WISCONSIN ROADMAP TO NET ZERO BY 2050
MREA ENERGY FAIR – SUNDAY JUNE 25, 2023
ANDREW KELL – POLICY DIRECTOR, RENEW WISCONSIN
THANK YOU MREA FOR ENERGY FAIR DIALOG OPPORTUNITIES!

- **Yesterday: Rise Up! Live Podcast**
  - ... study technical results

- **Right Now: Zero Carbon by 2050 – A Path for Wisconsin workshop**
  - ... policy implementation

- **Sunday 10:30am (Main Stage): Rise Up! Live Panel Discussion** on clean energy issues
  - Stop by RENEW’s table for more info!

RENEW WISCONSIN PRESENTATION

6/25/2023
OUR ROADMAP FOR TODAY’S WORKSHOP

- How the study came to be
- Overview of modeling results
- Planning and policies needed for zero carbon transmission
- Q&A
HOW WI ZERO CARBON STUDY CAME TO BE
# Modeling Approach

## Scenarios Investigated

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
<th>What are we investigating?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>No electricity or emissions policy, the way we consume energy remains similar to today</td>
<td>Setting a useful point of comparison to other scenarios</td>
</tr>
<tr>
<td><strong>100% Clean Electricity</strong></td>
<td>Reaching 100% clean electricity but no economy-wide emissions policy</td>
<td>What is the cost and impact on emissions of taking action only in electricity?</td>
</tr>
<tr>
<td><strong>Net Zero Economy-Wide</strong></td>
<td>100% clean electricity and economy-wide emissions policy. Aggressive electrification and efficiency of demand side energy consumption</td>
<td>With all resource options on the table, what is a least cost path to net zero in 2050 and what does the investment strategy look like?</td>
</tr>
<tr>
<td><strong>No Transmission Expansion</strong></td>
<td>Transmission paths to other states cannot be expanded to access more out of state energy</td>
<td>How impactful is transmission expansion on overall costs and In State investments?</td>
</tr>
<tr>
<td><strong>Accelerated Clean Electricity</strong></td>
<td>Economy-wide emissions target and pushing to 100% clean electricity by 2040</td>
<td>How much more would it cost to push to 100% clean electricity faster?</td>
</tr>
<tr>
<td><strong>Delayed Action</strong></td>
<td>Delayed demand-side transformation, 15 years slower than Net Zero Economy-Wide</td>
<td>How important is pushing demand-side transformation on overall costs?</td>
</tr>
<tr>
<td><strong>Limited Coal and Gas</strong></td>
<td>No new gas, and coal retired by 2030</td>
<td>If near-term policy retired coal and prevented new gas investments what would be the impact?</td>
</tr>
</tbody>
</table>
SNAPSHOT OF RESULTS

- Electrification of most uses across sectors leads to dramatic load growth
  - 166% load growth 2022-2050

- Requires unprecedented resource development
  - About 4x as much gen capacity compared to today
  - Much additional transmission;
    - 6 GW interties each from MN, IA, IL
A DIVERSE CLEAN PORTFOLIO FOR WISCONSIN BY 2050

NET ZERO ECONOMY WIDE CAPACITY BY 2050 (IN GW)

- Solar (28.3)
- Wind (21.1)
- Imported Solar (9.3)
- Clean Gas (7.2)
- Storage (6.8)
- Imported Wind (6.3)
- Dual Fuel Boilers (5.5)
- Rooftop Solar (4.5)
- Hydrogen (2.8)
- Nuclear/Hydro/Other (1.0)

*Most of these resources would be behind the customer’s meter.*
# Costs & Benefits at a Glance

<table>
<thead>
<tr>
<th>Net Present Value of Investments</th>
<th>Health &amp; Economic Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total direct investment costs:</strong></td>
<td></td>
</tr>
<tr>
<td>$111.1 billion</td>
<td>$2 to $4.4 billion in avoided healthcare costs in 2050,</td>
</tr>
<tr>
<td>• Utility investments (Gen, Transmission, Batteries, etc.)</td>
<td><strong>28 to 63 fewer deaths per million</strong> people from air pollution by 2050</td>
</tr>
<tr>
<td>• Consumer investments (EVs, heat pumps, etc.)</td>
<td></td>
</tr>
<tr>
<td><strong>Total direct benefits (avoided fuel):</strong></td>
<td></td>
</tr>
<tr>
<td>$110.6 billion</td>
<td><strong>3% growth in WI GSP</strong> by 2050, Adding $16 billion to WI's economy</td>
</tr>
<tr>
<td>• Utility avoided fuels (coal, fossil gas)</td>
<td><strong>68,000 additional WI jobs</strong></td>
</tr>
<tr>
<td>• Consumer avoided fuels (gasoline, fossil gas)</td>
<td><strong>Lower energy costs</strong> for WI residents</td>
</tr>
</tbody>
</table>
PREVIEW OF WISCONSIN POLICIES NEEDED FOR ZERO CARBON TRANSITION

ASSOCIATED POLICY

Require independent economic analyses of each coal power plant to understand optimal retirement dates.

Pass legislation requiring a formal Integrated Resource Planning process developed by the PSC.

Complete revisions of PSC Admin Code 119 (Interconnection Rules) and develop a Performance Incentive Mechanism to support interconnection requests.
POLICIES NEEDED CONTINUED…

ASSOCIATED POLICY

Clarify, in ongoing or future dockets, that third-party financing of renewable resources is allowed under Wisconsin law, and require uniform standardized contracts for Qualifying Facilities.

Create and implement consistent net metering tariffs across utilities that support the integration of customer-sited renewable resources. The PSC should also clarify eligibility for ‘submetering’ that allows owners of multifamily buildings to install clean energy resources for the benefit of all renters within those buildings.

The state legislature should also pass Community Solar legislation and codify the legality of third-party charging of EVs.

Pass legislation that doubles the funding for the statewide Focus on Energy program.
POLICIES OF FOCUS FOR TODAY

- Integrated Resource Planning (IRP)
- Community Solar
- Third-party Financing
- Net Metering
INTEGRATED RESOURCE PLAN (IRP)

- State utility planning for many regulated states: neighbors...
  - Minnesota
  - Michigan
- Look at utility plans holistically, w/ stakeholder input
- Wisconsin now has Strategic Energy Assessment (SEA)
- IRP was part of Gov. Evers budget proposal
COMMUNITY SOLAR

- Small solar project within a community
- Multiple people & biz can participate
- Subscribe, pay developer, receive bill credits
COMMUNITY SOLAR PROPOSED LEGISLATION

- Assembly Bill 258
- Senate Bill 226
- Only 5 Investor Owned Utilities
- Each project limited to 5 MW
- Option for those can’t put solar on rooftop
THIRD PARTY FINANCING BASICS

- Also called Third Party Ownership
- Lease for rooftop solar
- ‘Pay as you save’ contract
- Perfect for...
  - Low-to-Middle Income
  - Non-profit & local gov
  - Places of worship & small biz
WISCONSIN THIRD PARTY STATUS

- Clearly allowed in IL, MI, IA
- Wisconsin utilities denying interconnections
- Legislative inaction
- PSC ‘case-by-case’ decision
- Likely to go to WI Supreme Court?
NET METERING IN WISCONSIN

- No law, statute, or rule in Wisconsin
- PSC set utility precedent for adoption with order in 1980s
- Current ‘patchwork’ of utility tariffs with some form of net metering
- Cadmus ‘PV Potential Study’ outlined importance of net metering (next slide)
CADMUS 2021 ‘ROOFTOP SOLAR POTENTIAL’ STUDY
NET METERING CURRENT STATUS

- PSC opened generic ‘parallel generation’ investigation 3 years ago
- Net metering summarized, but not addressed, in investigation
- Utilities recently submitted proposals in rate cases to phase-out (MGE) or replace (Alliant) net metering
- PSC decisions this fall may set new precedent
DISCUSSION AND Q&A