

TRANSITIONING FROM COAL TO RENEWABLE ENERGY



TYLER HUEBNER
RENEW Wisconsin

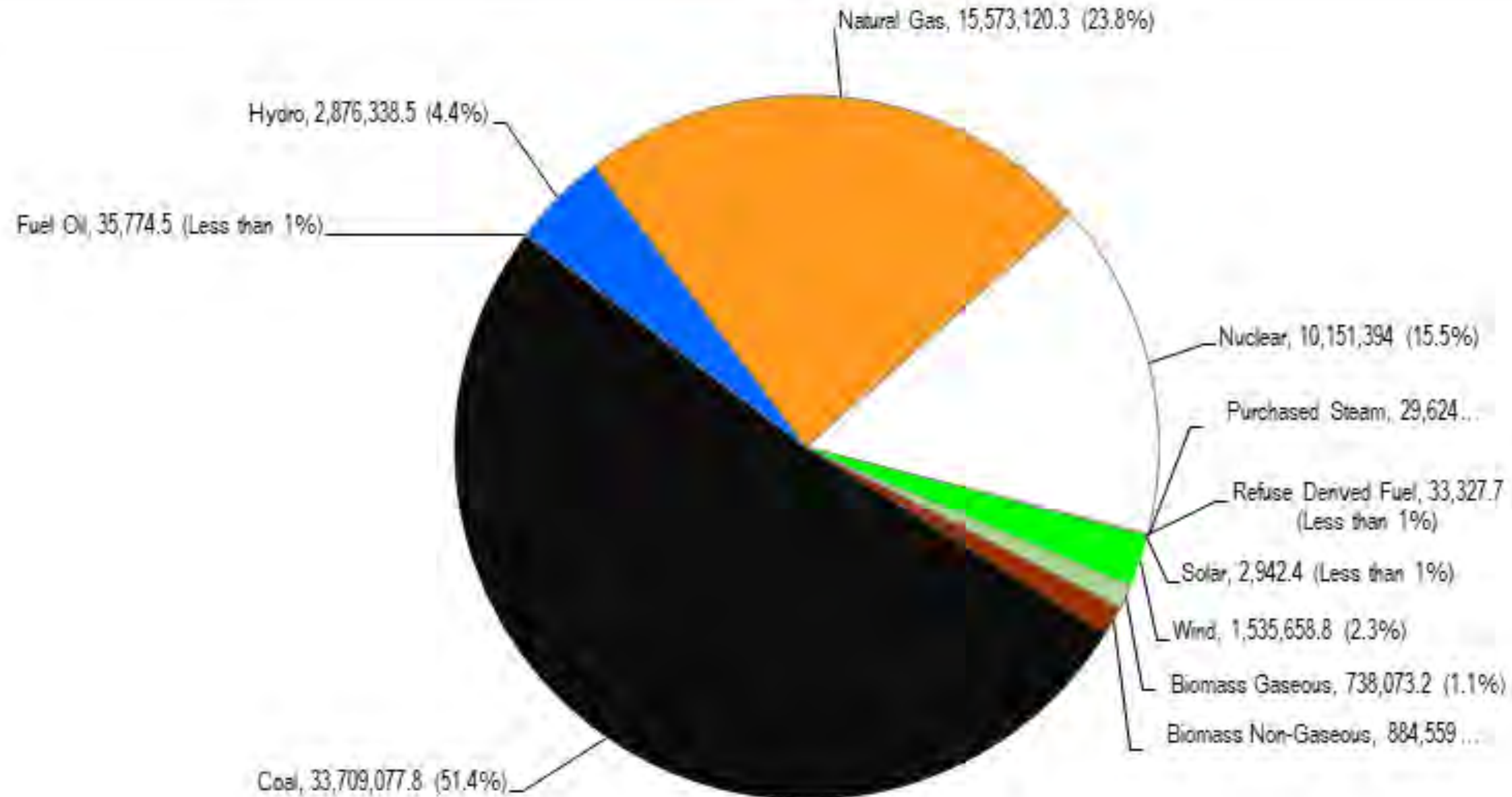


ELIZABETH
KATT REINDERS
Sierra Club



TOM CONTENT
Citizens Utility
Board

2017 Electricity Production in WI



Major Coal Plants in Wisconsin

Power Plant	Capacity (Approximate)	Year Built	Environmental Retrofit	Estimated Retirement Year
Columbia 1 & 2	1,100 MW	1975 & 1978	2011-13	2035 / 2038
South Oak Creek Units 5-8	1,135 MW	1960	2007-11	2040?
Elm Road Generating Station	1,270 MW	2011	--	Mid-2040s
Weston 3 / 4	350 MW & 595 MW	1981 / 2008	2009	2040s
Edgewater 5	380 MW	1985	2017	Mid-2040s
Genoa & JP Madgett	379 MW & 387 MW	1969 & 1979	2010s	2029 / 2039?

Q: How do Coal Plants (and other utility assets) get paid for?

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A: At a high level, pretty much like your home mortgage: there is:

- A principal payment
- An equity/interest payment
- Amortized over 30-60 years typically

But innovation has struck:

Unsubsidized Wind LCOE



WIND: ▼ 69%

Unsubsidized Solar PV LCOE



SOLAR: ▼ 88%

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Transitioning From Coal to Clean Energy

Elizabeth Katt Reinders
Deputy Director - North Central Region
Sierra Club Beyond Coal Campaign



2020 Renewable Energy Summit
January 16, 2020



SIERRA CLUB



- Eliminate coal's contribution to climate change no later than 2030
- Retire the existing coal fleet and replace that infrastructure with a clean energy economy fueled by wind, solar, energy efficiency and storage
- Stop construction of new coal and gas power plants
- Keep coal reserves underground and out of world markets



Climate Changed

Half of All U.S. Coal Plants Would Lose Money Without Regulation

By [Joe Ryan](#)

March 26, 2018, 10:51 AM CDT

- ▶ Many coal plants kept open to ensure grid reliability: BNEF
- ▶ 'Plants persist even when they cost more to run than replace'

Bloomberg.com

What's to be done about uneconomic coal plants?



When done well, securitization can deliver win-win-win-win

- Clean energy replacing coal and gas
- Customer savings in short and long term
- Keeping the utility whole
- Ensure workers and communities are cared for



- Securitization is a de-risking mechanism
- It removes a barrier to early retirement and provides more options

Harnessing Financial Tools to Transform the Electric Sector



RESOURCES:

Report: [Harnessing Financial Tools to Transform the Electric Sector](#)

- Uday Varadarajan, Rocky Mountain Institute
- David Posner, independent analyst
- Jeremy Fisher, Sierra Club

[Blog post](#): Aligning Ratepayer and Investor Interests in Non-Economic Coal

- Jeremy Fisher, Sierra Club

National Utility Finance and Securitization Project

- Sierra Club's Jeremy Fisher and Brendan Pierpont
- Harriet Moyer Aptekar
- Ron Binz
- Ron Lehr
- many more individuals with wealth and breadth of expertise



Proposed gas plant	Proposed capacity / in-service year	Gas plant cost estimate	Clean energy portfolio cost estimate	NPV savings from building clean energy	Gas plant stranded year
Nemadji Trail Energy Center	625 MW / 2024	\$52/MWh	\$38/MWh	\$231 million	2032



Questions?

Get in touch:

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Consumer Advocate Perspective on the Transition from Coal

RENEW WISCONSIN SUMMIT 2020

Tom Content, Citizens Utility Board of Wisconsin



*Your Independent
Consumer Voice*

cubwi.org

A Bit About CUB

- Created by Legislature, November 1979
- Non-Profit, Non-Partisan, Independent
- Focused on the Pocketbook/Bottom Line
- Advocate for the Residential and Small Business Customers in Rate and Construction Cases at the PSC

A State AG Typically Fulfills This Role in Most Other States



2000-2018: Investing in Reliability Investing in Fossil Fuels

Fossil Fuel Investments: New Coal, Scrubbing Old Coal, New Gas

\$2.5 Billion Oak Creek Power Plant



New Plant Opened: 2010, 2011

12.7% Profit

**Air Pollution Scrubbers on
Pleasant Prairie Power Plant**



**Former Site of EPRI Demo Project
for GHG Capture Technology**

Rates up 80% since 2001, **much faster** than inflation (44%)

2018 Residential Electric Rates for Investor Owned Utilities 1,000 kWh Consumption

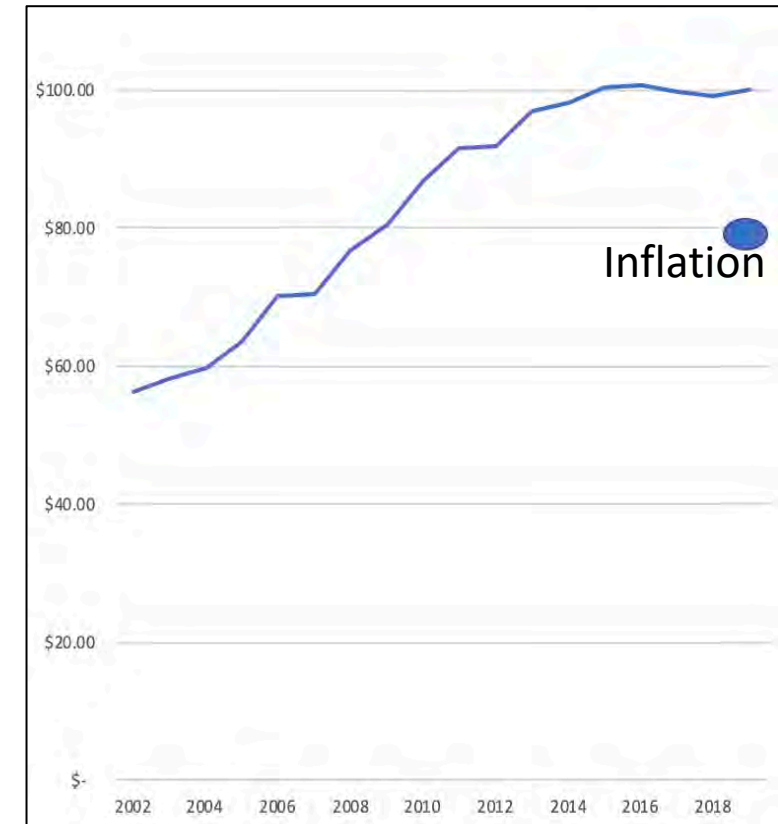
2018
Rankings

49 utilities

11
states

Line	Utility	State	2018 ¢/kWh*
1	DTE Electric Company	Michigan	15.99
2	Southern Indiana Gas & Electric Company	Indiana	15.70
3	Consumers Energy	Michigan	15.56
4	Upper Michigan Energy Resources-We Energies ¹	Michigan	15.43
5	Madison Gas & Electric Company	Wisconsin	15.22
6	Interstate Power & Light	Iowa	14.92
7	We Energies (formerly Wisconsin Electric)	Wisconsin	14.40
8	Empire District Electric Company	Missouri	14.07
9	Northern States Power Company	Minnesota	13.99
10	Northern Indiana Public Service Company	Indiana	13.91
11	Kansas City Power & Light Company	Missouri	13.90
12	Kansas City Power & Light Company	Kansas	13.64
13	AEP (Ohio Power Rate Area)	Ohio	13.29
14	Northern States Power Company	Wisconsin	13.27
15	WP&L	Wisconsin	13.22
16	Toledo Edison Company	Ohio	13.20
17	Westar Energy-KPL	Kansas	13.14
18	Westar Energy-KGE	Kansas	13.14
19	Northwestern Wisconsin Electric Company	Wisconsin	13.11
20	Commonwealth Edison Company	Illinois	13.08

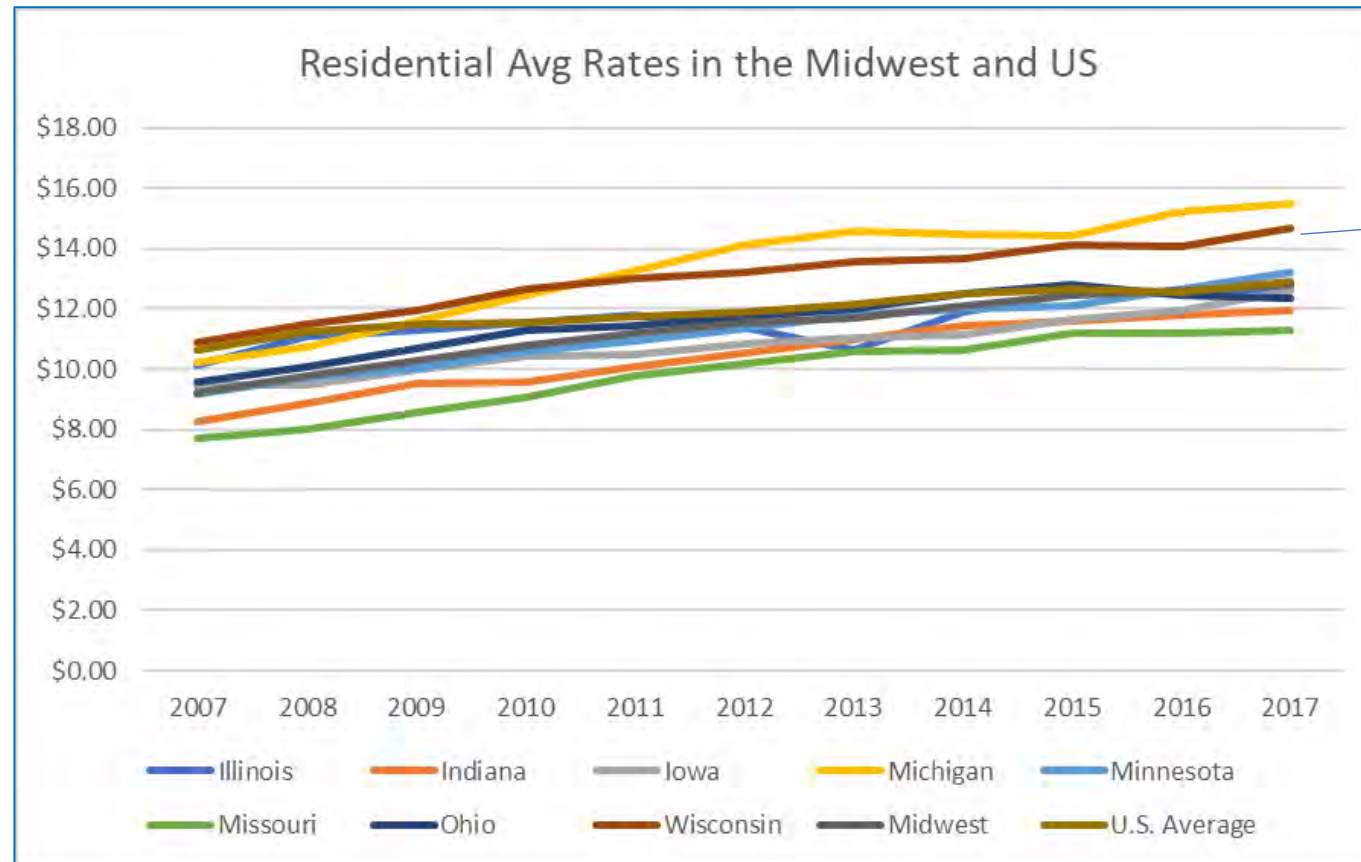
We Energies rates: 2001-2019



Wisconsin Rates: 2nd Highest in Midwest ;13th in the nation

“We invested first. Other states will catch up and see rates rise as they invest.”

Didn't happen.



Wisconsin

Source: Strategic Energy Assessment 2018-2024

"No More Coal!" ... From the Streets to the Boardroom

2003: SC Johnson scion Sam Johnson Leads "No More Coal"
Rally in downtown Racine, Wisconsin

UTILITY FINANCE/GENERATION COSTS CHANGING RAPIDLY

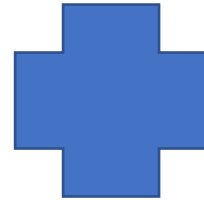
2018-19: CO2 Pledges: Reduce by 100% by 2050 (Xcel Energy, MGE)
Reduce 80% by 2050 (Alliant Energy, We Energies, WPS)
Settlements with activist shareholders concerned about climate change

2019: Gov. Evers: Carbon Free by 2050 Goal for State, New Task Force
Pleasant Prairie Securitization, RMI Wisconsin Collaborative

Will We Have to Pay Twice for A Clean Transition?

(If I'm Selling a House, I Stop Paying the Mortgage...
But That's Not How It Works in the Utility World)

Billions remain to be paid
on Coal Plant Investments of past
10-15 years



Billions to be paid for new generation
to replace what's going to be shuttered?

We Energies Rate Case: Pleasant Prairie Shutdown and Remaining \$\$\$

ENERGY TRANSITIONS
'Stranded costs' mount as coal vanishes from the grid
Jeffrey Tomich, E&E News reporter • Published: Wednesday, May 29, 2019



**'Money for nothing': consumer groups,
utilities at odds over who pays for closing
plants**

From the Fave 5: Reporter Chris Hubbuch picks his top stories from 2019 series
Chris Hubbuch | Wisconsin State Journal Jun 6, 2019

2019 WEC Rate Case Settlement Securitization / Refinancing Plus a Collaboration Commitment

- ✓ Pleasant Prairie: \$100M in pollution control costs to be securitized through Wisconsin Environmental Trust Financing law.
 - ✓ Only one-fourth of remaining plant balance, but law specifically targets pollution controls, and that is remaining investment on the books for WE after tax reform impacts taken into account.
 - ✓ Securitization works like a refinancing. Interest rate drop to yield savings for customers.
 - ✓ Savings forecast to be tens of millions of dollars, potentially \$60 million?
 - ✓ WE expected to file a securitization case at PSC in 2020.

Looking Ahead ... Toward a Win-Win-Win?

Goal – An Orderly and Efficient Transition to Maximize Benefits for Customers

- Supply Side: Securitization as One Tool Toward That End, Plus Advanced Ratemaking
 - Securitization, Enables Capital Recycling / Filling Utility's Earnings "Hole" / Not a Panacea for Customers Necessarily
- Demand Side: Deployment of Advanced Energy Efficiency and Demand Response

What's On Tap This Year:

- 1) Securitization Docket (generic) at PSC
- 2) Pleasant Prairie Securitization Docket at PSC
- 3) RMI/Sierra/Stakeholder/Utility/PSC Coal-to-Clean Ad-Hoc Group

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Appendix – 25 year utility asset of \$100 million.

Year 1: $\$100,000,000 \times 7.5\%$ weighted average cost of capital = \$7.5 million

Year 2: $\$96,000,000 \times 7.5\%$ weighted average cost of capital = \$7.2 million

Year 3: $\$92,000,000 \times 7.5\%$ weighted average cost of capital = \$6.9 million

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Total after 25 years: Ratepayers have paid \$197,000,000 for a \$100,000,000 asset.

BUT, in the first year, they pay \$11.5 million instead of \$100 million.

Just like a \$200,000 home, paid for over 30 years at 4.5% interest, would cost you about \$365,000.

But then you don't have to have \$200,000 to start living in your home....