An Overview:

PacifiCorp Coal Unit Valuation Study

A Unit-by-Unit Cost Analysis of PacifiCorp's Coal-Fired Generation Fleet

By Energy Strategies
Commissioned by The Sierra Club

Overview of PacifiCorp's coal fleet:

10

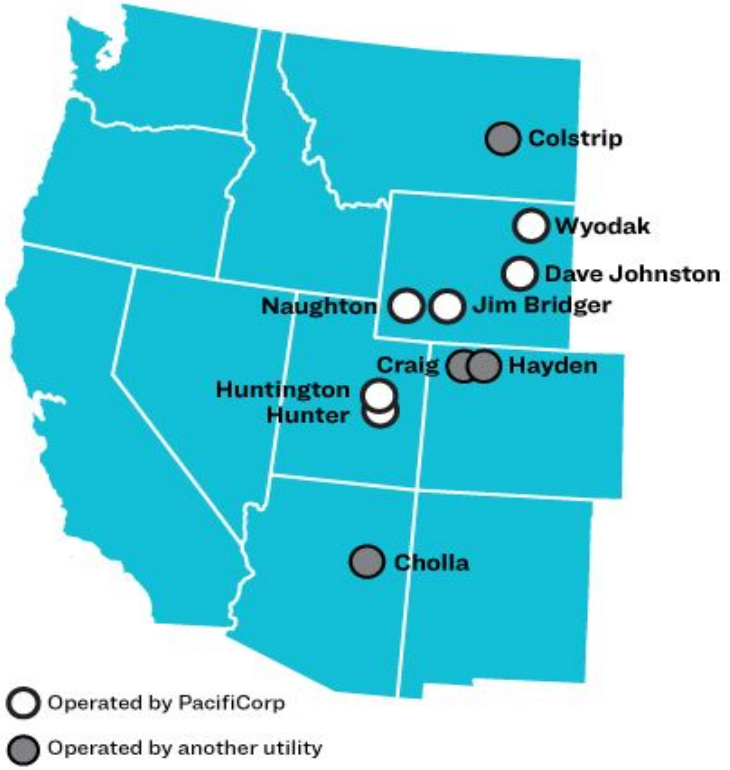
Coal-fired plants with PacifiCorp ownership interest.

24

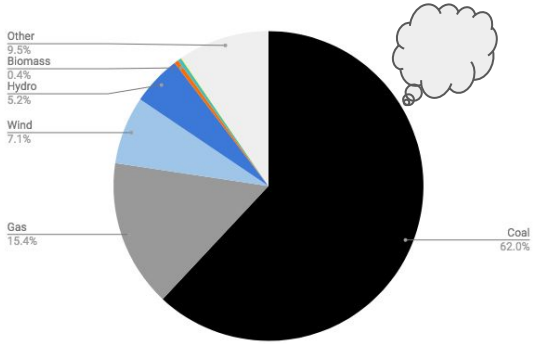
Coal-fired units in Wyoming, Arizona, Utah, Colorado, and Montana.

6

PacifiCorp sells electricity in Utah, Wyoming, Idaho, Oregon, Washington, and California.



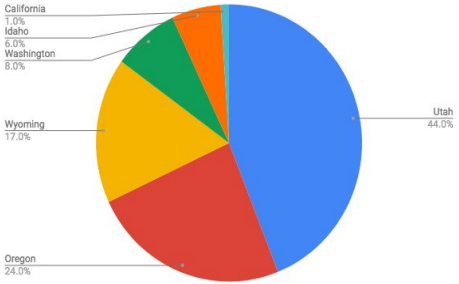
Overview of PacifiCorp's coal fleet:



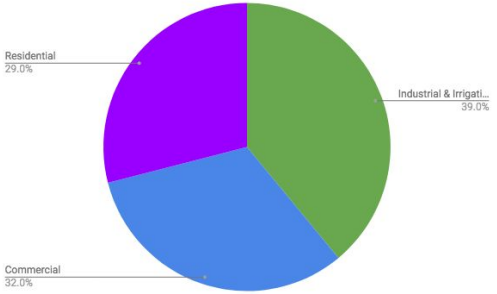
Coal production accounts for more than 60% of PacifiCorp's energy production.

PacifiCorp assumes that almost all of its coal units will operate through 2030.

PacifiCorp plans to retire 1,800 MW by 2030, less than ⅓ of its fleet.



Utah uses the majority of PacifiCorp's power, followed by Oregon and Wyoming.



Industrial customers across the region use the majority of PacifiCorp's power.

- From 2009-2016, PacifiCorp's O&M costs for coal plants went up by **53**%.
- Overall costs of operating PacifiCorp's coal plants through currently planned retirement is **$11.7 billion**.

Coal's falling value proposition

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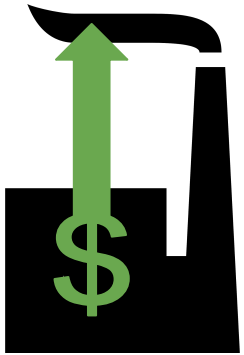
1 Gigawatt (GW) can power up to 750,000 homes.

86 GW of non-economic coal retired nationwide through mid-2018

20 GW of coal slated to be retired nationwide from 2018-2022



48% of US coal with negative margins 2012-2017 (BNEF)

$11 - $18/MWh

Bids received by Xcel (Colorado) for new wind

Overview of Energy Strategies rationale and methodology

SIERRA CLUB

Who?

- The study was conducted by independent energy consulting firm *Energy Strategies.*
- The study was commissioned by the *Sierra Club*.

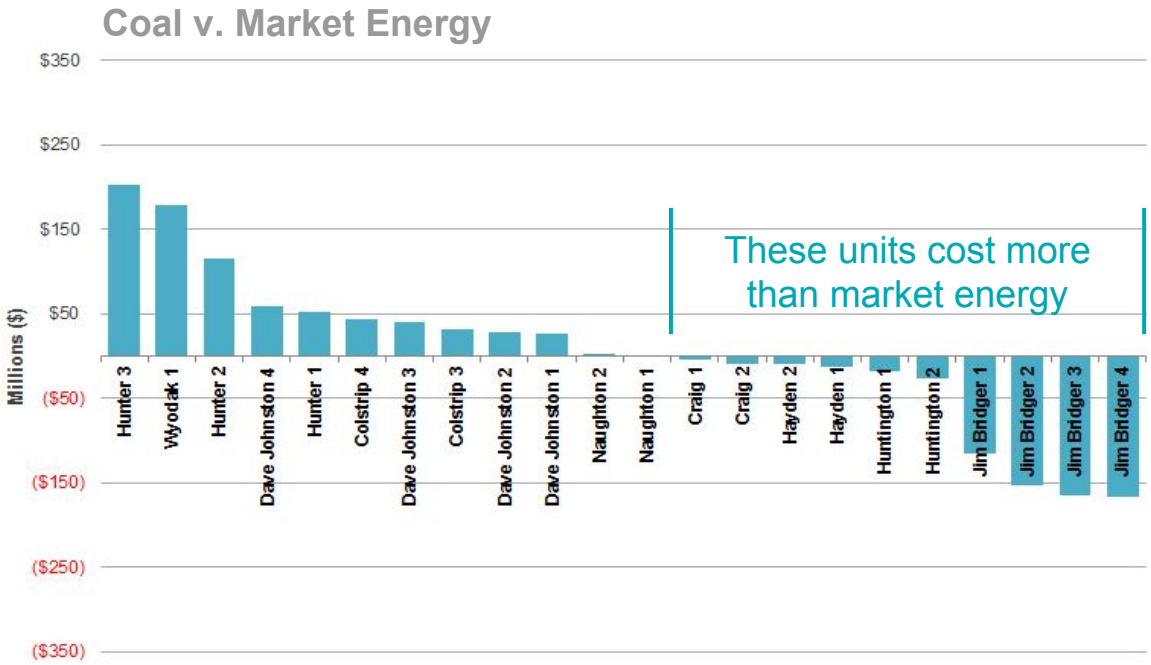
Why?

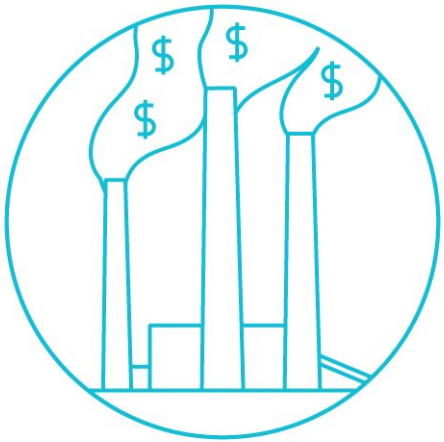
- Customers, regulators and stakeholders are questioning the future of PacifiCorp's coal plants.
- PacifiCorp is an unusually coal-dependent utility in the region.
- Coal is a significant driver of customer rates.
- PacifiCorp's planning process does not review coal plant economics.
- Report calls for greater scrutiny of the utility's slow pace of replacing coal with cheaper power.

How?

- Using publicly available data, this analysis compares the **present value** of each coal unit's operating and capital costs against alternative energy options.
- Examines market purchases, solar, and wind alternatives.
- Report does not examine capacity replacement, transmission expansion, or fixed fuel contracts.

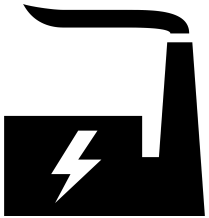
Overview of market purchase replacement options





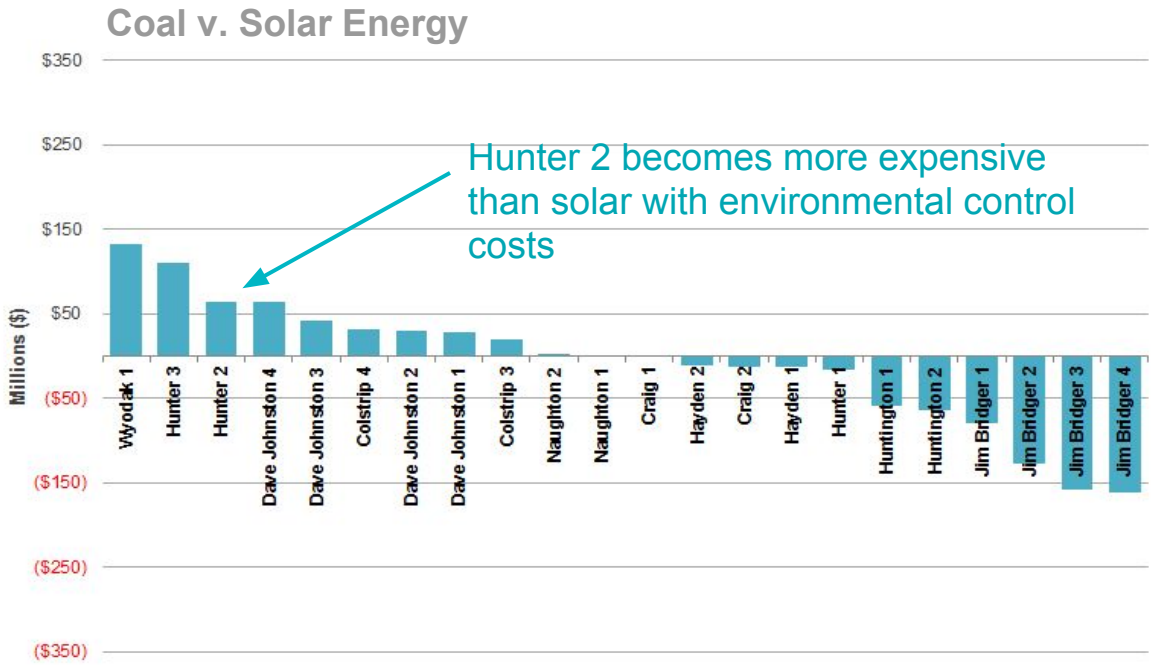
11 coal units run at a higher cost than market energy over their anticipated lives.

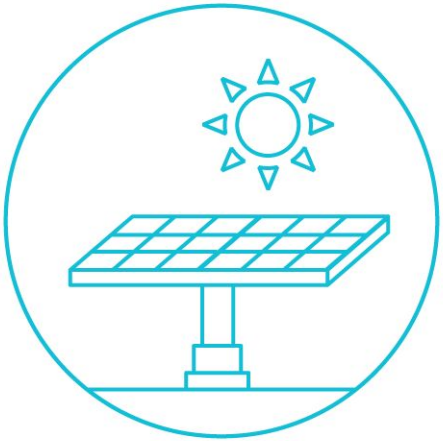
$680 million potential savings from displacing coal with market-based energy.



Costly environmental controls still required at Hunter 1 & 2, Huntington 1 & 2, and Jim Bridger 1 & 2.

Overview of solar replacement options



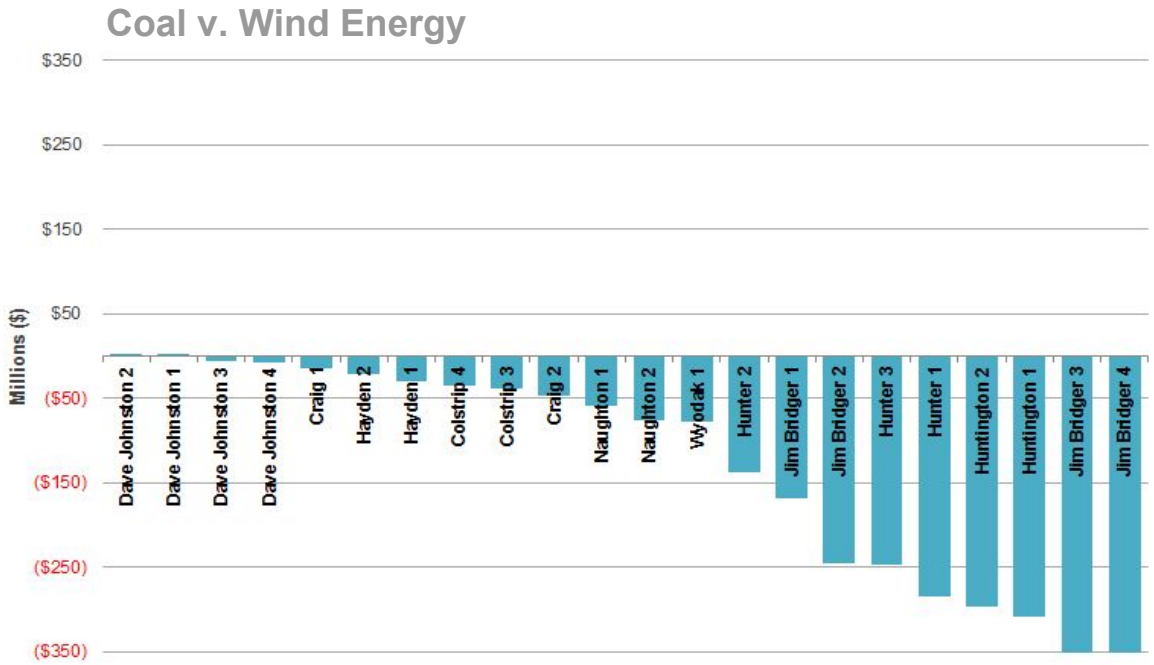


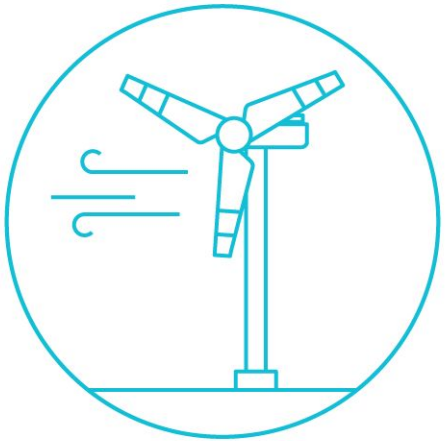
12 coal units run at a higher cost than solar energy over their anticipated lives.

$700 million potential savings from displacing coal with solar energy.

.08% of PacifiCorp energy comes from solar.

Overview of wind replacement options



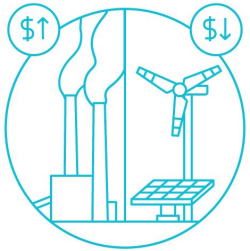


20 coal units run at a higher cost than wind energy over their anticipated lives.

$2.8 billion potential savings from displacing coal with wind energy.

7% of PacifiCorp energy comes from wind.

Conclusions



The cost of PacifiCorp's coal units are increasing while the cost of renewable energy continues to fall.

50% of PacifiCorp coal units run at a higher cost when compared to solar and market purchases.

20 of 22 coal units run at a higher cost when compared to wind, regardless of required pollution controls.

This reality poses a fundamental question. **Is PacifiCorp acting in the best interest of its customers when it holds on to coal plants and fails to choose increasingly least-cost and less risky resources on a forward-going basis?**