

Welcome to 350 Madison's Monthly Meeting

- Everyone is muted to reduce background noise.
- **If you would like to speak, please just unmute yourself!**
 - Feel free to test this between 6:55 and 7:00 and say hello!
 - If your audio does not work, you may want to call in on your phone (but still view us on computer). Tell Zoom you want to use phone or dial 1-312-626-6799. Meeting ID 823 7977 1748. (Password: 797508).
 - We suggest you “start video” so we can see your face (if you have a camera on your device).
- We suggest you use the ‘**gallery view**’ (in upper right-hand corner if on laptop) so you can see all our faces (after we take down these directions).
- Please send technology questions to **Chat Box** . Also feel free to ask questions or make comments throughout in the Chat.



Celebrations - Breaking News (July 6, 2020)

"Two of the nation's largest utility companies announced on Sunday that they had [canceled the Atlantic Coast Pipeline](#), which would have carried natural gas across the Appalachian Trail, as delays and rising costs threatened the viability of the project.

Duke Energy and Dominion Energy said that lawsuits, mainly from environmentalists aimed at blocking the project, had increased costs to as much as \$8 billion from about \$4.5 billion to \$5 billion when it was first announced in 2014.,.,The two energy companies won a victory just last month in the [Supreme Court over a permit](#) from the U.S. Forest Service, but said that "recent developments have created an unacceptable layer of uncertainty and anticipated delays" for the pipeline. They cited the potential for further legal challenges."

Celebrations- More late breaking news

Judge orders Temporary shutdown of controversial Dakota Access Pipeline.

Monday, July 6, 2020 New York (CNN Business)The Dakota Access Pipeline must shut down by August 5 during an in-depth environmental review of the controversial project, a district court ruled Monday in a defeat for the Trump administration.

The rare shutdown of an operating pipeline marks a major win for the Standing Rock Sioux Tribe and environmental groups that have fought fiercely for years against the oil pipeline.

Preview of Evening

- 7:00 Welcome & Introductions
 Julia Isaacs and Marian Fredal
Zoom Intro, Land Acknowledgement, Celebrations, Preview
Introducing 350 Madison's interns & welcoming newcomers
- 7:15 **Putting the Public Back in the Public Utility System**
 Gary Radloff, Radloff Group & Co-Chair of Wisconsin's Green Fire
Energy Policy Work Group
- 7:45 **Taking Action**
 Comments on Line 5 **Actionar** w/Phyllis Hasbrouck & Seth Jensen
Other action opportunities
- ~8:15 **Optional Time to Hangout and Chat in Zoom Breakout Rooms**

OPENING UP PUBLIC SERVICE COMMISSIONS TO THE PUBLIC:

*WHY CLIMATE POLICY REFORM REQUIRES A SEAT AT
THE TABLE*

Gary Radloff, Principal, The Radloff Group

July 6, 2020

Madison, WI – Presentation to
Madison350.org

Themes and topics for today

- **Why Madison350.org should demand a seat at the table before the Wisconsin Public Service Commission.**
- Energy Democracy: A framework for expanding participation in the energy decision-making, addressing climate change and environmental justice, and advancing new policy.
- An introduction to the new energy supply & demand paradigm driving the need for new energy policy.
- State Regulatory Policy Ideas: Highlight the state of the art in other states to address a changing energy system.
- *Try to answer your questions.*

Why Madison350.org should have access to PSC?

- **Knowledge Transfer** – Knowledge transfer refers to sharing or disseminating of knowledge and providing inputs to problem solving. (Without a seat at the table you cannot help solve policy problems and offer creative alternate solutions).
- **Disrupt political status quo** – Utilities and other electrical power status quo stakeholders are not driven to reduce carbon dependency. These are the corporations that funded and perpetuated climate denial for decades.
- **Combat privilege** – Fossil fuel companies and electric utilities have been granted a privileged position in policy arena for decades. To achieve environmental justice and reverse historic discrimination new voices must be heard.

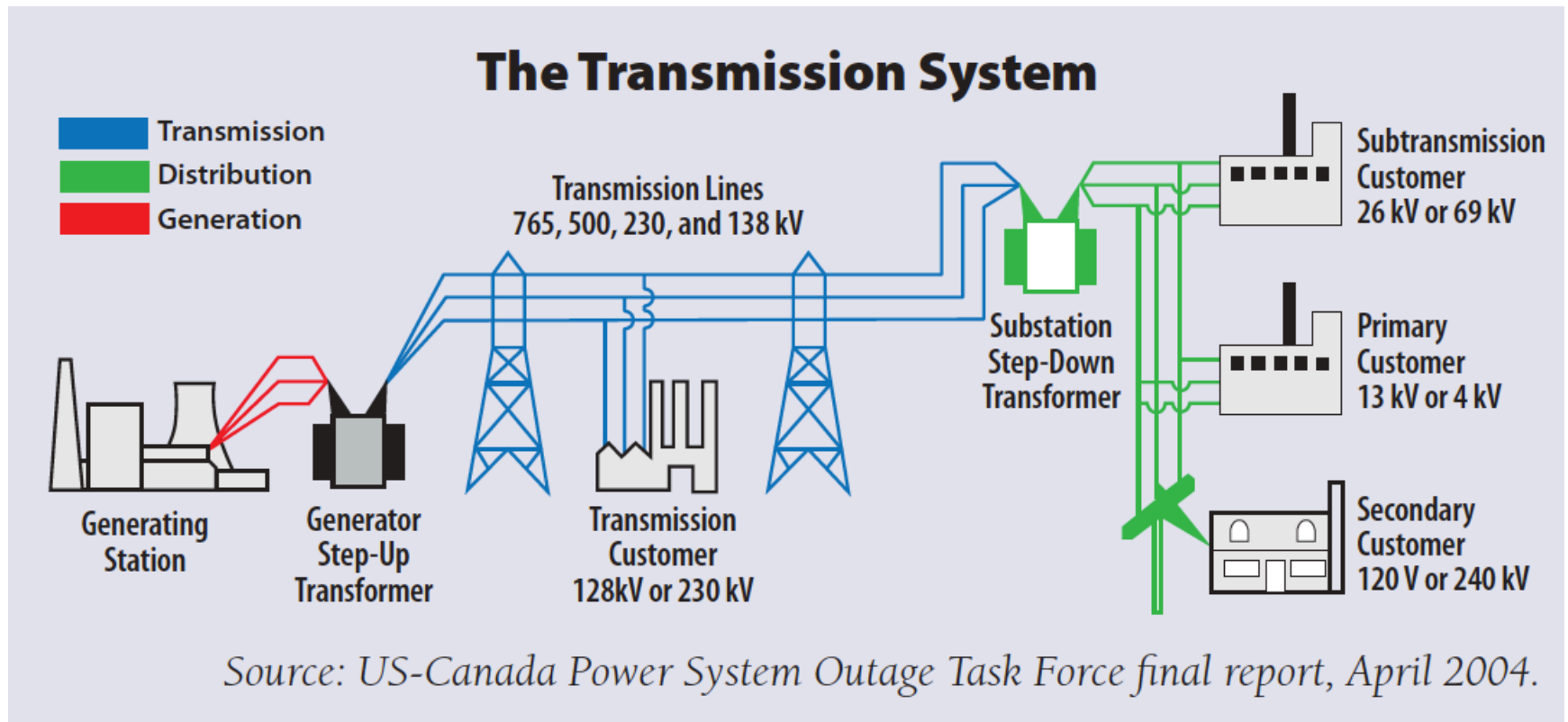
Reasons to seek a seat at the table

- “The restrictive and often contentious nature of conventional regulatory processes make them inadequate to manage the scale, speed, and complexity of the historic transformation taking place in the electricity system.”
-
- “Traditional approaches used in regulatory processes—mostly quasi-judicial hearings and contested decision-making consisting of back-and-forth filings between utility commissions, utilities, and stakeholders—are not up to the challenge of guiding participants through new, dynamic, and interrelated topic areas.”
-
- “New opportunities include different rate design options, more-sophisticated system planning, and alternative procurement mechanisms to more cost-effectively meet grid needs.” (RMI Report)

What is energy democracy?

- Energy democracy is a concept, a social movement and a visionary organizing set of principles.
- Energy democracy is a political, economic, social and cultural concept that merges technology energy transition with a strengthening of democracy and public participation.

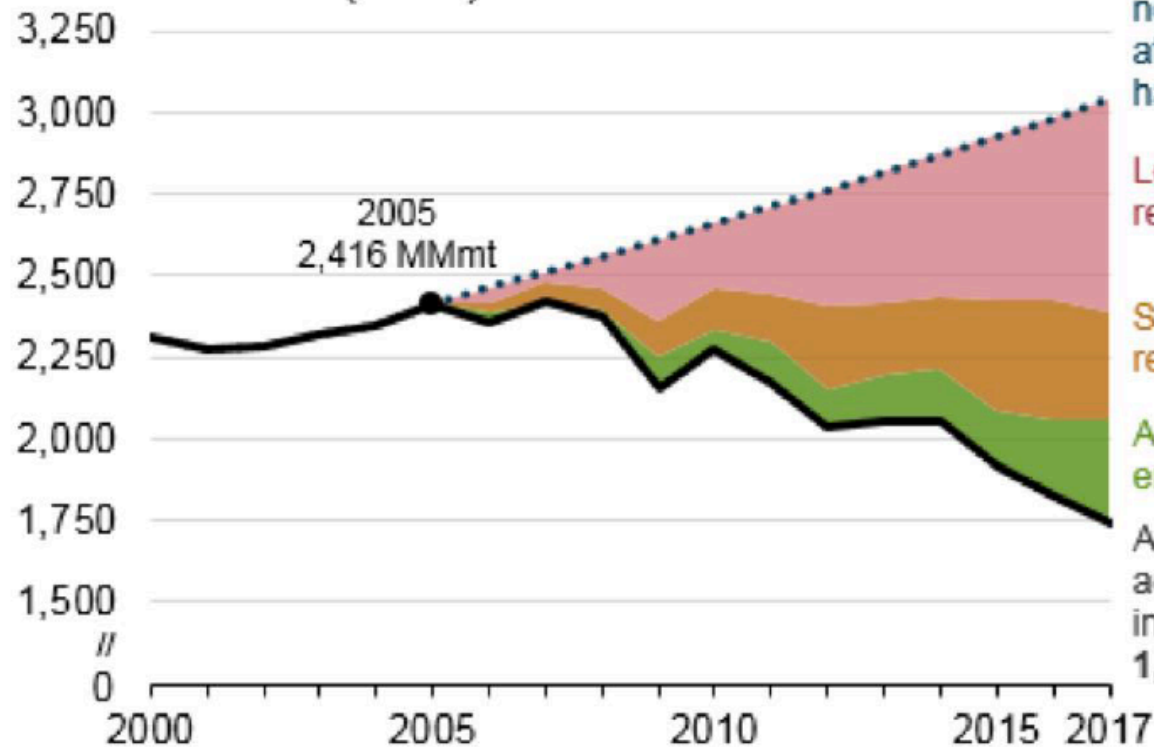
Basic Transmission System



Controlling Demand the Best Way to Reduce Carbon Emissions in the U.S.

U.S. electric power carbon dioxide emissions (2000-2017)

million metric tons (MMmt) of carbon dioxide



If demand growth had remained near 2% and carbon intensity fixed at 2005 levels, emissions would have been **3,043 MMmt** in 2017

Lower demand growth alone reduced emissions by **654 MMmt**

Switching among fossil fuels further reduced emissions by **329 MMmt**

Adding noncarbon sources reduced emissions by **316 MMmt**

After these reductions, actual carbon dioxide emissions in the power sector were **1,744 MMmt** in 2017



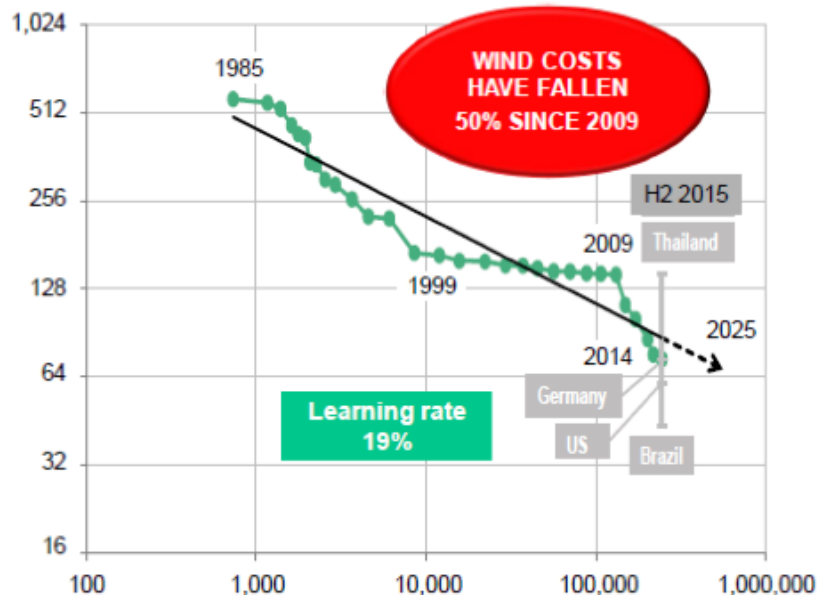
Figure 1. US electric power carbon dioxide emissions (2000-2017). *Source:* EIA 2018.

The First Distributed Energy Evolution

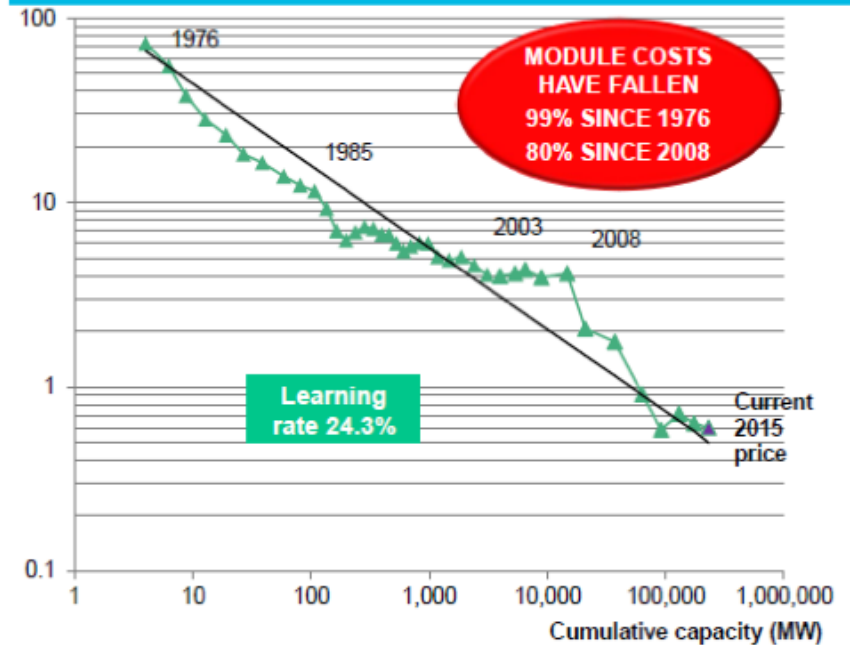
Falling Prices & Learning Rates

(Source Bloomberg Energy)

ONSHORE WIND LEVELISED COST (\$/MWh)



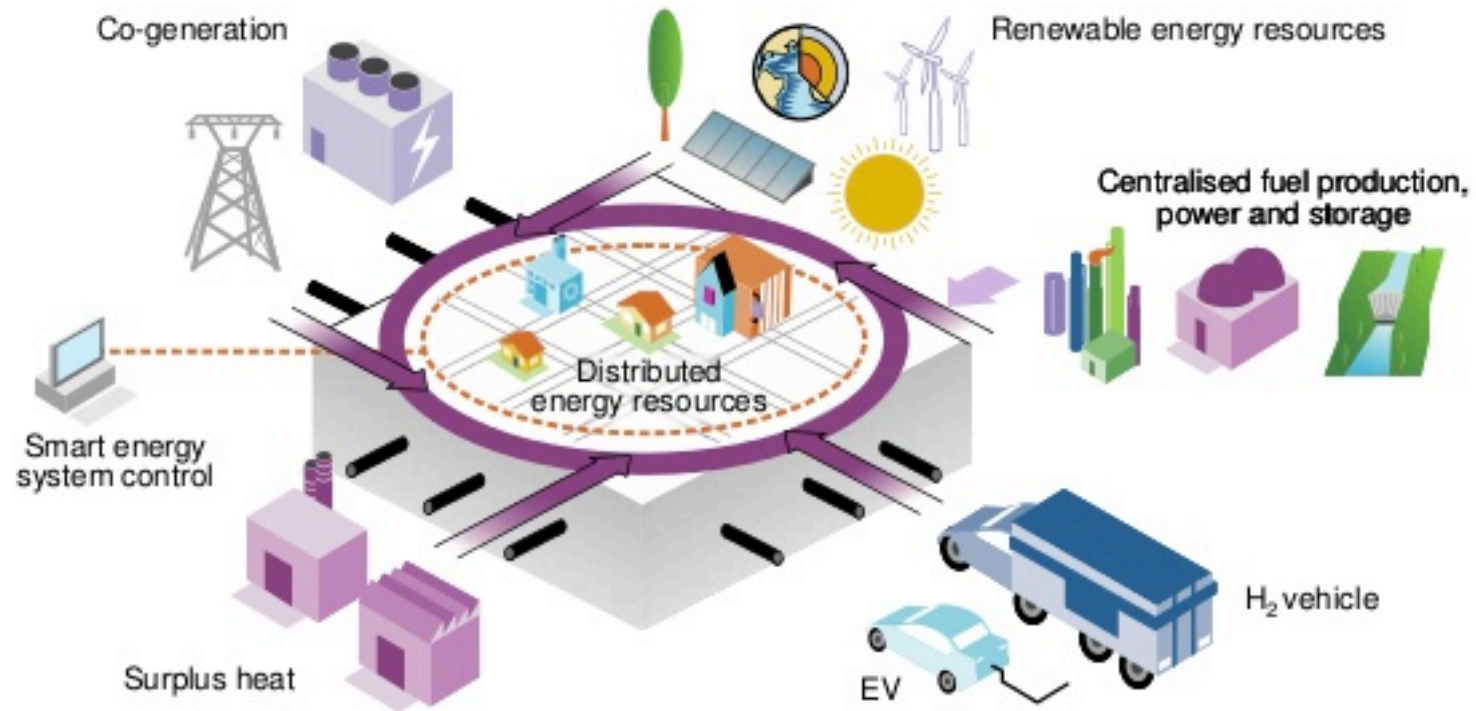
SOLAR PV MODULE COST (\$/W)



Something to think about: Start with system losses and then redesign the system

- Based on EIA figures for total retail electric sales in the U.S. in 2016 and the average retail price of electricity during the same period, the value per year for total system losses in the U.S. is an astounding \$19 billion dollars. This figure is based on EIA's latest calculation of a total average loss factor for the U.S. of 4.7 % in 2015. (Source: *Transmission and Distribution System World* Dec. 26, 2017 accessed at energycentral.com 12/27/17)
- Distribution management and automation technologies, demand management systems and energy storage are just a few of the growing list of smart grid technologies that can help reduce power losses by leveling, reducing or improving the quality, and thereby the efficiency, of power flows. This is existing technology and can be done today!

The second evolution: DERs allow for a paradigm shift

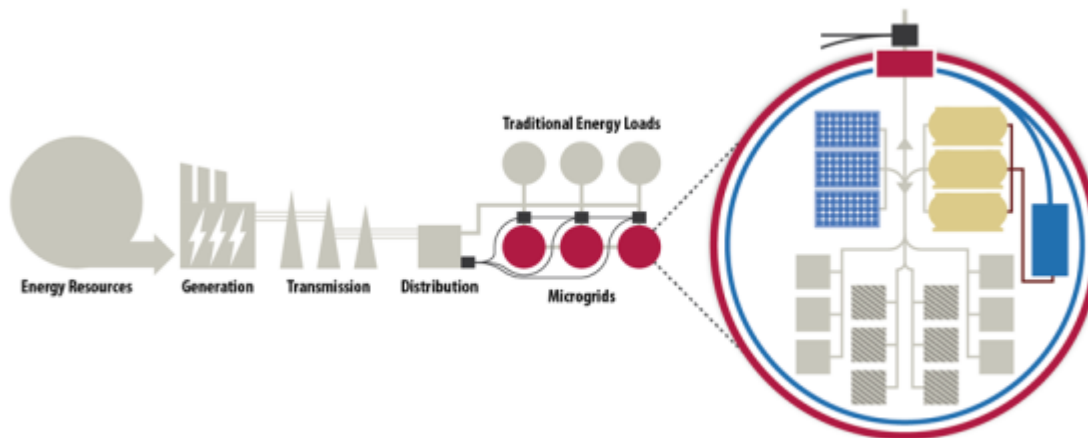
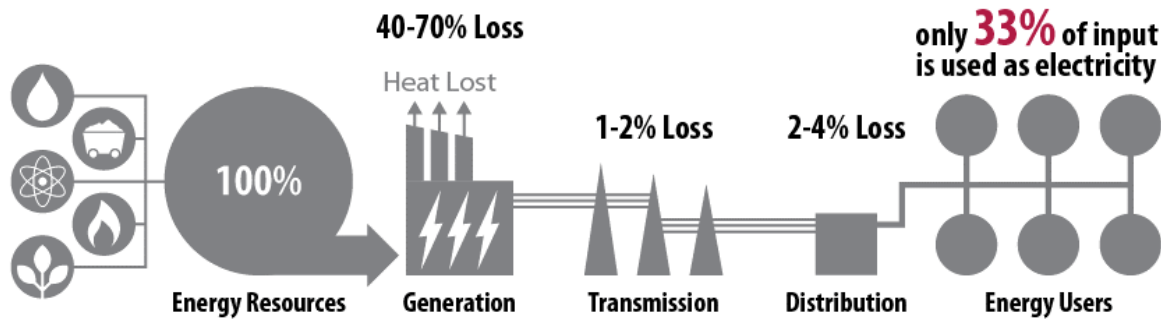


*A sustainable energy system is a smarter,
more unified and integrated energy system*

Growing Electricity Customer Options (DERs = New supply & demand paradigm)

- **Buy it:** the legacy grid & utility are no longer the only option
- **Make it:** first challenge to status quo with solar PV, wind and biogas distributed generation options
- **Eliminate it:** energy efficiency or negawatts are raising the bar with innovative solutions and goals to reduce or eliminate waste.
- **Store it:** (energy storage) emerging disruptive to change to address multiple grid services, intermittent renewables, & potentially **dispatch it** yourself
- **Shift it:** demand response or demand flexibility is evolving from a traditional solution to a flexibility tool complemented by other DERs
- **Manage it:** Microgrids, virtual power plants, smart grid, home & business management software, algorithms to help prosumer buy and sell energy when the market is favorable. New business model (**aggregate it**)
- **Sell it or share it:** the advent of transactive energy and blockchain technology advances the concept of a new energy value proposition
- **Reduce it:** No investments in overbuilt generation and fewer system losses.

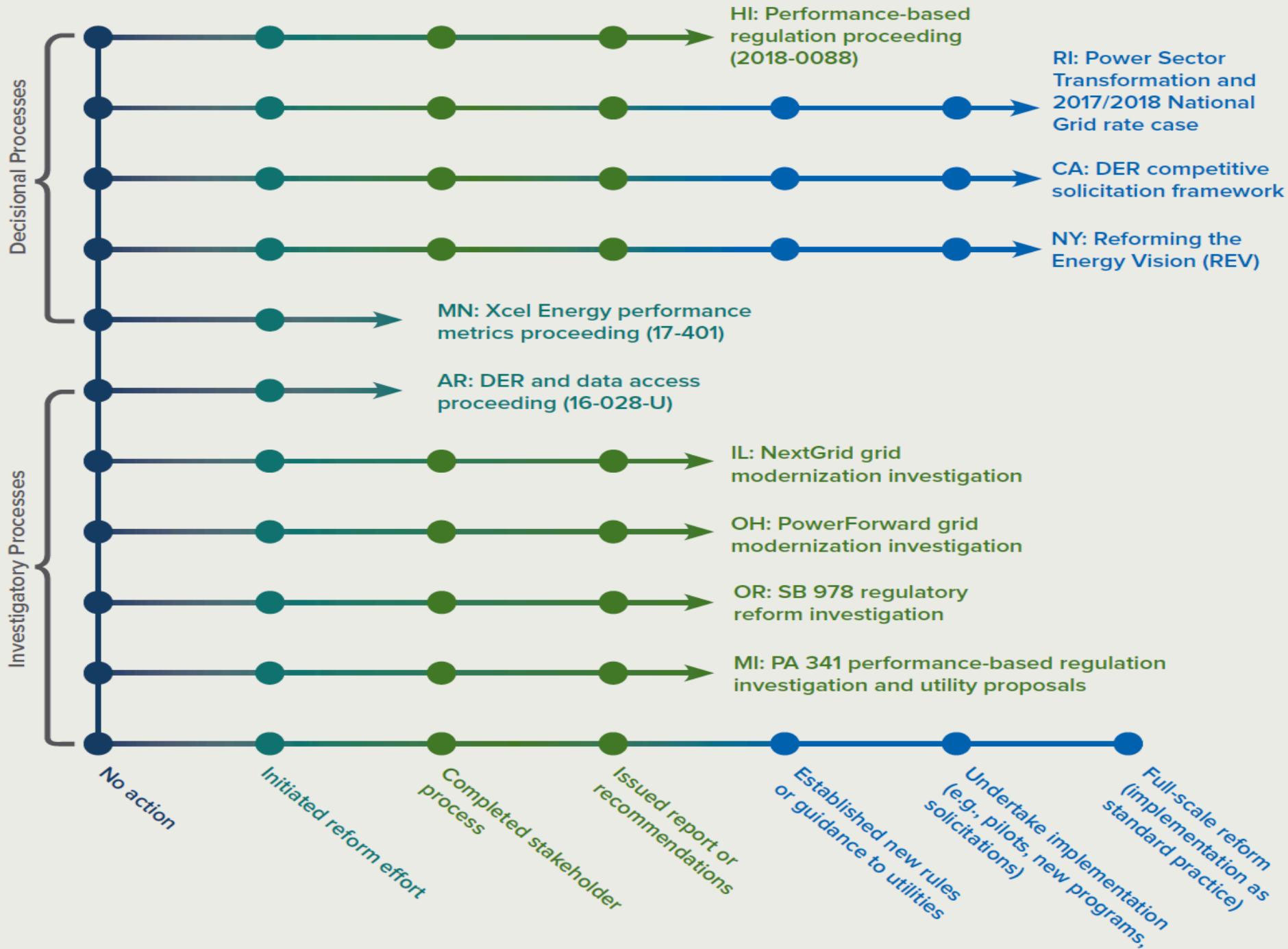
Microgrids & Advanced Distribution Networks



- Enables greater efficiency and resiliency.
- Helps address \$100B in business losses due to power disruptions.
- Deployed at hospitals, military bases, factories, more
- Offers new products and supply chains for Wisconsin's electrical equipment manufacturers.

Some key takeaways about microgrids

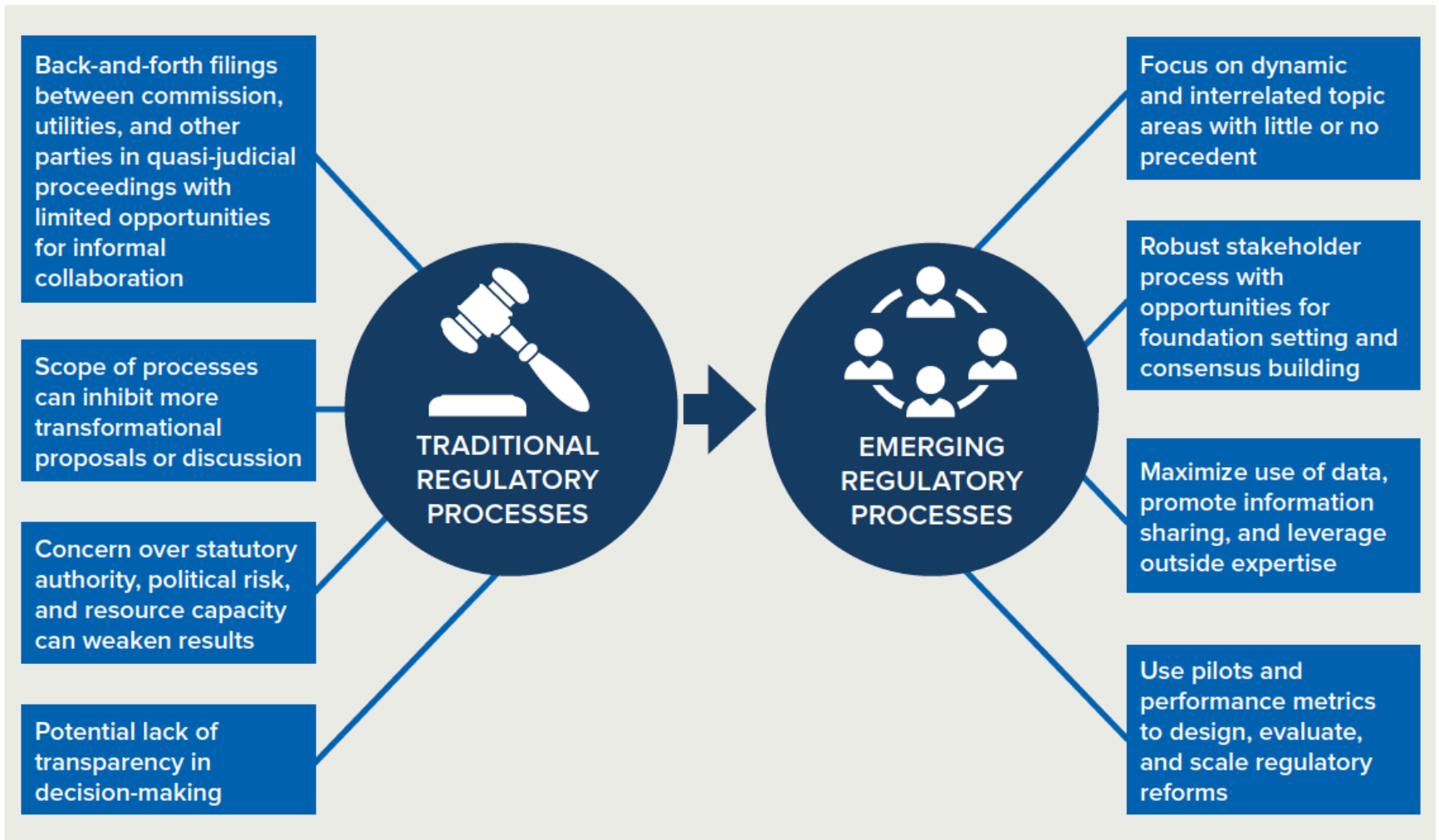
- Microgrids can island – meaning operate independently when the grid goes down (to maintain critical infrastructure).
- Microgrids enable greater system-wide efficiencies because they are located closer to aggregate loads and DERs. (Including opportunities for CHP i.e. heating).
- Microgrids utilization of smart controllers, smart inverters, sophisticated algorithms, sensors and controls, will balance intermittent generation & link with the cloud (IoT).
- Microgrids catalyze the pathway to local energy markets with connections to grid services, new value propositions and transactive energy markets. (DSO & aggregators).



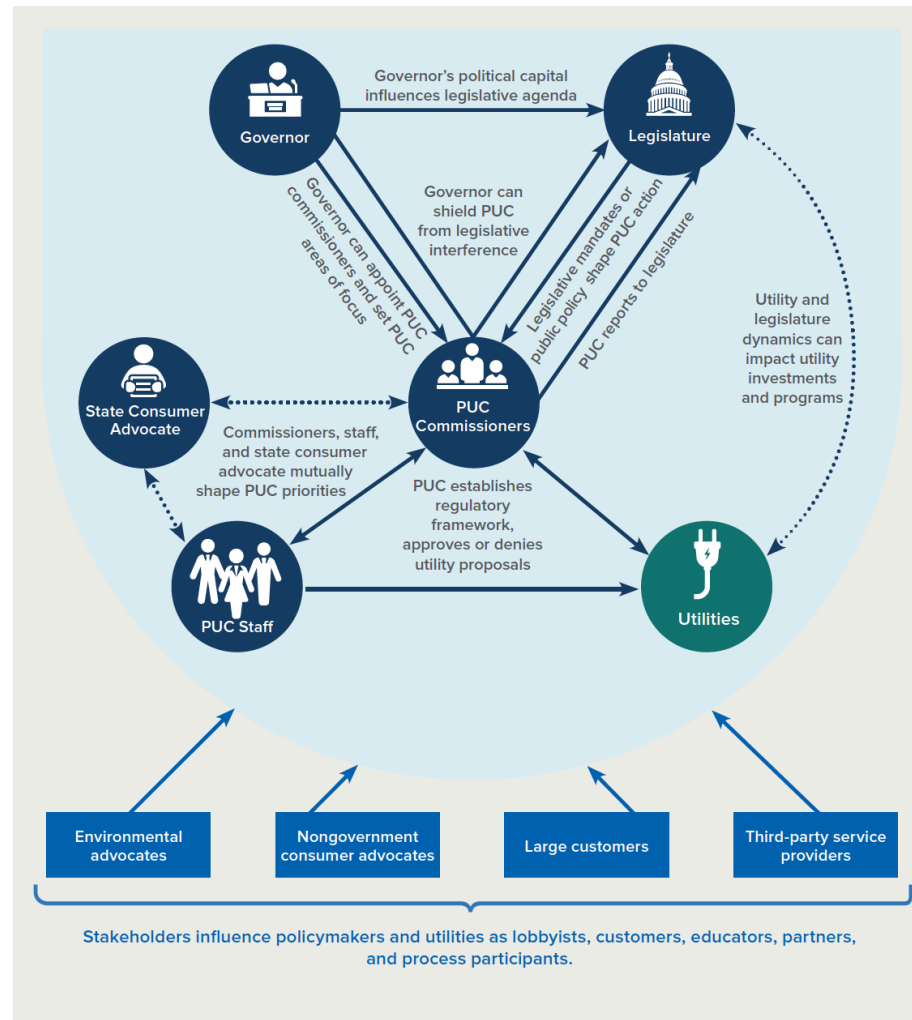
Catalysts for Reform (RMI)

- **1) Grid Modernization or System Planning:** Utilities grid modernization proposals shaped Ohio's PowerForward effort; California's incentive pilot targeted DER procurement to avoid investment in distribution upgrades.
- **2) Public Policy:** Clean energy commitments, greenhouse gas emission targets, and performance incentives in 2016 Future Energy Jobs Act shaped Illinois's NextGrid process.
- **3) Cost Concerns:** high fuel costs in Hawaii have been a major motivator for reform efforts over the years.
- **4) Catastrophic Events:** New York's Reforming the Energy Vision convened in the aftermath of Hurricane Sandy.

Regulatory Process Redesign Process



Current Stakeholder Influence Pathways

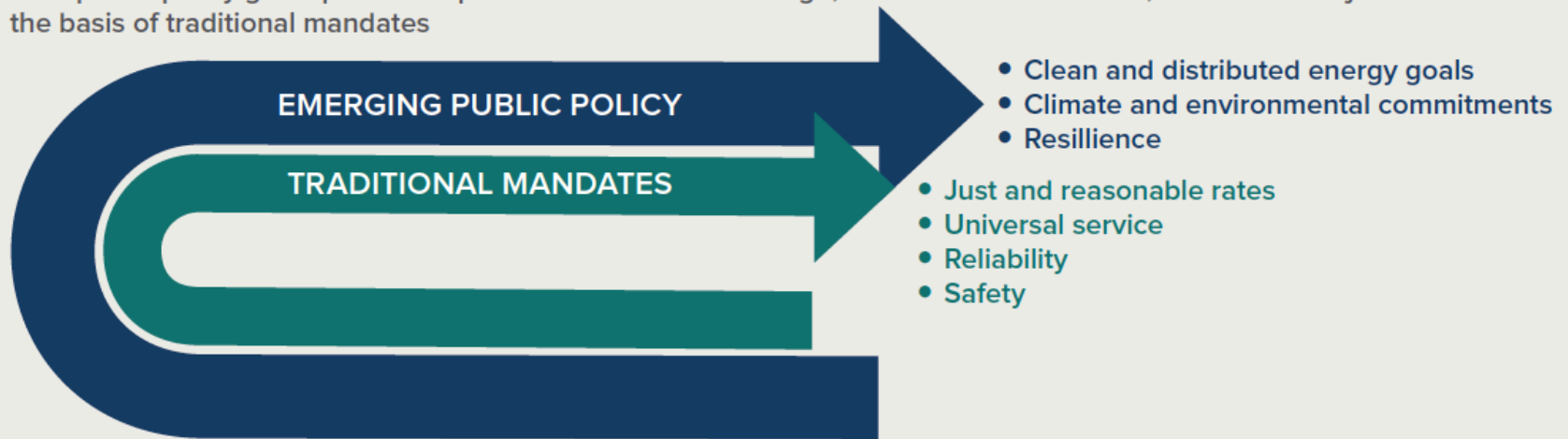


Common Goals for Reform

- **Enhancing Utility Operations**
- **Improving Customer Experience**
- **Supporting Societal Objectives**

New Policy Goals Require Design Change in Public Utility Commission Inputs (Source RMI)

New public policy goals provide important motivators for design; in the absence of those, reform can be justified on the basis of traditional mandates



Enhancing Utility Operations

- **Remedying incentives to overbuild capital under cost-of-service regulation.**
- **Improving system efficiency and reducing system costs.**
- **Improving grid reliability and resiliency.**

Improving Customer Experience

- **Reducing rates and minimizing volatility**
- **Improving customer choice and control over energy consumption**
- **The Prosumer versus the Consumer**

Supporting Societal Objectives

- **Improving information and data utilization and transparency.**
- **Addressing risk allocation across utilities, shareholders and customers.**
- **Integrating renewables and reducing carbon emissions from electricity**

Traditional & New Influencers of Process (Source: RMI)



What do you want your role to be in the 21st Century Energy System?

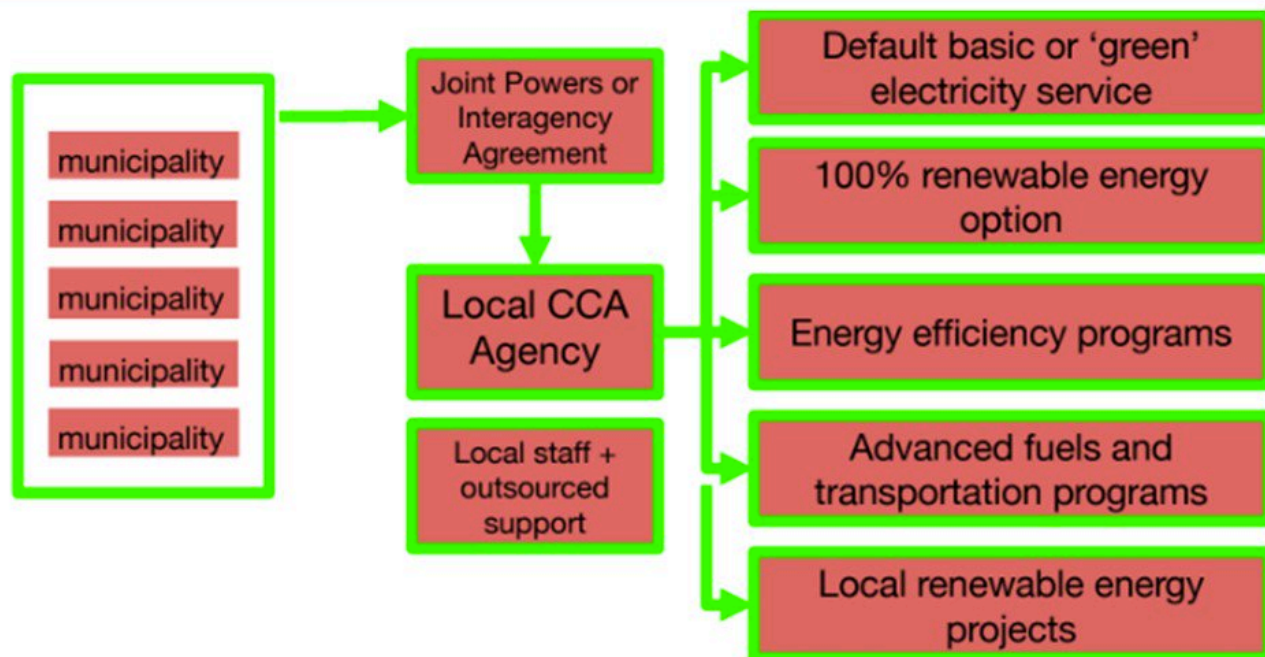
- **Do you want to be a Prosumer or a Consumer in the 21st Century Energy System?**
- **Do you want to be Serf or a Partner in the 21st Century Energy System?**
- (Thank you to Lynn Rundle for the idea)

Community Choice Aggregation

CCA 1.0



CCA 2.0/3.0



State Community Choice Aggregation

Authorized in 9 States:

- California
- Illinois
- Massachusetts
- New Hampshire*
- New Jersey
- New York
- Ohio
- Rhode Island
- Virginia*

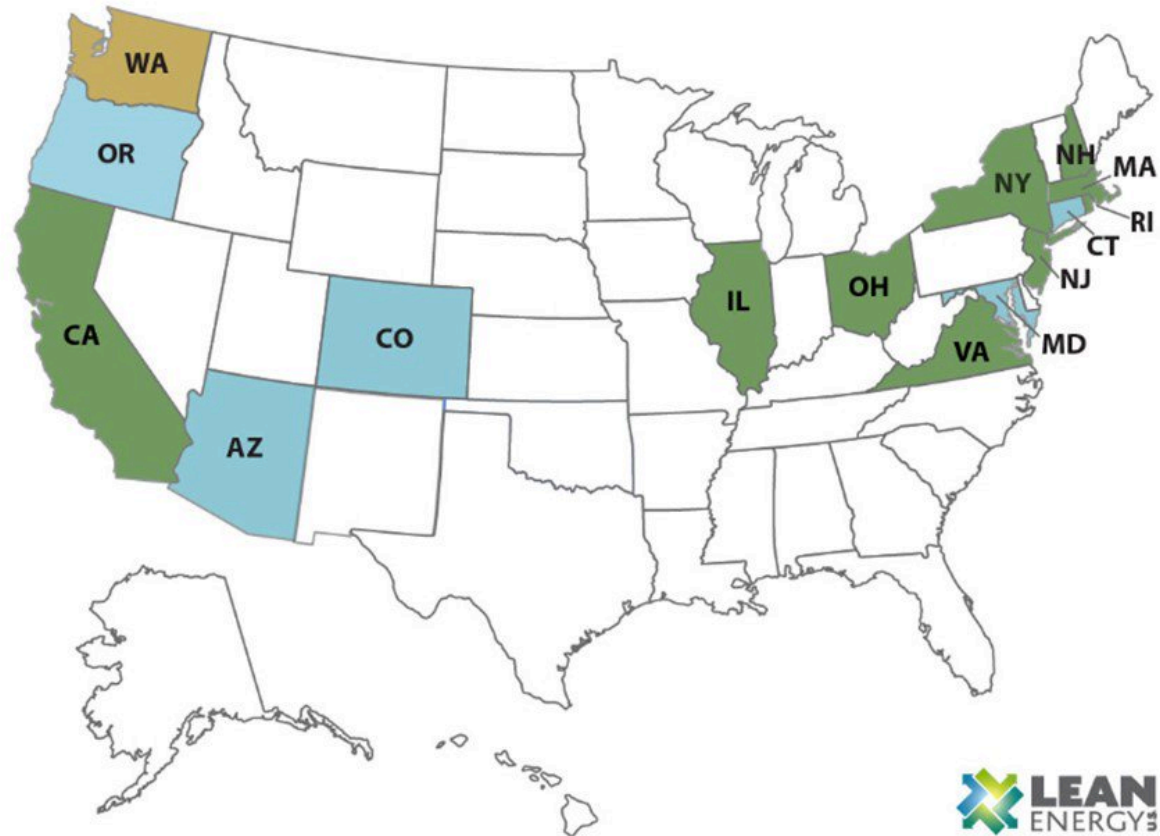
Actively Investigating:

- Arizona
- Colorado
- Connecticut
- Maryland
- Oregon

Watch List/Potential:

- Washington

* Not yet implemented



Performance Based Rates: Principles

Principles for Performance Incentive Mechanisms

PRINCIPLE 1: A performance incentive mechanism can be considered when the utility lacks an incentive (or has a disincentive) to better align utility performance with the public interest and there is evidence of underperformance or evidence that improved performance will deliver incremental benefits.

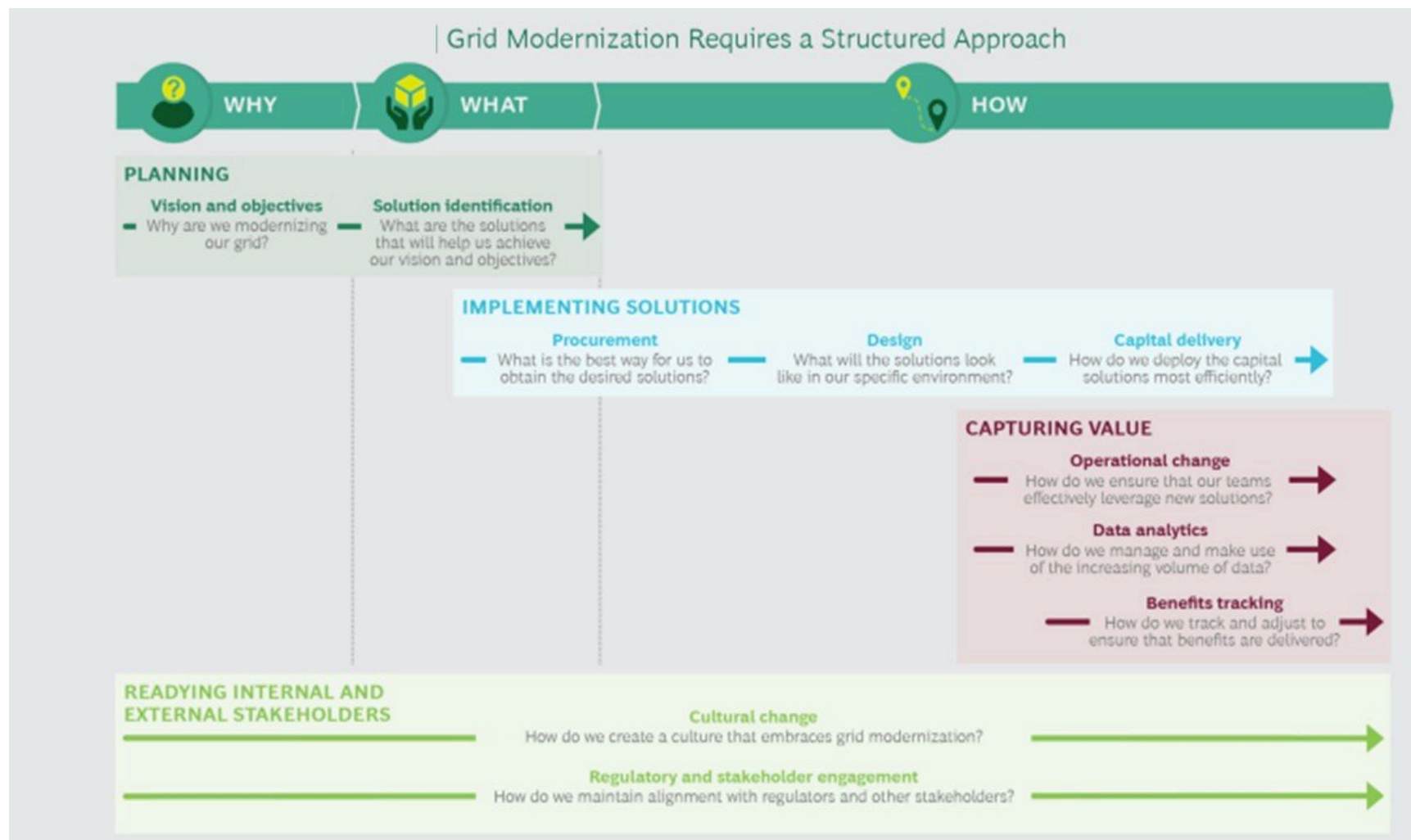
PRINCIPLE 2: Incentives should be designed to enable a comparison of the cost of achieving the target to the potential quantifiable and cash benefits.

PRINCIPLE 3: Incentives should be designed to maximize customers' share of total quantifiable, verifiable net benefits. Consideration will be given to the inherent risks and fairness of allocation of both cash and non-cash system, customer, and societal benefits.

PRINCIPLE 4: An incentive should offer the utility no more than necessary to align utility performance with the public interest.

PRINCIPLE 5: The utility should be offered the same incentive for the same benefit. No action should be rewarded more than an alternative action that produces the same benefit.

Planning for Grid Modernization



Getting Down to Brass Tacks

- (IOU) Utilities (*from their perspective*) only exist for one reason: They make money for their shareholders. They don't care for one second about the environment.
- Utility executives have a paternalist view of the world.
- “*We got this.*” “*We will fix this problem*” – whether it is clean energy or climate change – just stay away.
- **Only you can solve climate change.**
- But, working together you can change the world.
- (*You got to be in the room where it happens*).

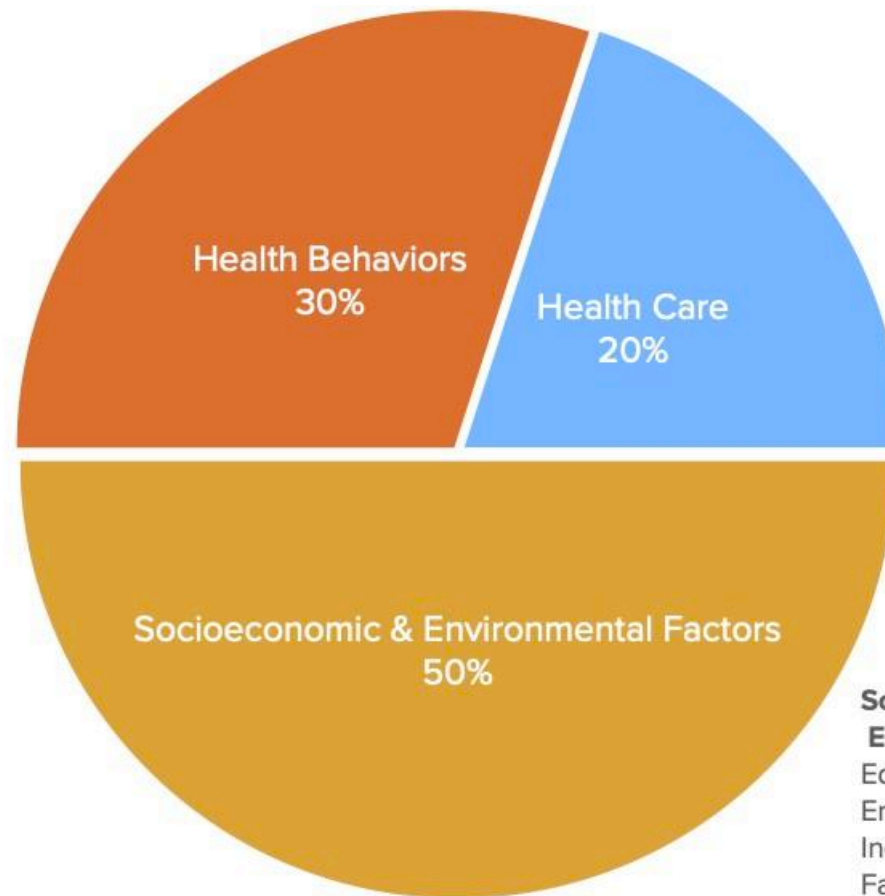
CONTACT INFORMATION

Gary Radloff, Principal
The Radloff Group
glradoff@gmail.com
608-347-9681

Energy Efficiency Can Help Address Issues Related to Health, Socio-Economic Factors (University of Wisconsin)

Health Behaviors

- Tobacco Use
- Diet & Exercise
- Alcohol & Drug Use
- Sexual Health



Health Care

- Access to Care
- Quality of Care

Socioeconomic & Environmental Factors
50%

Socioeconomic & Environmental Factors

- Education
- Employment
- Income
- Family & Social Support
- Community Safety
- Air and Water Quality
- Housing & Transit

Hawaii Performance Based Rates

Draft of 05/2019 Proposal

Revenue Adjustment Mechanisms	
Multiyear Rate Plan (MRP) with Indexed Revenue Adjustment	5-Year Control Period with Externally-indexed Revenue Adjustment allowing interim revenue changes pursuant to an indexed formula: Annual Revenue Adjustment = (Inflation) - (X-Factor) + (Z-Factor) - Customer Dividend
Earnings Sharing Mechanism (ESM)	Apply an ESM that provides both “upside” and “downside” sharing of earnings between the utility and customers when earnings fall outside a Commission-approved range
Major Project Interim Recovery (MPIR)	Examine the MPIR adjustment mechanism to determine how it can continue to provide relief for appropriate major projects during the MRP consistent with other approved PBR objectives and mechanisms
Revenue Decoupling and Existing Cost Trackers	Continue to utilize revenue decoupling (i.e., the Revenue Balancing Account) to true up revenues to an annual revenue target, and existing cost tracking mechanisms (e.g. PPAC, ECRC, etc.) to track and recover certain approved costs
Off-Ramps	Develop off-ramp mechanisms to provide for review of approved PBR mechanisms, pursuant to specified circumstances or conditions
Performance Mechanisms	
Performance Incentive Mechanisms (PIMs)	Implement a set of PIMs designed to help drive achievement of the following priority outcomes: <i>Interconnection Experience; Customer Engagement; and DER Asset Effectiveness</i>
Shared Savings Mechanisms	Develop shared savings mechanisms to address priority outcomes including <i>Grid Investment Efficiency and Cost Control</i> , mitigate capex bias, and reward pursuit of cost effective solutions to meet customer needs
Scorecards and Reported Metrics	Publish Scorecards with targeted performance levels to track progress against the priority outcomes of <i>Interconnection Experience, Customer Engagement, Cost Control, and GHG Reduction</i> and utilize Reported Metrics to highlight performance on the priority outcomes of <i>Affordability, Customer Equity, Electrification of Transportation, Capital Formation, and Resilience</i>

Energy Democracy Redux: Steps toward putting the “public” back in public utility

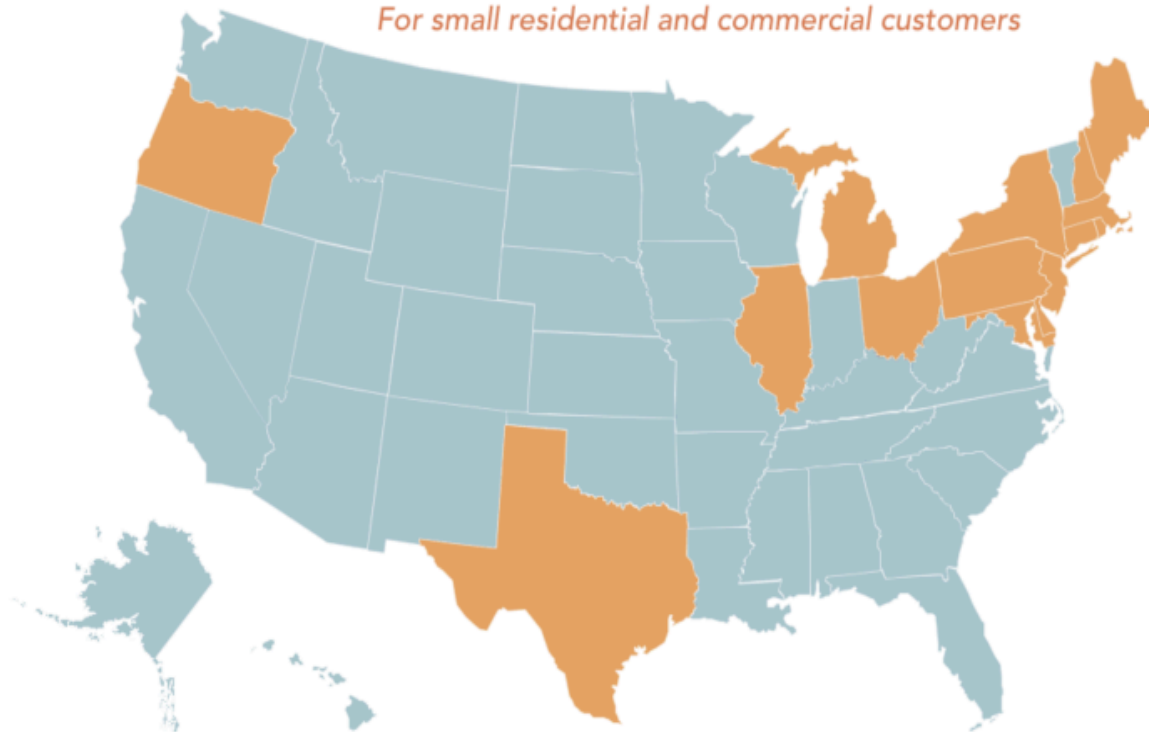
- Restore the working concept of “public utility” that to make an effective and efficient transition to a new energy economy.
- A public utility is an “undertaking” a rethinking of public goals and private industry toward a common sustainable solution. (i.e., We are in this together).
- Utilities can no longer look at the public as a obstacle, but rather as a source of promise.
- Likewise, the public can no longer see utilities as a obstacle to markets and innovation that could secure a low-carbon energy future.
- An “instrument of the commonwealth” must be built into the notion of a public utility. It can remain a business with shareholders and profits, but only after a refocusing on sustainability and the public good.

(see: *Boyd, William. (2014). Public Utility and the Low-Carbon Future. UCLA Law Review. 61 UCLA L.Rev. 1614 (2014).*

States with deregulated markets

STATUS OF STATE ELECTRICITY MARKETS

For small residential and commercial customers

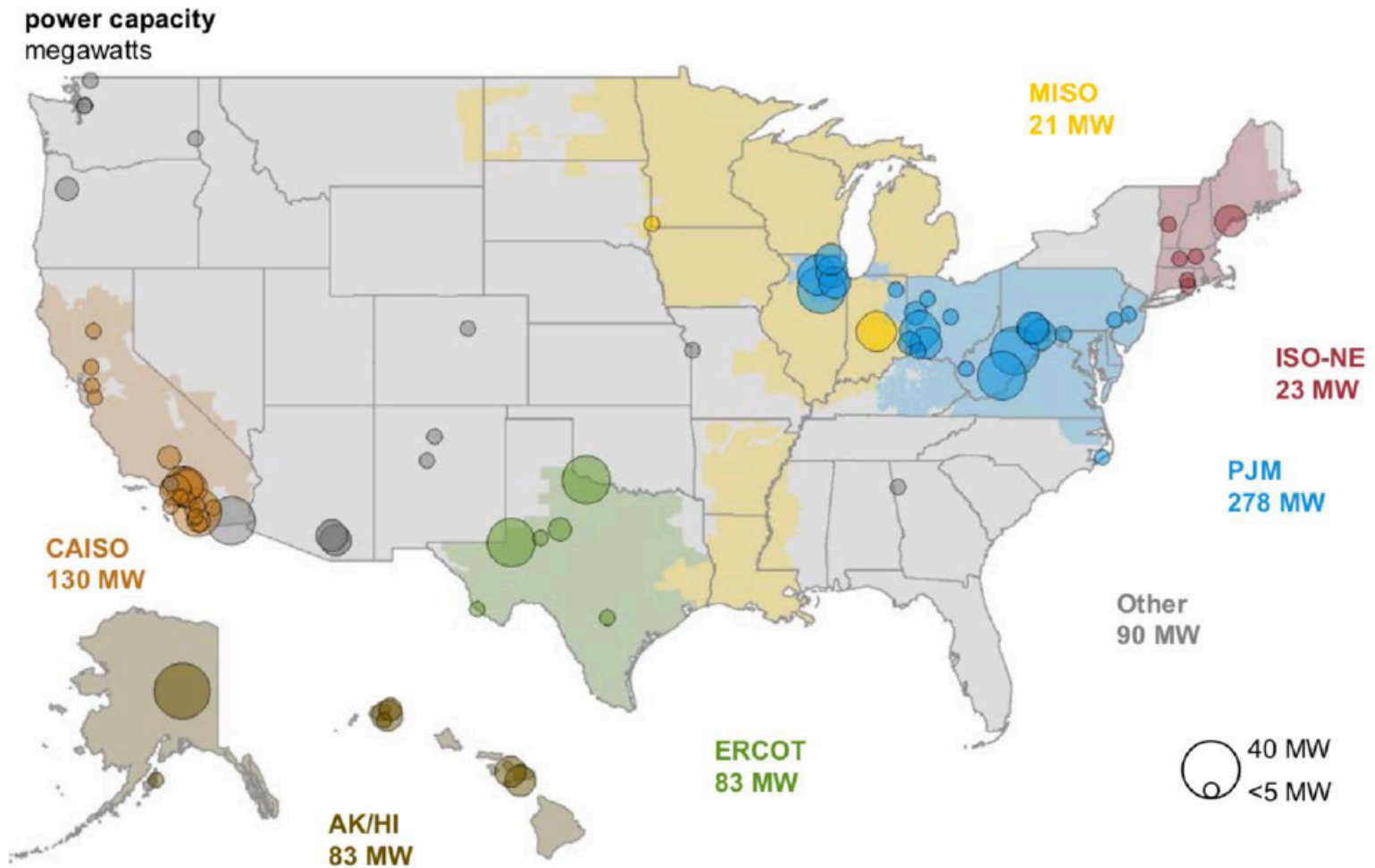


-  Deregulated (15)
-  Regulated (35)

Energy Storage (2017)

(Synapse Energy Economic Colorado Study 2019)

Figure 9. U.S. large scale battery storage installations by region (2017)

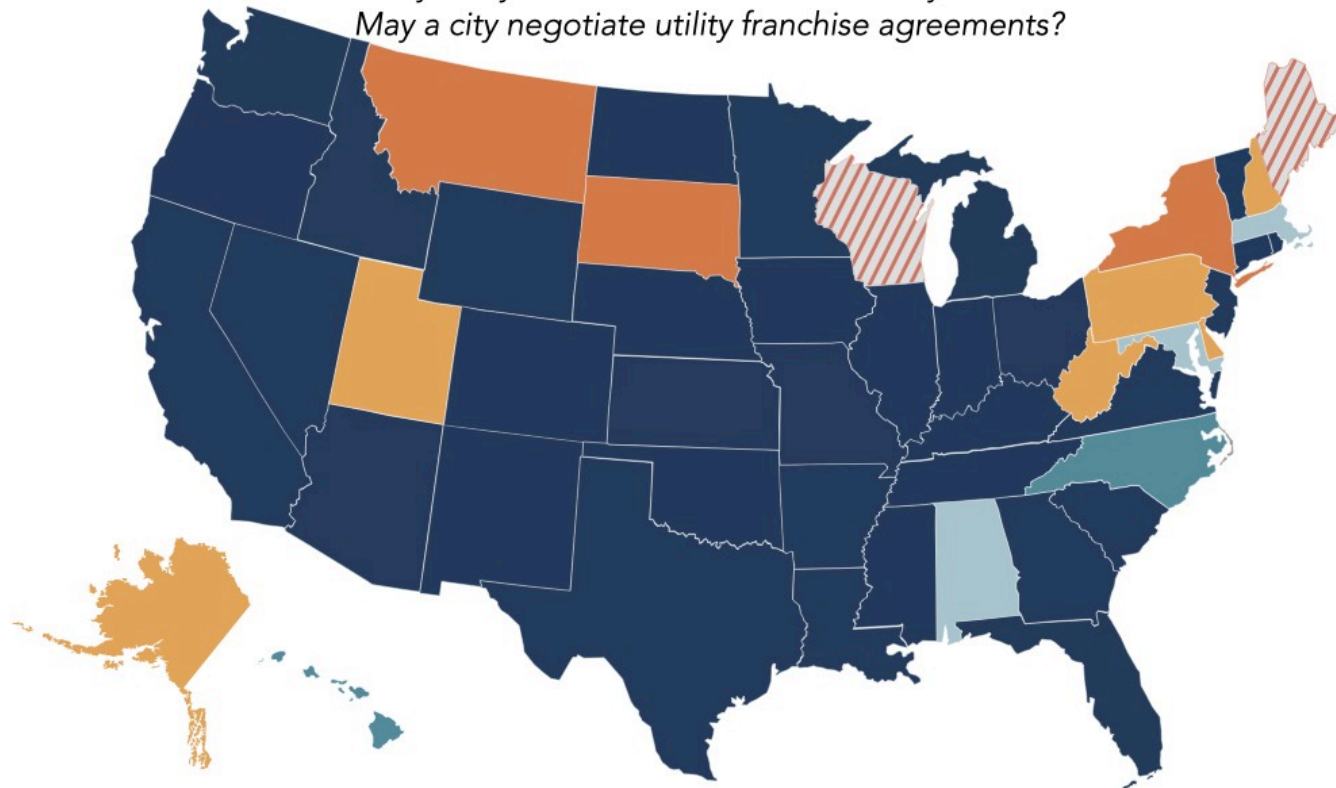


Wisconsin is one of only two states that prohibits franchise agreements with utilities or collecting fees on electric bills

UTILITY FRANCHISE AUTHORITY

May a city collect a fee on electric utility bills?

May a city negotiate utility franchise agreements?



State Distribution Planning

(Source: DOE)

	States with advanced practices					Other state approaches										
	California	Hawaii	Massachusetts	Minnesota	New York	D.C.	Florida	Illinois	Indiana	Maryland	Michigan	Ohio	Oregon	Pennsylvania	Rhode Island	Washington
Statutory requirement for long-term distribution plans or grid modernization plans ^(a)	✓			✓					✓							
Commission requirement for long-term distribution plans or grid modernization plans ^(a)		✓	✓		✓					✓	✓					
No planning requirements yet, but proceeding underway or planned						✓							✓		✓	✓
Voluntary filing of grid modernization plans								✓				✓		✓		
Non-wires alternatives analysis and procurement requirements	✓				✓										✓	
Hosting capacity analysis requirements	✓	✓		✓	✓											
Locational net benefits analysis required	✓				✓											
Smart grid plans required													✓			
Required reporting on poor-performing circuits and improvement plans							✓	✓				✓		✓	✓	
Storm hardening requirements							✓			✓						
Investigation into DER markets		✓														

(a) For one or more utilities.

Third Distributed Evolution: Value is the key in transactive energy markets

**TRANSACTIONAL
ENERGY
SIMPLIFIED**

A system of economic and control mechanisms that allows the dynamic balance of supply and demand across the entire electrical infrastructure using value as a key operational parameter.

Source: Burns & McDonnell, 2019



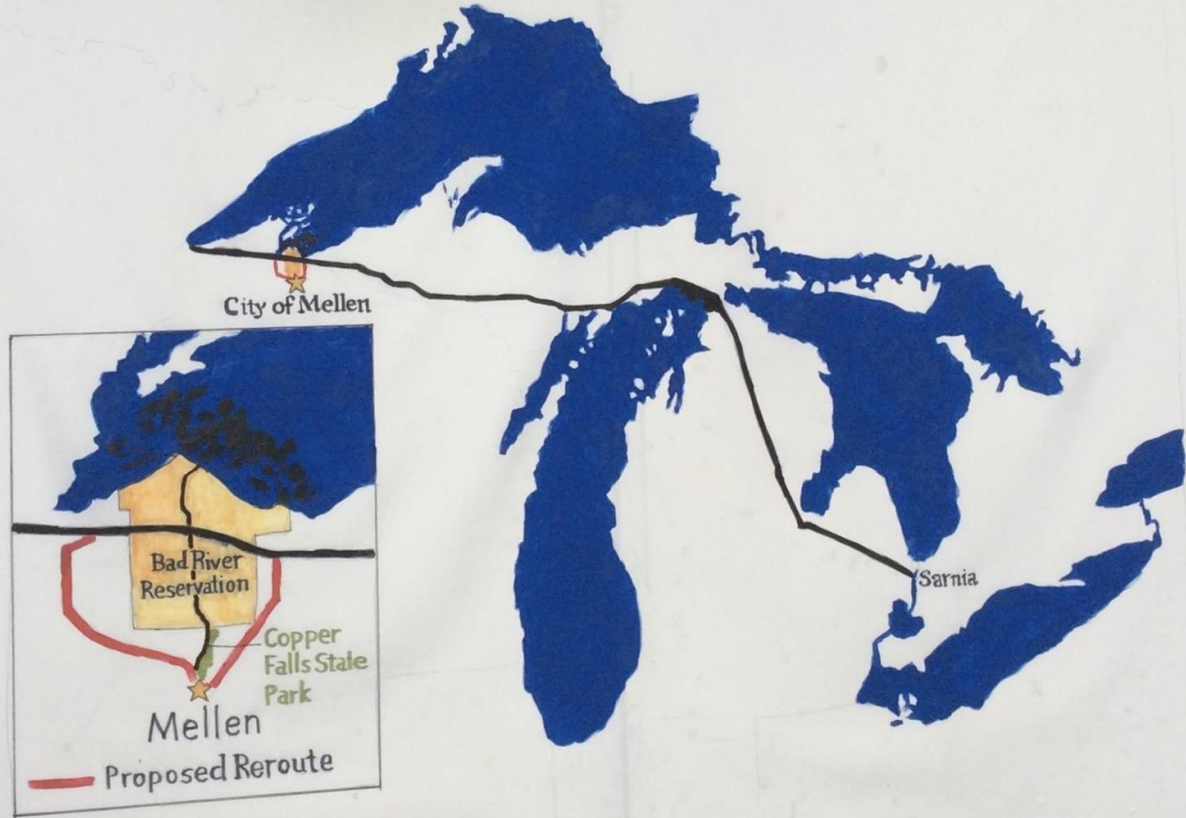
Governor's Task Force on Climate Change

- Remaining virtual Listening Sessions:
 - July 7, 6:00 – 8:00 pm
 - July 9, 6:00 – 8:00 pm
 - July 15, 6:00 – 8:00 pm
- Attend & provide oral comments -- informal, easy to participate
- Submit written comments
- Check 350 Madison website and social media for more information!

Line 5 Overview

- Background on Line 5
- Take action
 - Influencing the DNR
 - Provide comments by July 11

LINE 5: People or Pipeline? WHICH SIDE ARE YOU ON?



Background on Line 5

- What is Enbridge trying to do?
 - History of Line 5
 - Bad River Band Lawsuit
 - Planned new section around the reservation
 - It's been a bad month for Enbridge
 - 350 Madison and other groups have applied to the PSC to be intervenors in the Line 5 case.







Background on Line 5

- What is Enbridge trying to do?
 - History of Line 5
 - Bad River Band Lawsuit
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Influencing the DNR

- How does a pipeline company get permission to build in Wisconsin?
 - Construction permits, including wetlands and waterways
- What does it take to get the Department of Natural Resources (DNR) to deny a permit?
 - Pressure on decision-makers
 - Facts and science for them to cite
- Hearing on July 1
 - Wetlands and Waterways permit
 - Scoping for Environmental Impact Statement (EIS)
- Written comments by July 11



WAOW.COM
WE'VE GOT YOU COVERED

Proposed pipeline move brings large response in DNR hearing

July 1, 2020 9:43 pm Tom Lally



WISCONSIN
PUBLIC RADIO

'We Are On The Brink Of Disaster': Public Testifies On Proposed Pipeline Reroute

Public Provides Input On Project's Impact To Pristine Water Resources

By Danielle Kaeding

Published: Wednesday, July 1, 2020, 6:00pm

milwaukee
journal sentinel

'It could rise to the level of Standing Rock': Wisconsinites push back against oil pipeline reroute

Laura Schulte Milwaukee Journal Sentinel

Published 12:48 p.m. CT Jul. 2, 2020

WISCONSIN
STATE **JOURNAL**

Northern Wisconsin oil pipeline reroute panned in public hearing; opponents say risk to water, climate too great

Chris Hubbuch | Wisconsin State Journal Jul 2, 2020

Facts are good AND we need passion and numbers to win!

Actionar: Sending a Comment to DNR

- To send a comment to the DNR, go to www.tinyurl.com/CommentLine5DNR
- We invite you to join us and submit your comments now!
- All comments must be delivered or postmarked no later than July 11, 2020.

Possible talking points for comments

- Respect Indigenous Sovereignty
- Save the wetlands/streams
- Protect Lake Superior
- No new fossil fuels
- Damage and risks to water
 - Rivers & Streams, Wetlands, Artesians/Wells
 - Floods
 - Kakagon Sloughs/Wild Rice
 - Copper Falls State Park, Copper Falls Aquifer
 - Water is all connected in the watershed!
- Damage and risks to the economy
- Project details

How do I pick what to write about?

- What is closest to your heart and soul?
- How does the subject connect to my specific concern?

Send a Comment to DNR by July 11

- Best way to send a comment to the DNR, go to www.tinyurl.com/CommentLine5DNR
- Or, send an email comment to DNROEEACOMMENTS@WI.GOV
- Or send by mail to:
Line 5 Comments, DNR (EA/7),
101 South Webster Street,
Madison, WI 53707.
- All comments must be delivered or postmarked by July 11, 2020.

Live Tweet / Facebook with us!

#ShutDownLine5

- Tag us! @350Madison and @SierraClubWI
- Tag DNR and Governor Evers! @WDNR and @GovEvers

Updates from Gail (Board President)

- Get Out the Vote (GOTV) for November Elections
 - Volunteer for GOTV Steering Committee
 - For more information: Gail.Nordheim@350madison.org
- New Volunteer Coordinator--Nikki Darga

Contact Nikki (VolunteerCoordinator@350madison.org) if you'd like to learn more about volunteering with 350

- Seeking an IT "Help Desk" Volunteer
 - Answer user questions, provide basic orientation to applications
 - For one or more of the following:
 - Google Suites for Nonprofits,
 - Zoom
 - Salsa Engage CRM
 - For more information, VolunteerCoordinator@350madison.org

Fundraising Updates from Stephanie

- Monthly Sustainer drive.
- Join the fundraising team.
 - Looking for virtual event planners.
 - Next meeting TBD.
 - For info, email stephanie.robinson@350madison.org.

Come to team meeting!

Divest & Defund Team

The Divest & Defund Team works to convince institutions that investments in fossil fuels are not only ethically and fiscally irresponsible, but are literally wrecking the planet we call home—all for profit. We are currently focusing on banks that fund pipeline projects.

Meeting: Wednesday July 8 at 6 pm, to plan actions to get Chase Bank to stop funding pipelines/fossil fuels.

Contact Divest.defund@350madison.org

Community Climate Solutions Team (CCST)

Community Climate Solutions focuses on making change across Dane County, targeting both systems and individual levels. We assist local governments to achieve climate goals. We broaden and deepen citizen climate crisis awareness and action.

Meeting: Thursday July 16, 4:30-6:30 pm, to orient newcomers and coordinate working groups.

Contact susan.millar@350Madion.org.

Come to a team meeting, continued!

Tar Sands Team

The Tar Sands Campaign is fighting Enbridge tar sands pipelines in WI. Our aims are to block expansion of Line 61 and to halt plans for an adjacent Line 66. We support efforts led by those most impacted, including tribes, landowners, and affected community members

Meeting: Monday August 3, 5:45 to 6:45 p.m, to plan further work to stop pipelines.

Contact phyllis.hasbrouck@350Madison.org.

Climate Justice Working Group meeting.

2nd meeting on “Me and White Supremacy” by Layla Saad.

Last chance to join for this round.

Monday July 20, 5:30-7 pm.

Contact mhfredal@gmail.com to learn how to prepare for that meeting.

Come to a Team Meeting, continued

Monthly Meeting team meeting,

To plan meetings in August, September, etc.

Monday July 13 at 6:45 pm.

Contact julia.isaacs@350madison.org

Meeting Each Other in Zoom Breakouts

Share your name and how involved with 350 Madison

Chat about whatever you want. Possible questions:

1. How are you?
2. What moves you to take action for the climate?
3. How do you see yourself taking taking action for the climate this summer?
4. How is your climate activism affected by the pandemic and the Black Lives Matter uprisings?