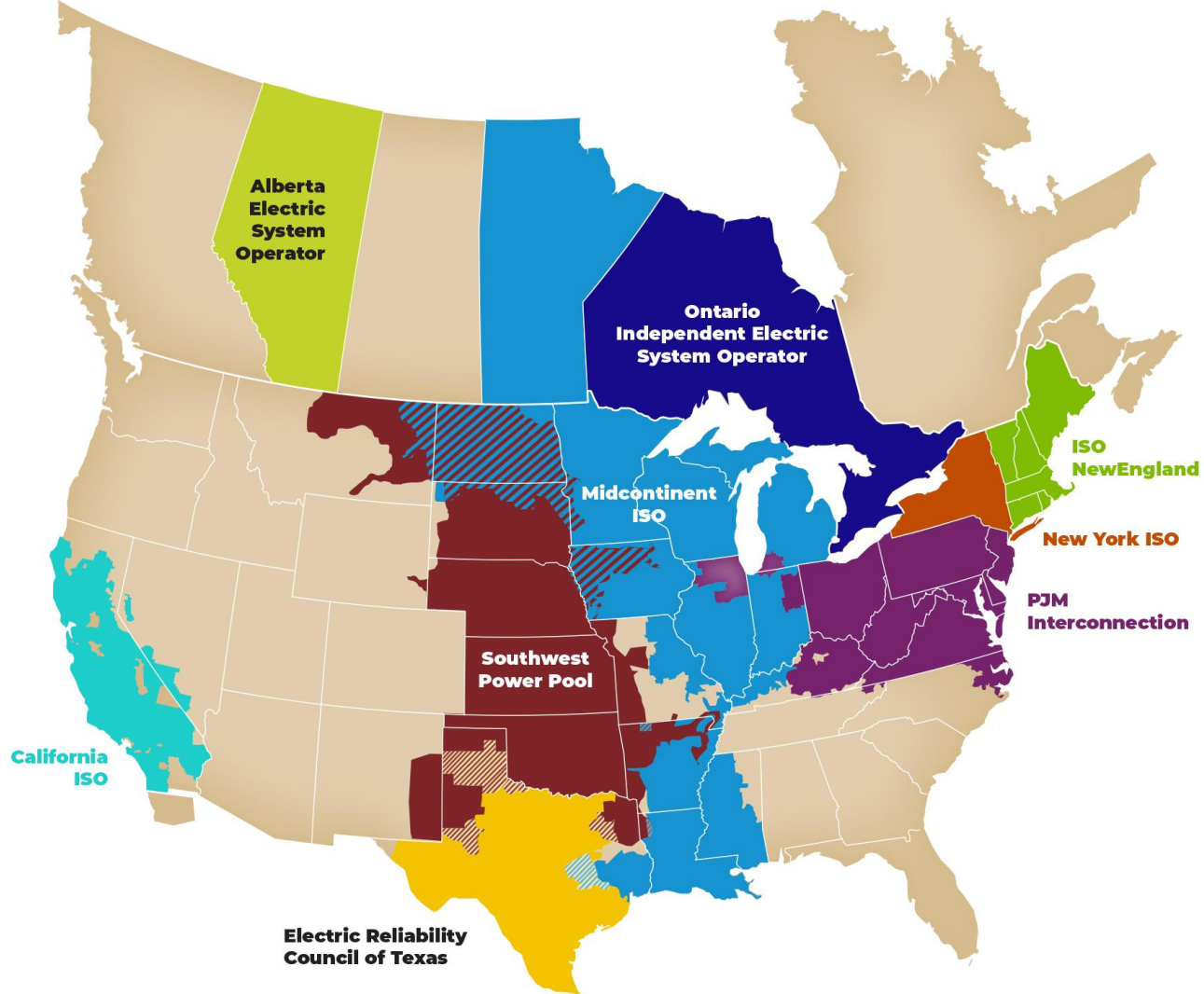
**U.S. Department of Labor**

**MSHA**

Mine Safety & Health Administration







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**S&P Global**

Market Intelligence





6,890 views | Jan 9, 2019, 07:40am

# Closing Colorado Coal Would Save \$2.5 Billion. A New Proposal Could Unlock The Coal-To-Clean Shift.



Energy Innovation: Policy and Technology Contributor   
Energy

POST WRITTEN BY

**Silvio Marcacci**

Silvio is [Communications Director](#) at Energy Innovation, where he leads all [media relations](#) and communications efforts.



## TWEET THIS



Colorado could save \$2.5 billion by replacing aging coal generation with clean energy



legislation was just introduced in Colorado's General Assembly to solve the coal retirement conundrum



FOSSIL FUELS

# Colorado May Have a Winning Formula for Managing Early Coal Plant Retirements

Under legislation pending in Colorado, utilities could issue ratepayer-backed bonds to reduce the cost of retiring aging power plants and fund transition assistance.

JUSTIN GERDES | MARCH 25, 2019



Colorado could save \$2.5 billion by replacing aging coal generation with clean energy



legislation was just introduced in Colorado's General Assembly to solve the coal retirement conundrum

## Democrats pass bills aimed at addressing climate change [^](#)

For carbon emitters: [House Bill 1261](#) sets a goal of the state [reducing greenhouse gas emissions](#) by 26% by 2025; 50% by 2030; and 90% by 2050 and allows the state to propose new regulations to achieve them.

For those interested in reducing greenhouse-gas emissions: [Senate Bill 236](#) reauthorizes the Public Utilities Commission and requires it [to consider the cost of carbon](#) when evaluating future energy projects. Additionally, [Senate Bill 96](#) will require the state's Air Quality Control Commission to collect data on greenhouse gas emissions in the state and to predict future emissions.

### FOSSIL FUELS

# Colorado M Managing E

Under legislation pend  
reduce the cost of retir

JUSTIN GERDES | MARCH 25, 2



Xcel Energy's coal-fired Comanche Generating Station, located in Pueblo, is the largest power plant in the state of Colorado. The facility can generate 1,410 megawatts of power. (Mike Sweeney, Special to The Colorado Sun)

# Formula for irements

epayer-backed bonds to  
ion assistance.



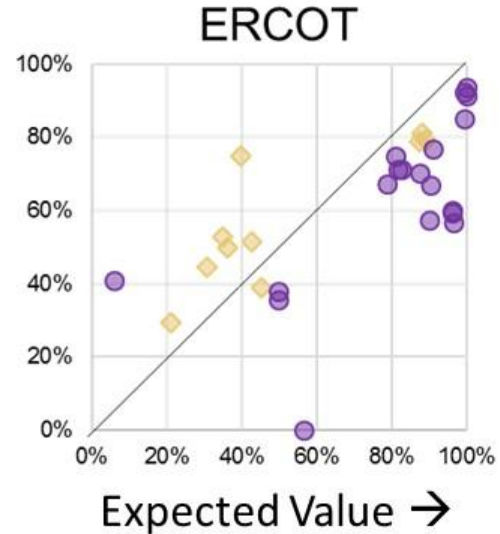
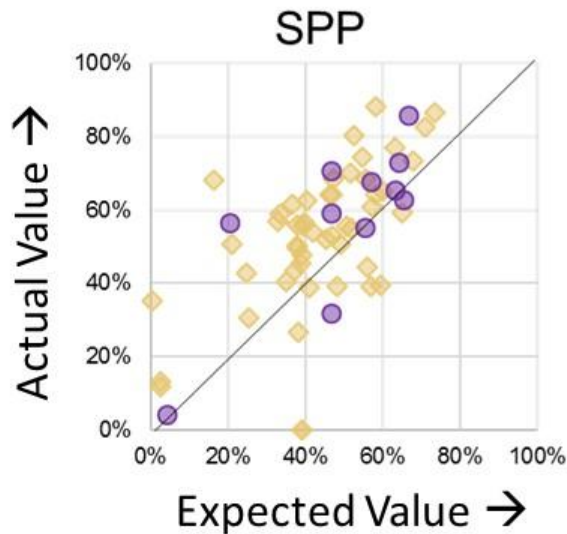
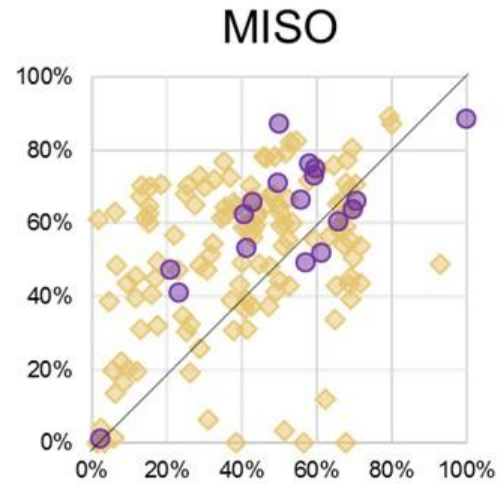
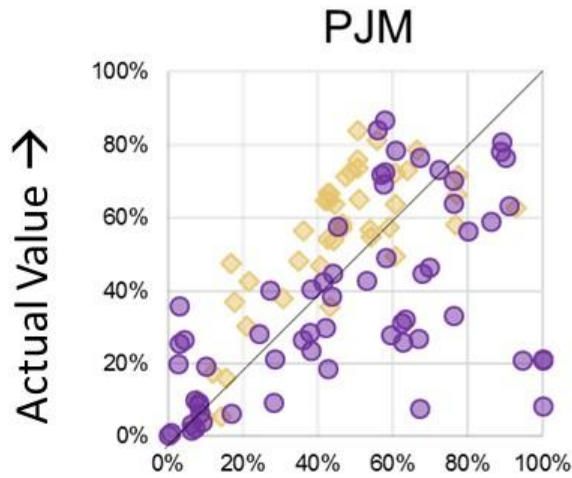


Monopoly  
Owned  
Coal Units



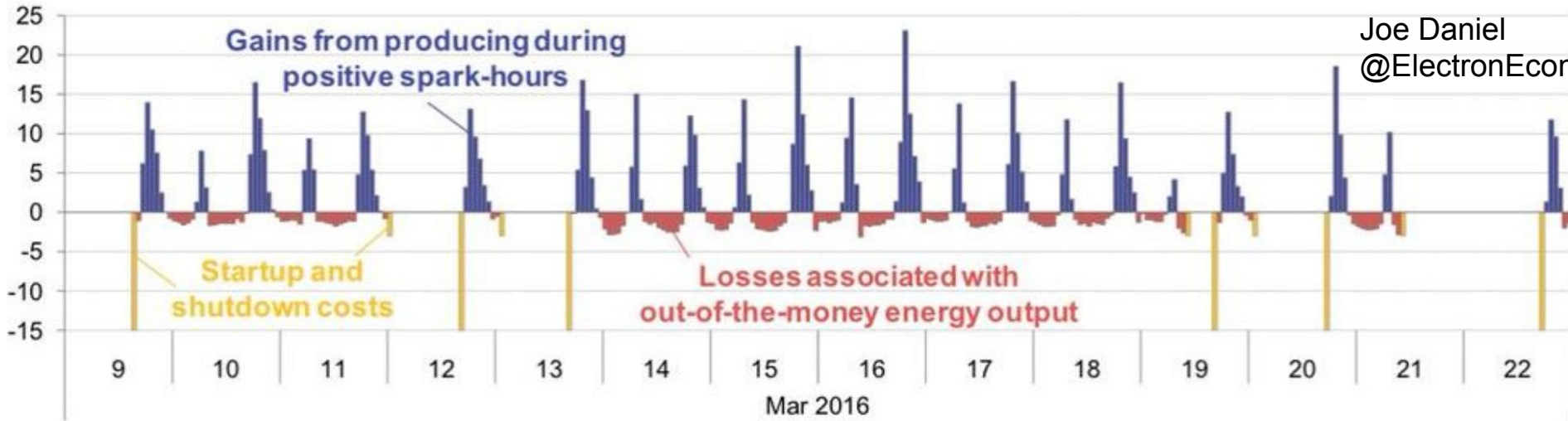
Merchant  
Owned  
Coal Units

Joe Daniel  
UCS USA  
@ElectronEcon



# Adversarial Generation Portfolios

Joe Daniel  
@ElectronEcon

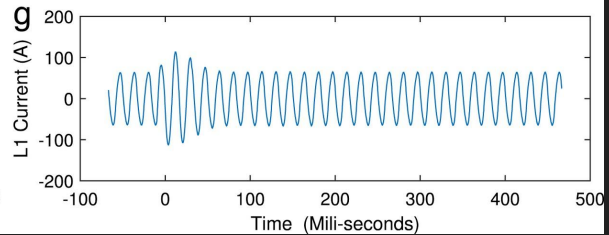
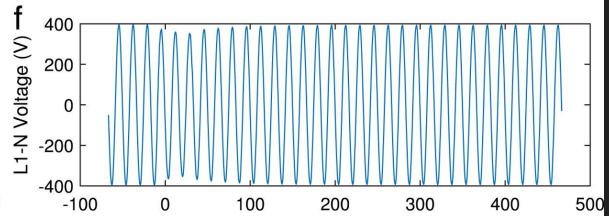
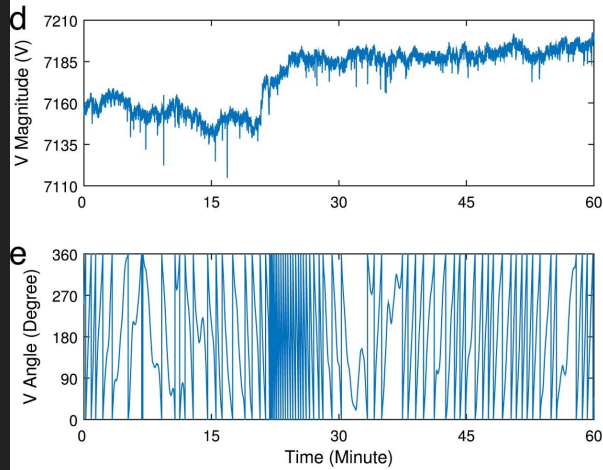
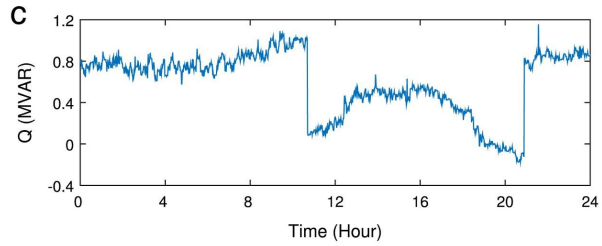
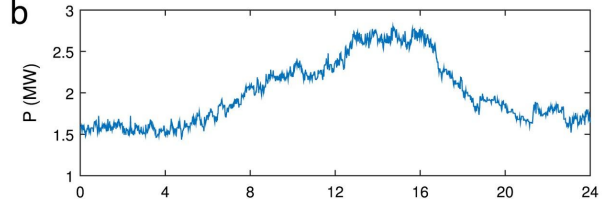
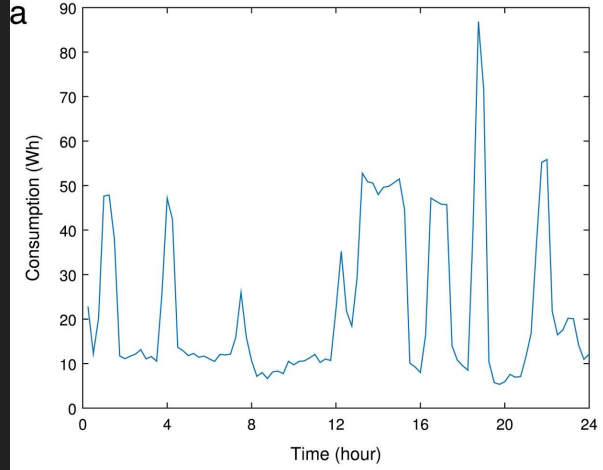


<https://www.nasuca.org/nwp/wp-content/uploads/2018/01/NASUCA-Coal-bailout-nobody-is-talking-about.pdf>



<https://spectrum.ieee.org/energy/the-smarter-grid/when-power-lines-break-a-new-control-system-keeps-the-sparks-from-flying>







Source Data

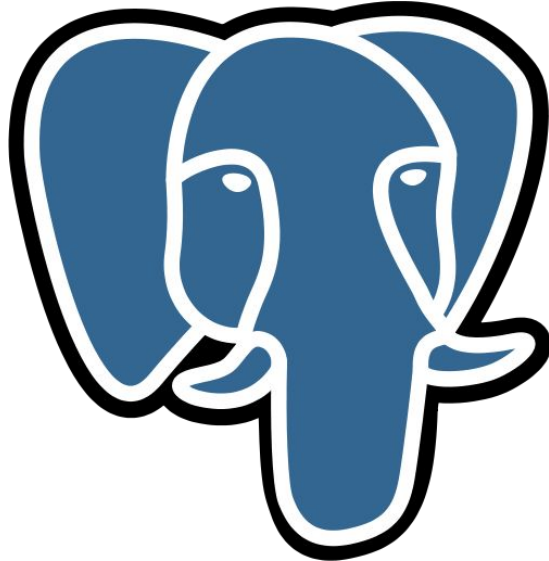
# Original Pipeline: From Mess to Postgres

## pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$



Data extraction, tidying & error correction (ETL)



Storage in an RDBMS (Postgresql)



Analysis in Jupyter Notebooks



Source Data

# New Pipeline: Meet users where they're at.

# pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$



Data extraction, tidying & error correction (ETL)

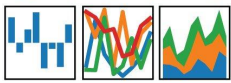


Storage, interchange, & archiving in Tabular Data Packages



# pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$



Heterogeneous Analysis Platforms



# Next Step: Archival Analyses



**PANGEO**



CLIMATE  
POLICY  
INITIATIVE



Clean Energy Action  
CITIZEN POWER



Rocky Mountain  
Farmers Union



Flora Family  
FOUNDATION