

RENEWABLE ENERGY MARKETS PANEL DISCUSSION

INTERACTIONS BETWEEN STATE COMPLIANCE AND VOLUNTARY MARKETS



Todd Bianco

Chief Economic and Policy Analyst,
RI PUC



Erin Eckenrod

AES Clean Energy



Rebekah de la Mora

NC Clean Energy
Technology Center



Caroline Gentry

Director of Environmental Markets,
Nodal Exchange

Wednesday, Sept. 20 • 11:00 AM-12:00 PM



**Renewable Energy
Markets™ 2023**



NC CLEAN ENERGY

TECHNOLOGY CENTER

State Requirements for Clean Energy

Interaction Between State Compliance and Voluntary Markets

Rebekah de la Mora

CRS Renewable Energy Markets

September 20, 2023

Our Mission

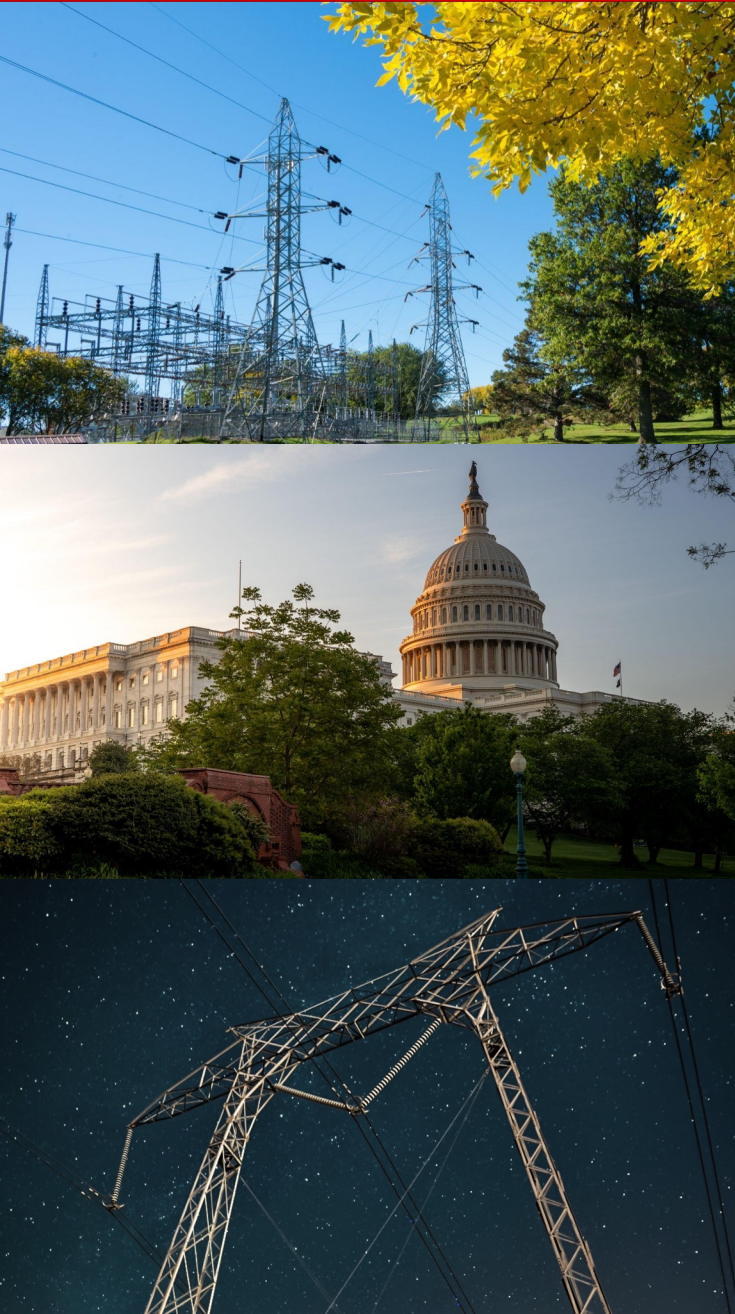
The N.C. Clean Energy Technology Center at N.C. State University advances a sustainable energy economy by educating, demonstrating, and providing support for clean energy technologies, practices, and policies.

For over 35 years, the Center has worked closely with partners in government, industry, academia and the non-profit community.

Our Work

- Energy Policy
- Clean Energy Training
- Clean Transportation
- Clean Power & Industrial Efficiency
- Renewable Energy



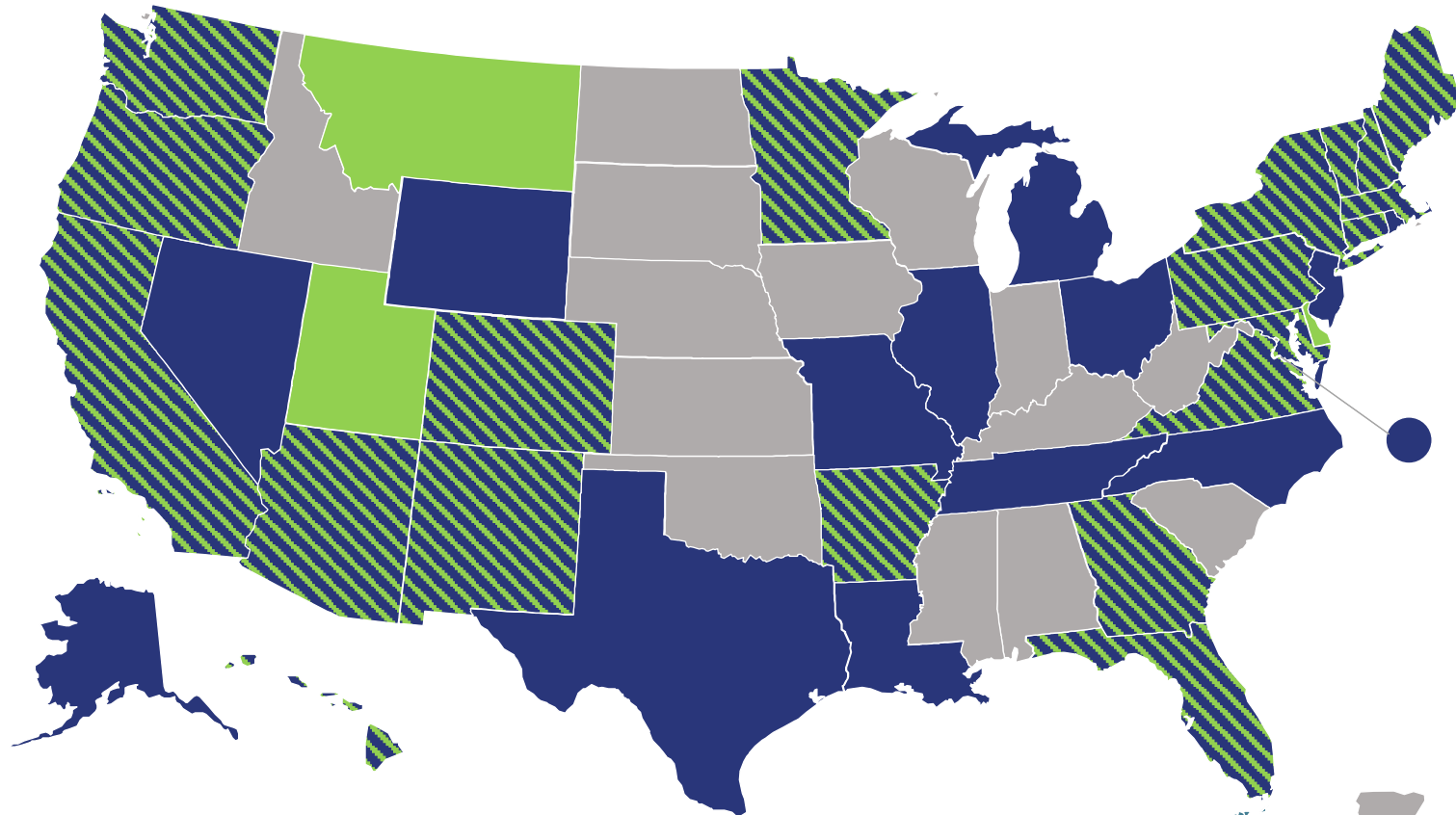


Energy Policy & Markets

The Center conducts objective research and analysis and provides education and technical assistance on energy policy issues nationwide. Our Policy Team tracks developments and examines the impacts on clean energy technologies. Projects include:

- Database of State Incentives for Renewables & Efficiency (DSIRE)
- DSIRE Insight
- The 50 States Reports
- Customized research & analysis

H1 2023 Action on Power Decarbonization Requirements



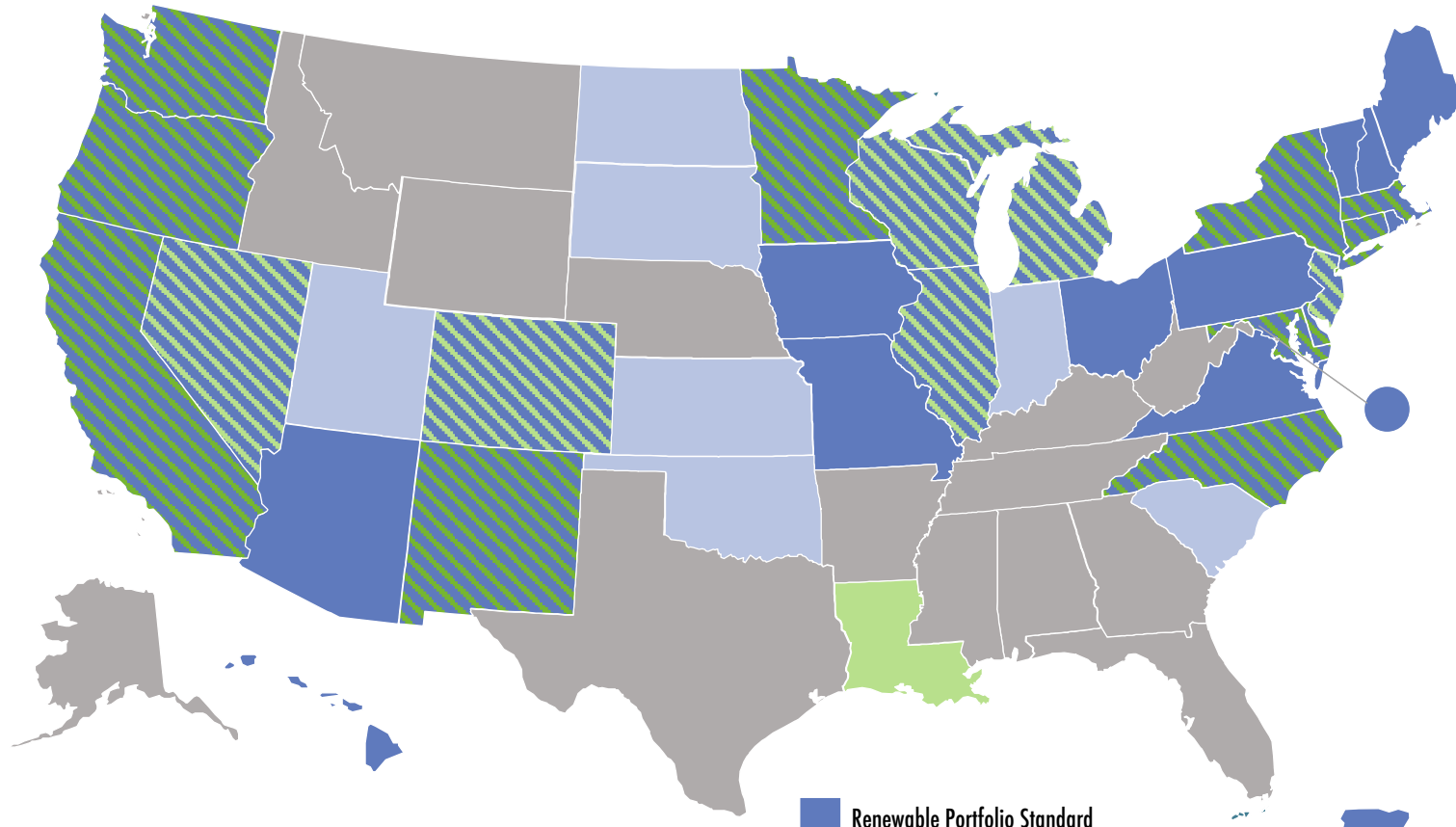
- H1 2023 action on clean energy targets
- H1 2023 action on emissions targets and carbon policies
- No H1 2023 action

33 States + DC took action on Clean Energy Targets
23 States took action on Emission Targets and Carbon Policies

H1 2023 Major Actions on Power Decarbonization Requirements

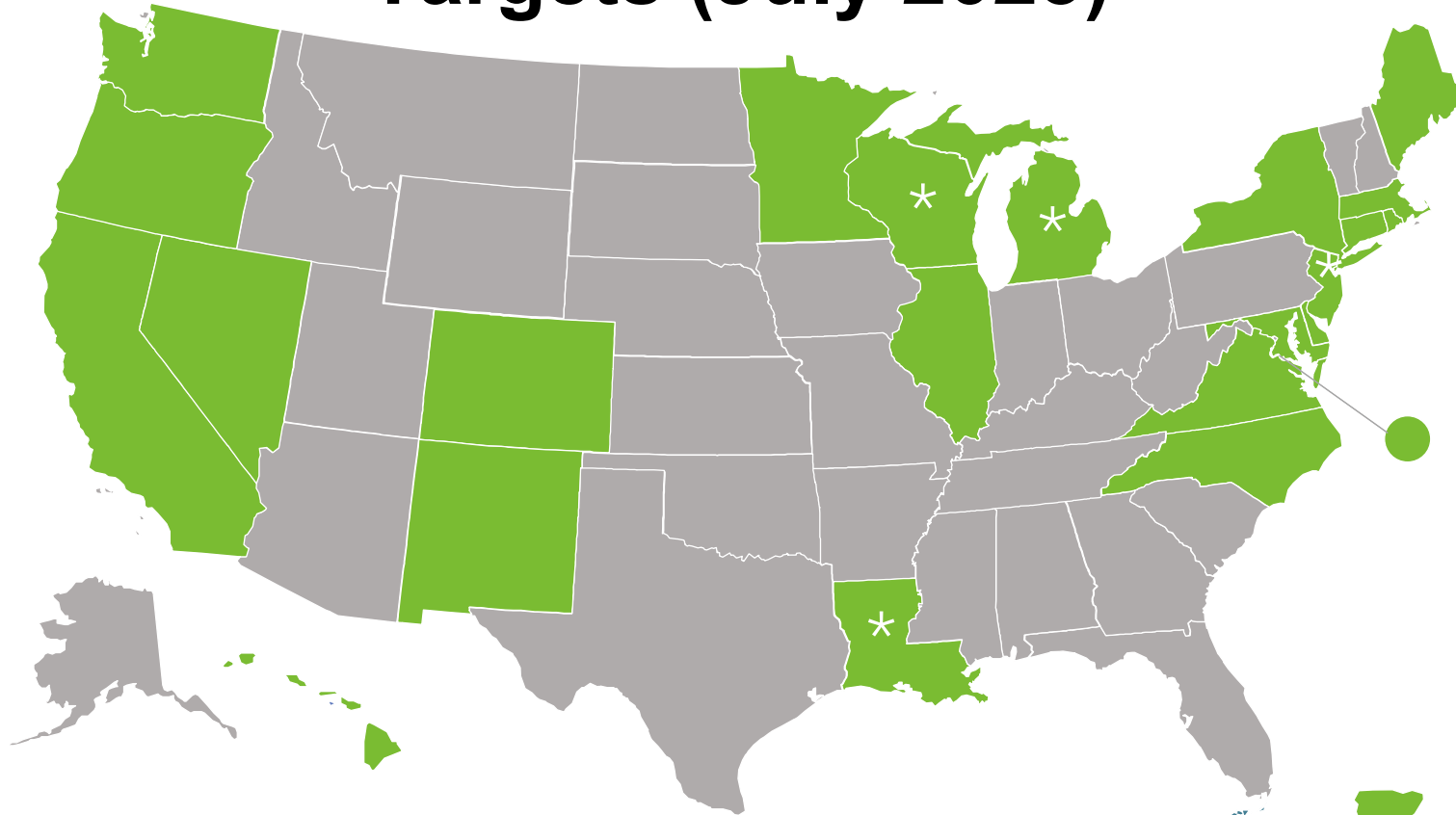
- MN established CES
- DC, MN changed existing RPS targets
- CO, CT, VA expanded RPS eligible technologies
- TX repealed RPS in return for voluntary market
- ME, NH, WA made changes to RPS compliance rules
- Changes to wind targets in MD, ME, VA
- Changes to storage targets in NV, ME
- MD, ME established new state procurement rounds
- NJ executive orders for 100% clean electricity and building decarbonization
- VA left RGGI
- CO, DE established new GHG targets
- AR approved new Entergy green tariff
- MA executive order created new Climate Chief
- HI resolution encouraged US Congress to create national carbon fee

State Clean and Renewable Energy Targets (July 2023)



- Renewable Portfolio Standard
- Renewable Portfolio Goal
- Clean Energy or Net-Zero GHG Standard
- Clean Energy or Net-Zero GHG Goal

100% Clean Energy or Net-Zero Electricity Sector Emissions Targets (July 2023)

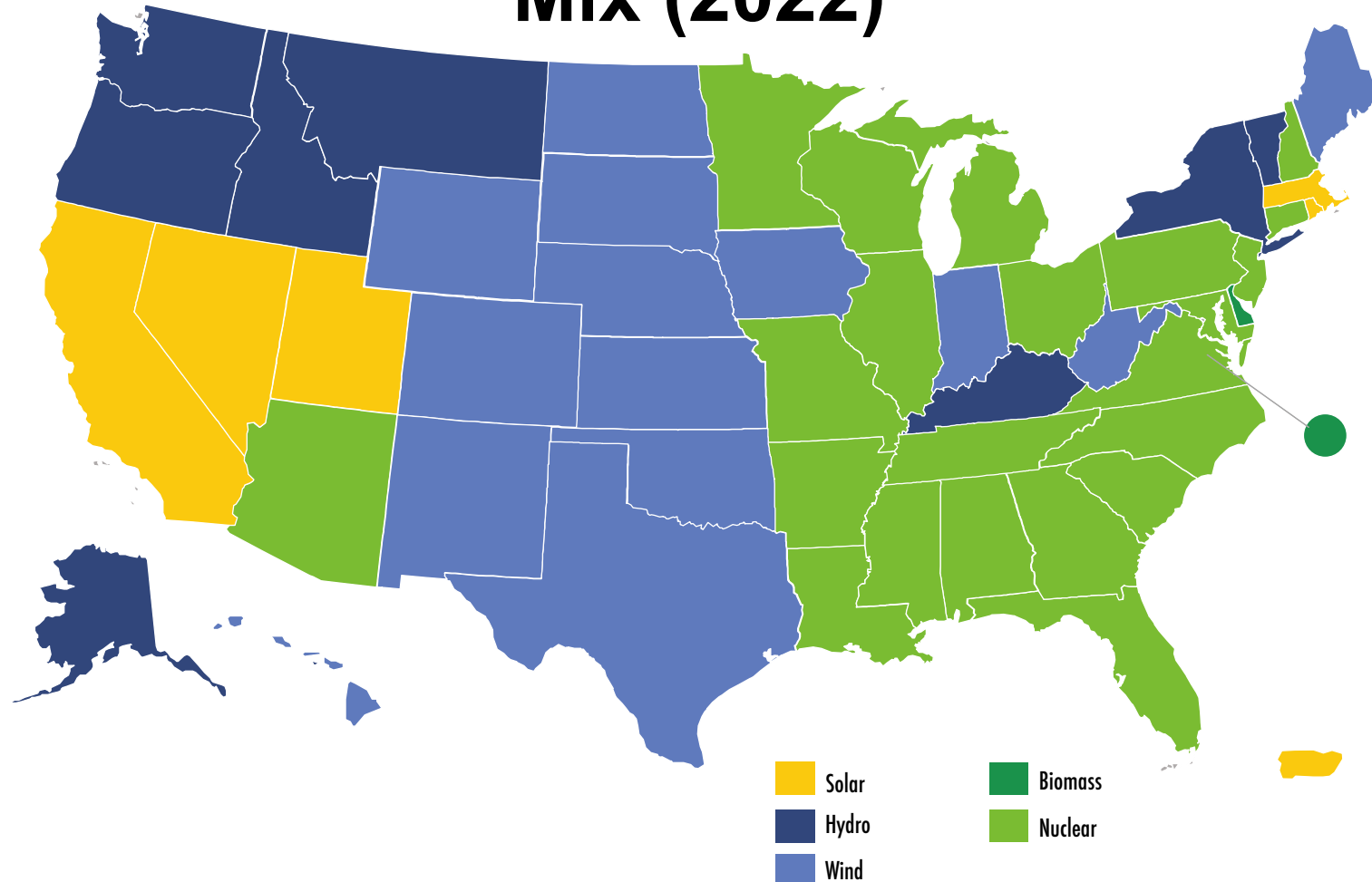


■ 100% Clean Energy/Net-Zero Electricity Emissions Target

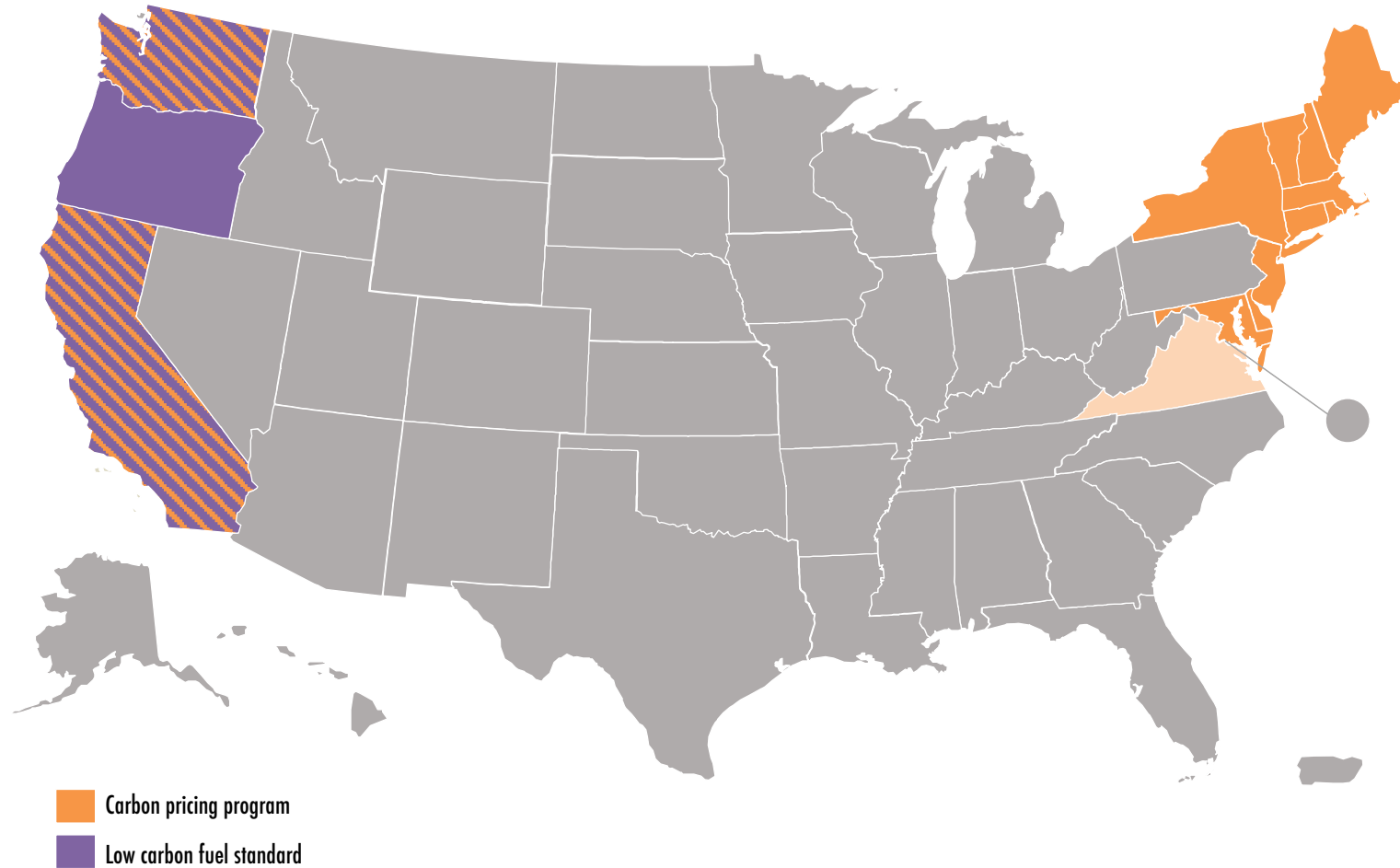
* Target Established by Executive Order

22 States + DC, PR have 100% clean energy or net-zero electricity emissions targets

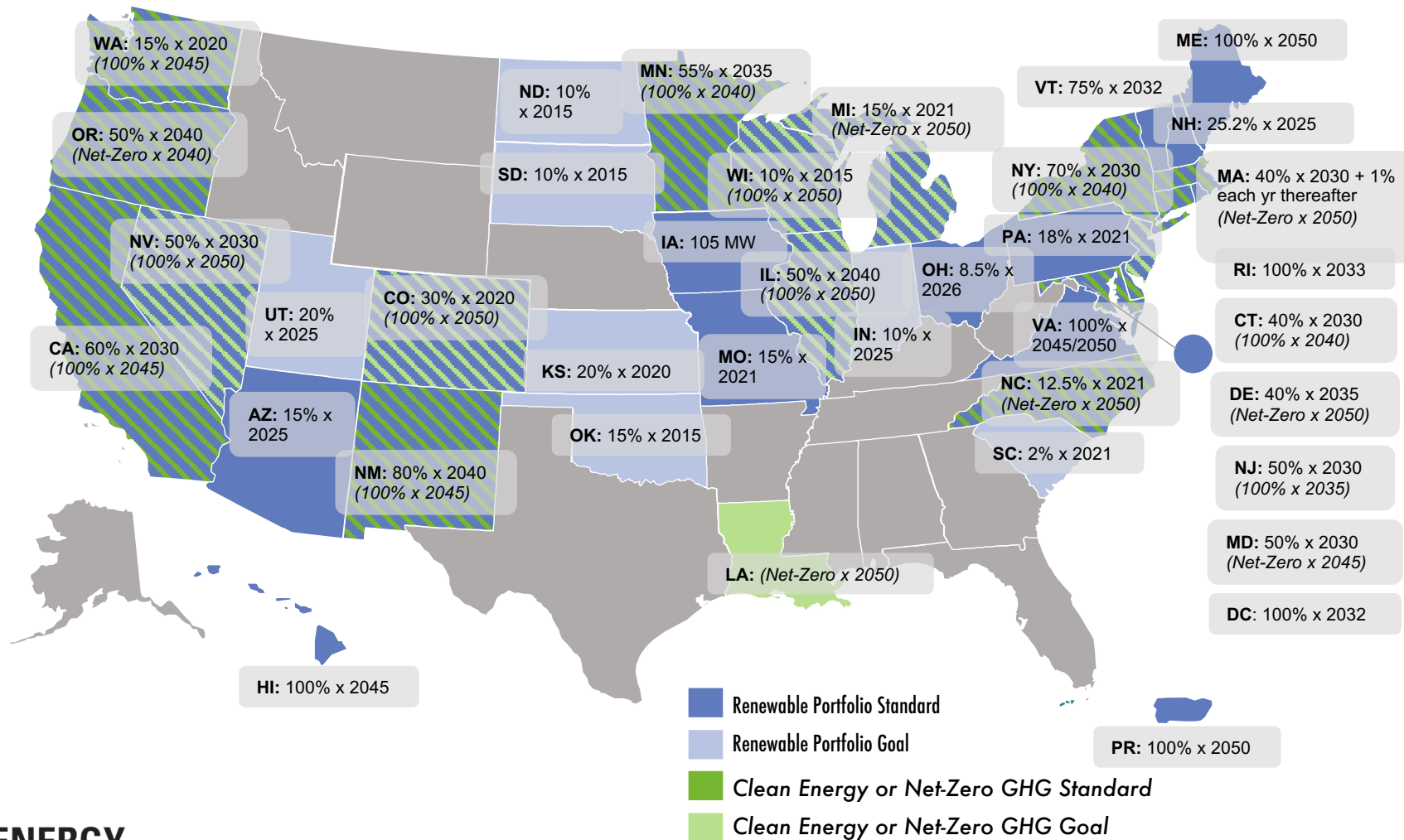
Greatest Contributing Clean Resource to State Generation Mix (2022)



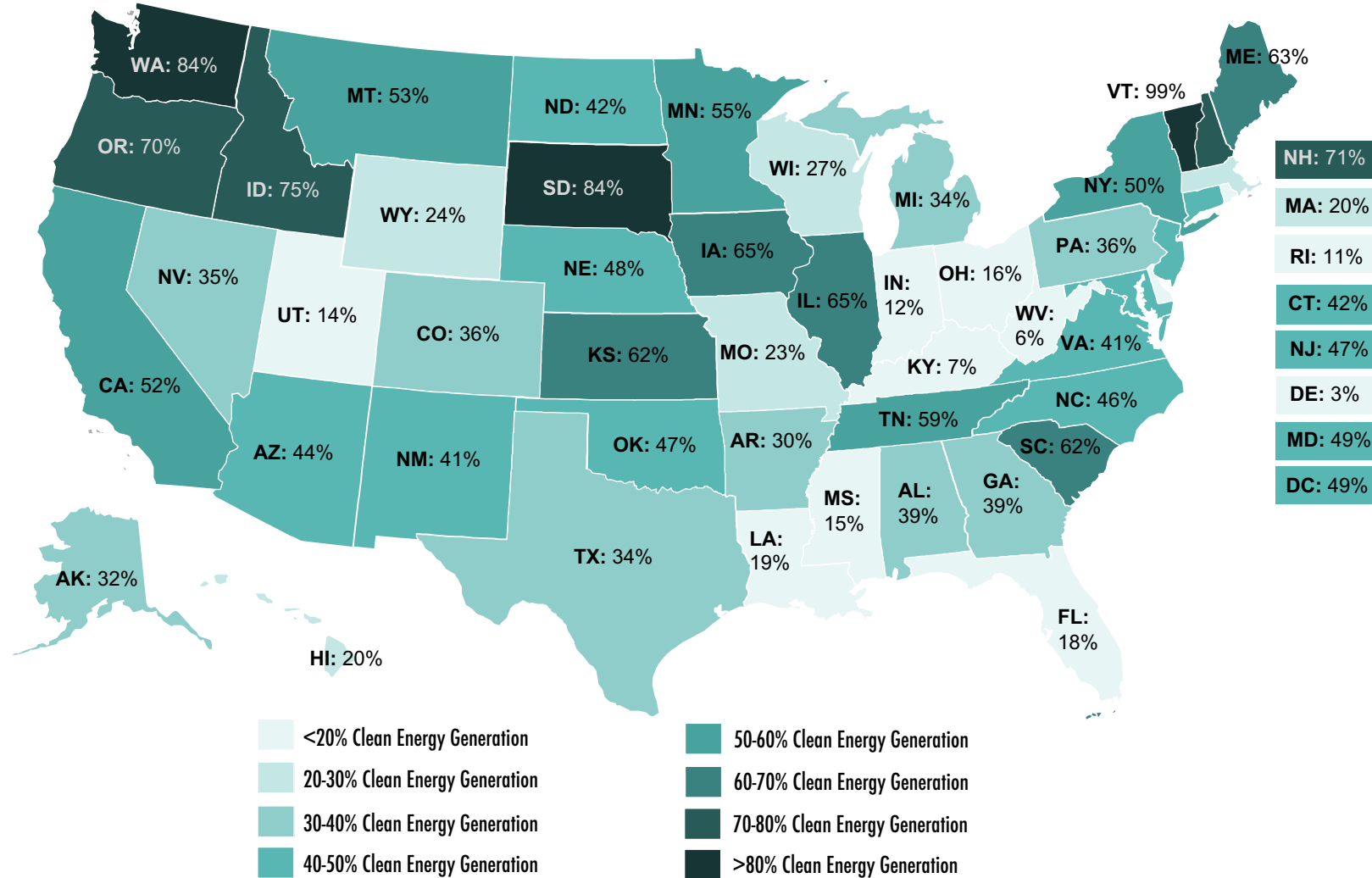
Carbon Pricing and Low Carbon Fuel Standards



State Clean and Renewable Energy Targets (July 2023)



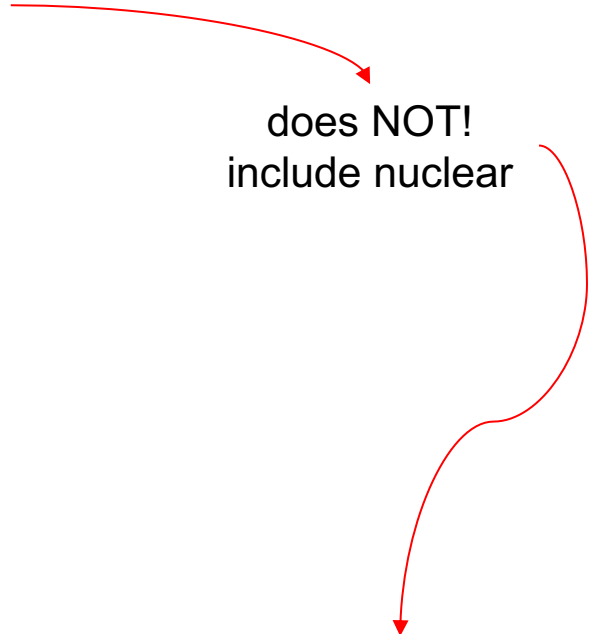
Percentage of Clean Electricity Generated by State (2022)



Example: North Carolina

- Renewable Portfolio Standard: 12.5% x 2021 for IOUs
 - 10% x 2018 for municipals + cooperatives
- Net-Zero x 2050
- Largest Resource in 2022: Natural Gas
- Largest Clean Resource in 2022: Nuclear
- Percentage Clean Electricity Generated in 2022: 46%
 - Percentage Renewable (excluding Nuclear): 14%

does NOT!
include nuclear





NC CLEAN ENERGY

TECHNOLOGY CENTER

Contact us for more information

rmdelamo@ncsu.edu | www.dsireusa.org



Follow us
[@NCCCleanTech](https://www.instagram.com/NCCCleanTech)

Intersection of Voluntary and Mandatory Markets:

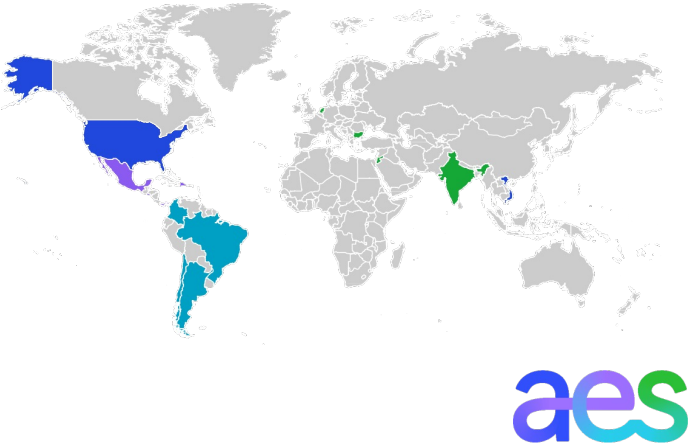
Voluntary Purchases in RPS and GHG/Cap and Trade reduction programs



•Erin Eckenrod



Global overview



4 Continents

14 Countries

4 Market-oriented strategic business units

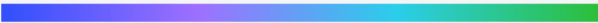
6 Utility companies

Bloomberg
NEW ENERGY FINANCE

Recognized by BloombergNEF for the second year in a row as the

#1 Seller of Clean Energy to Corporations Through PPAs

Recognized for our commitment to sustainability



Over 540 renewable projects in the US



Active in 48 states



1,110+ CE people

51+ GW

US development pipeline

5.1+ GW

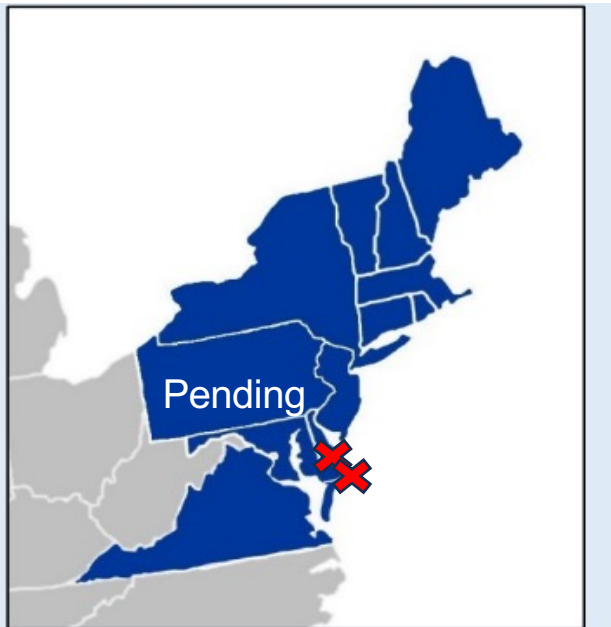
US operating clean energy resources

Voluntary Purchases and Cap and Trade

- ❖ Cap-and-trade emission reduction calculations include those reductions associated with voluntary purchases from renewable generation sited or imported into the covered state
- ❖ States looking to avoid double counting employ must set as employ voluntary set-aside allowances to be retired on behalf of voluntary purchases made from renewable generation sited or imported into the state

Set Aside Considerations RGGI

• RGGI Set asides



Who are the RGGI states? The participating RGGI states include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania,² Rhode Island, Vermont, and Virginia.

- ❖ DE Does not have set aside provisions
- ❖ Carbon Reductions from Voluntary purchases are included in their emissions calculations
- ❖ Voluntary RECS retired from facilities sited in DE will double count carbon reductions
- ❖ Voluntary programs will not allow renewable generation facilities sited in DE to qualify under their programs.
- ❖ Purchase and retirement of RGGI allowances needed to avoid double counting- cost prohibitive

*VA voted to withdraw from RGGI in 2023

Set Aside Considerations: California

- California: VRE Program



- ❖ Voluntary Renewable Energy (VRE) mechanism to recognize voluntary purchases
- ❖ % of allowances set aside to be retired for eligible voluntary renewable electricity generated
- ❖ Renewable buyers must apply for these credits from CARB (California Air Resources Board)
- ❖ Set aside Allowances are Capped limiting the amount of voluntary renewables eligible to receive these allowances

Voluntary Purchase Considerations under RPS / local mandates

TX

Compliance Premiums

VA

Advanced Renewable Buyers

NYC

Local Law 97 (LL97)

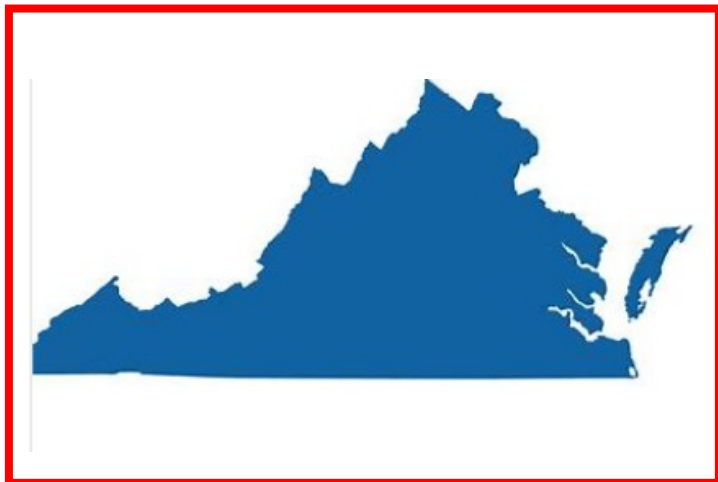
TEXAS RPS* Compliance Premiums Non-Wind



- ❖ In an effort to promote non-wind renewable builds in the state TX enacted a provision that awarded both a REC and a compliance premium for non-wind renewable generation
- ❖ Compliance Premiums can be retired for RPS compliance in lieu of or in addition to RECs
- ❖ Implication for voluntary buyers: Non-wind resources must retire the compliance premium with the REC in order to avoid double counting

- ***TX REPEALED IT'S RPS IN 2023 PROGRAM SUNSETS IN 2024**

Advanced Renewable Buyers: Virginia



- ❖ RPS obligation falls on Regulated Utilities who procure on behalf of their customers
- ❖ Costs are passed along to consumers via a utility Rider
- ❖ VA's Accelerated renewable energy buyer program allows qualifying commercial or industrial customers, to apply for partial or full exemption of non-offshore RPS rider costs
- ❖ Qualifying ARB purchases do not qualify toward utility obligation but do reduce its obligation
- ❖ Implication for voluntary Buyers: most voluntary programs require buyer to purchase 100% renewables in order to qualify

Local Law 97: New York City



- ❖ Local Law 97: NY City mandate to reduce building Carbon emissions
- ❖ Purchases of renewables sited or delivering into NYC qualify
- ❖ Implications?

Accelerating the future of
energy, **together.**



aes

Interactions Between State Compliance and Voluntary Markets

Todd Anthony Bianco
Chief Economic and Policy Analyst
Rhode Island Public Utilities Commission*

*Unless noted, these thoughts are my
opinion and not necessarily that of the
RIPUC or State of Rhode Island

Some things I like about voluntary working alongside compliance markets:

- Choice
- Product innovation
- Liquidity
- Price stability
- Headway

Some things I like about voluntary working alongside compliance markets:

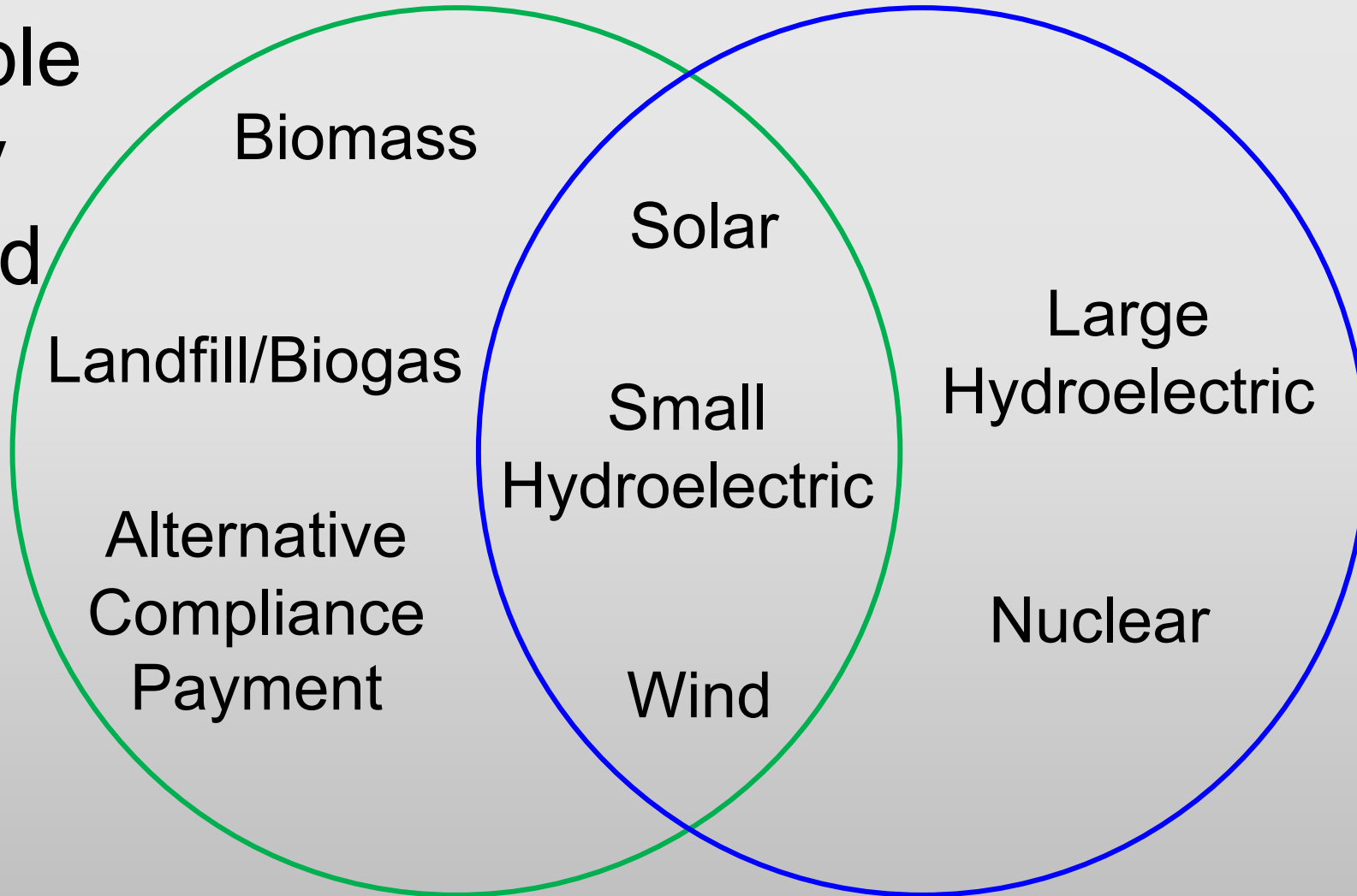
- Choice
- Product innovation
- Liquidity
- Price stability
- Headway

One thing I don't like:

- Incremental Confusion

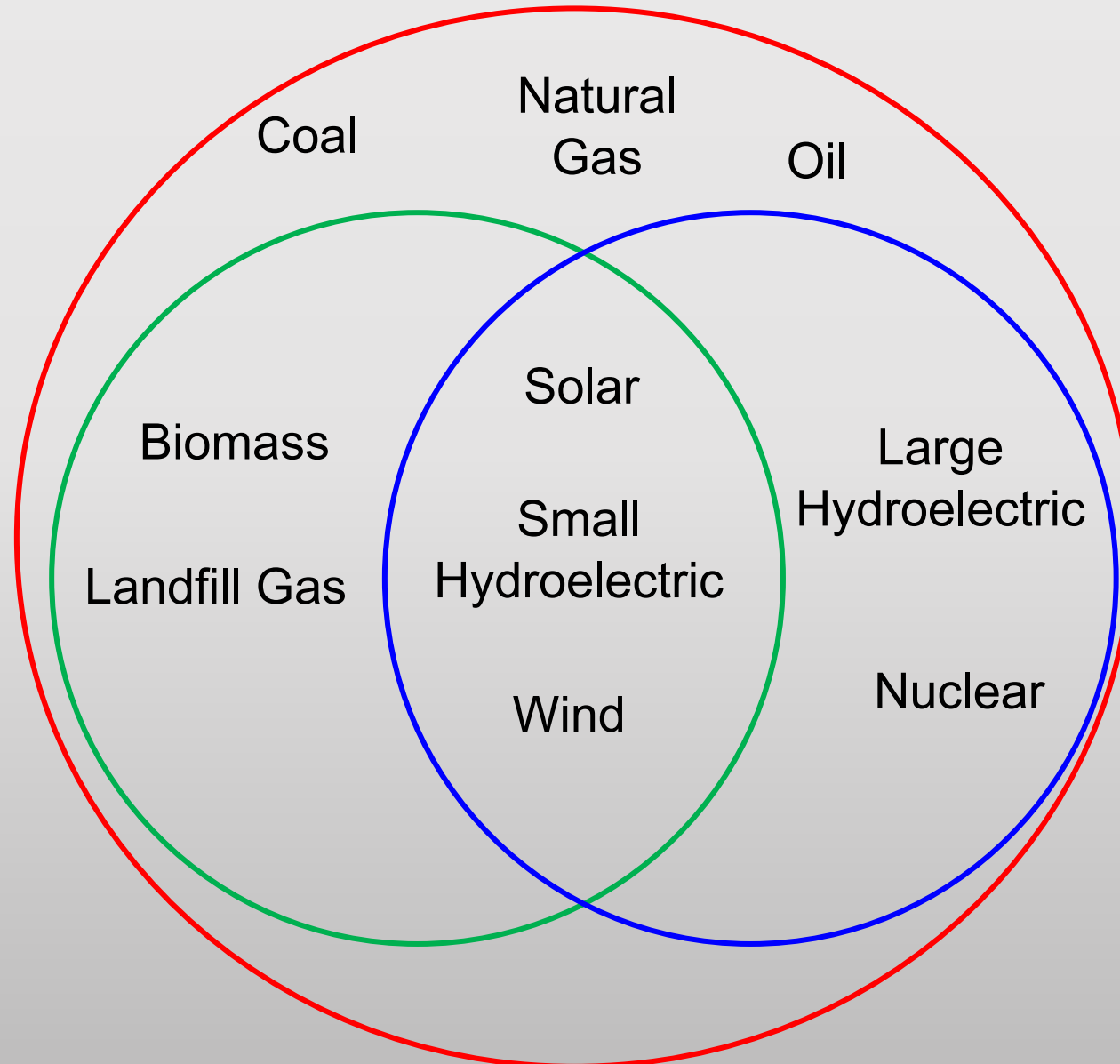
Rhode Island's Needs (Simplified)

Complies with
Renewable
Energy
Standard

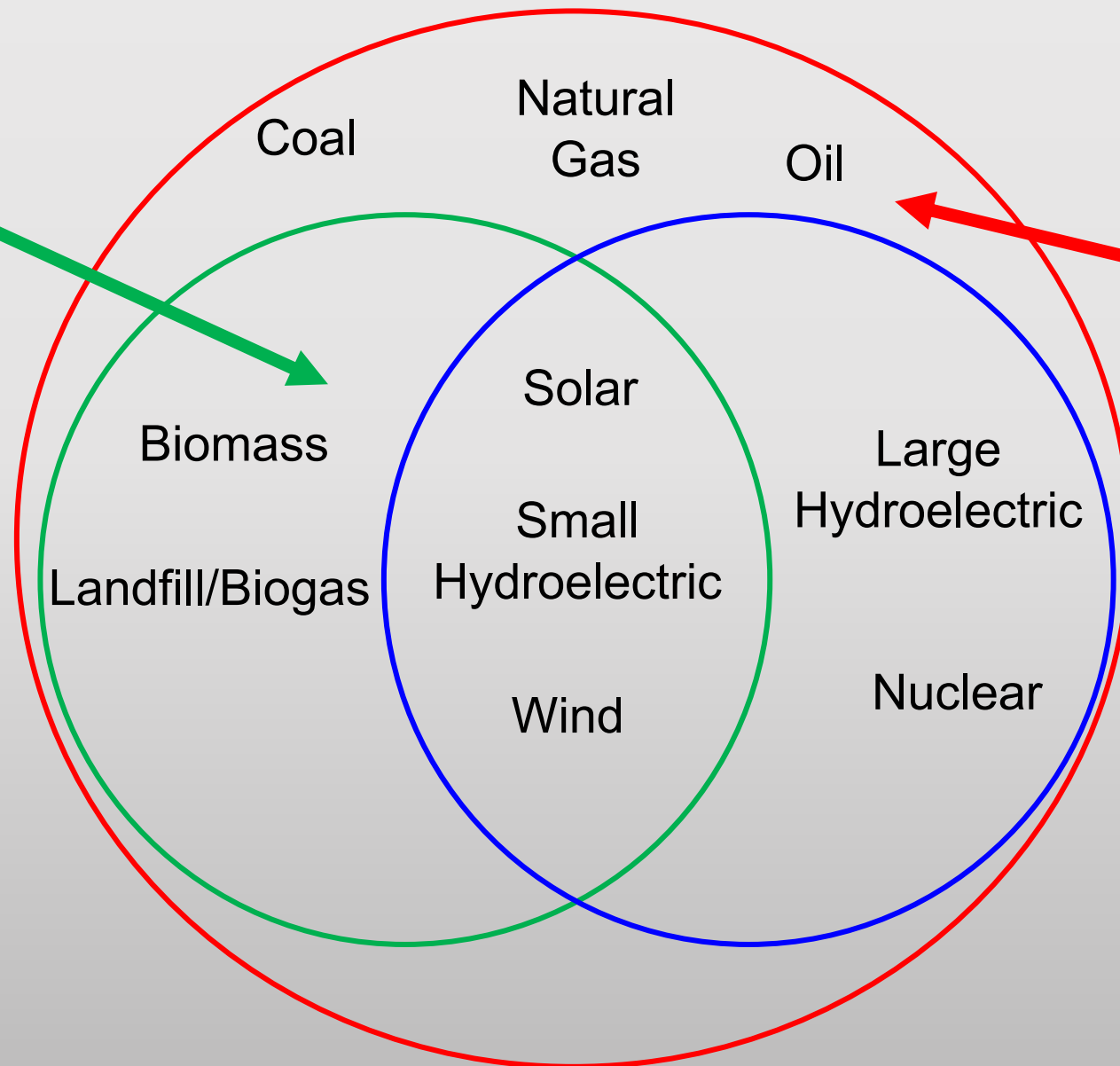


Lowers
Carbon
Emissions

Power Pool Generators (Simplified)

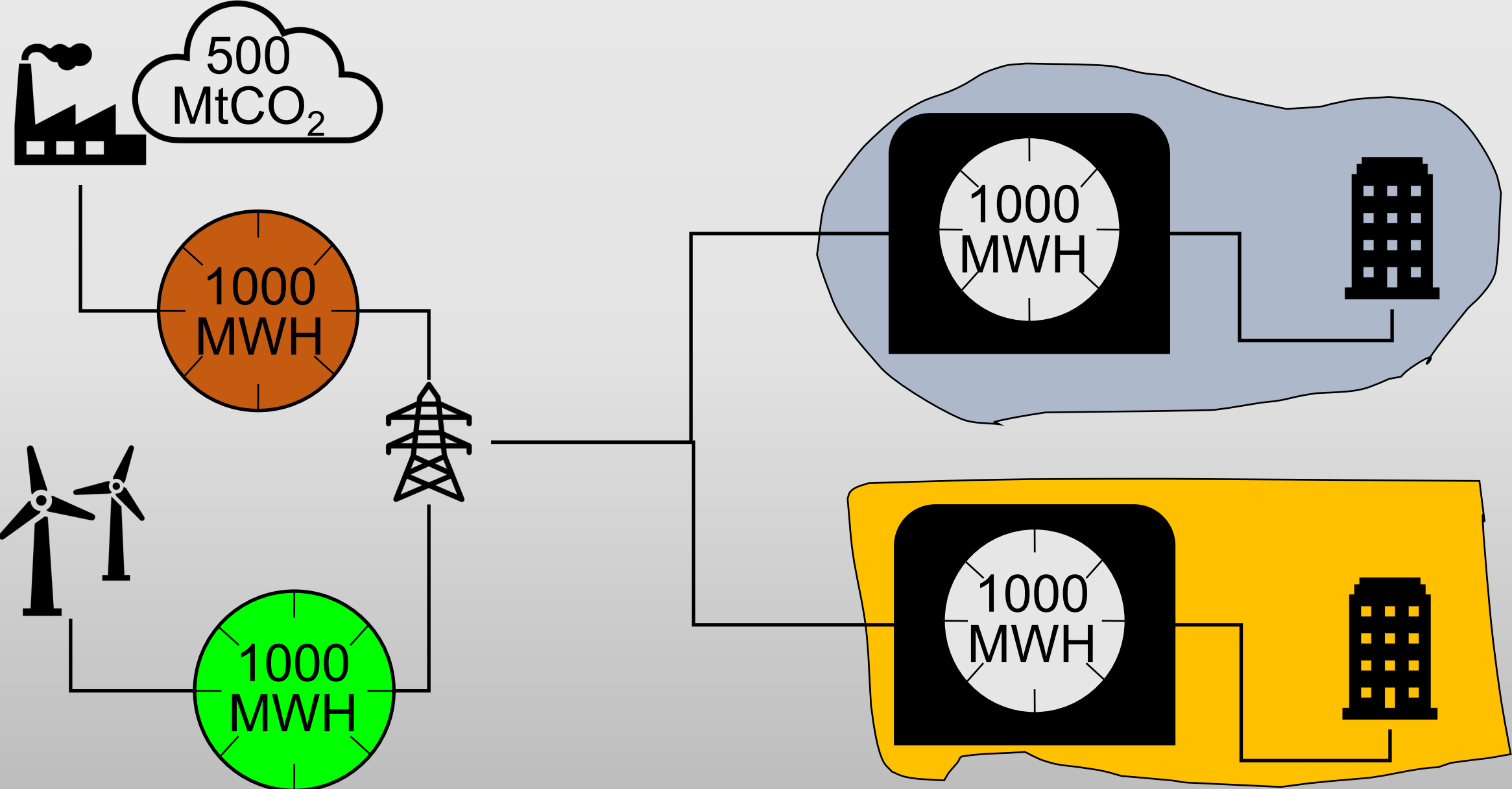


If Rhode Island has these...

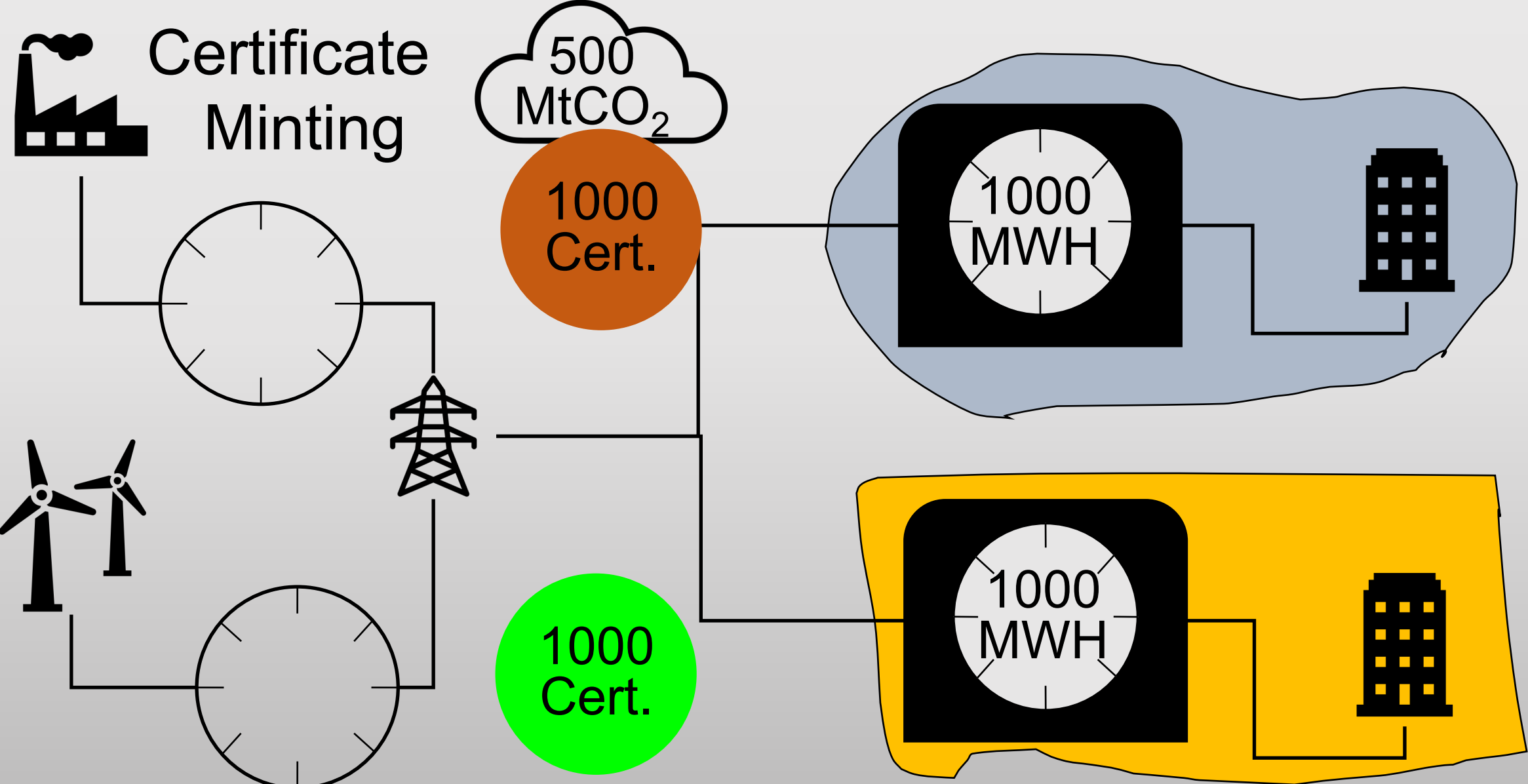


...who has those?

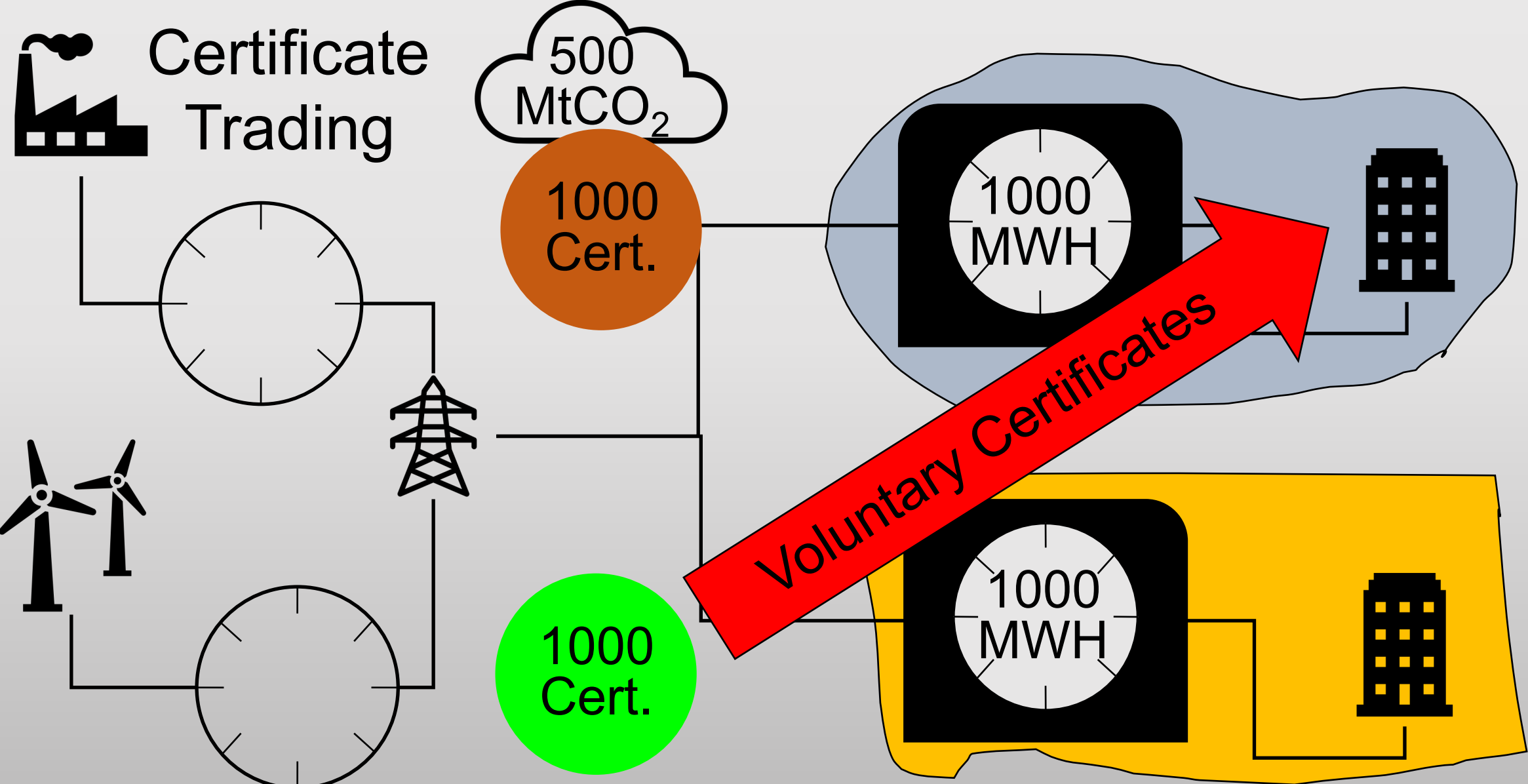
Invisible Volunteers



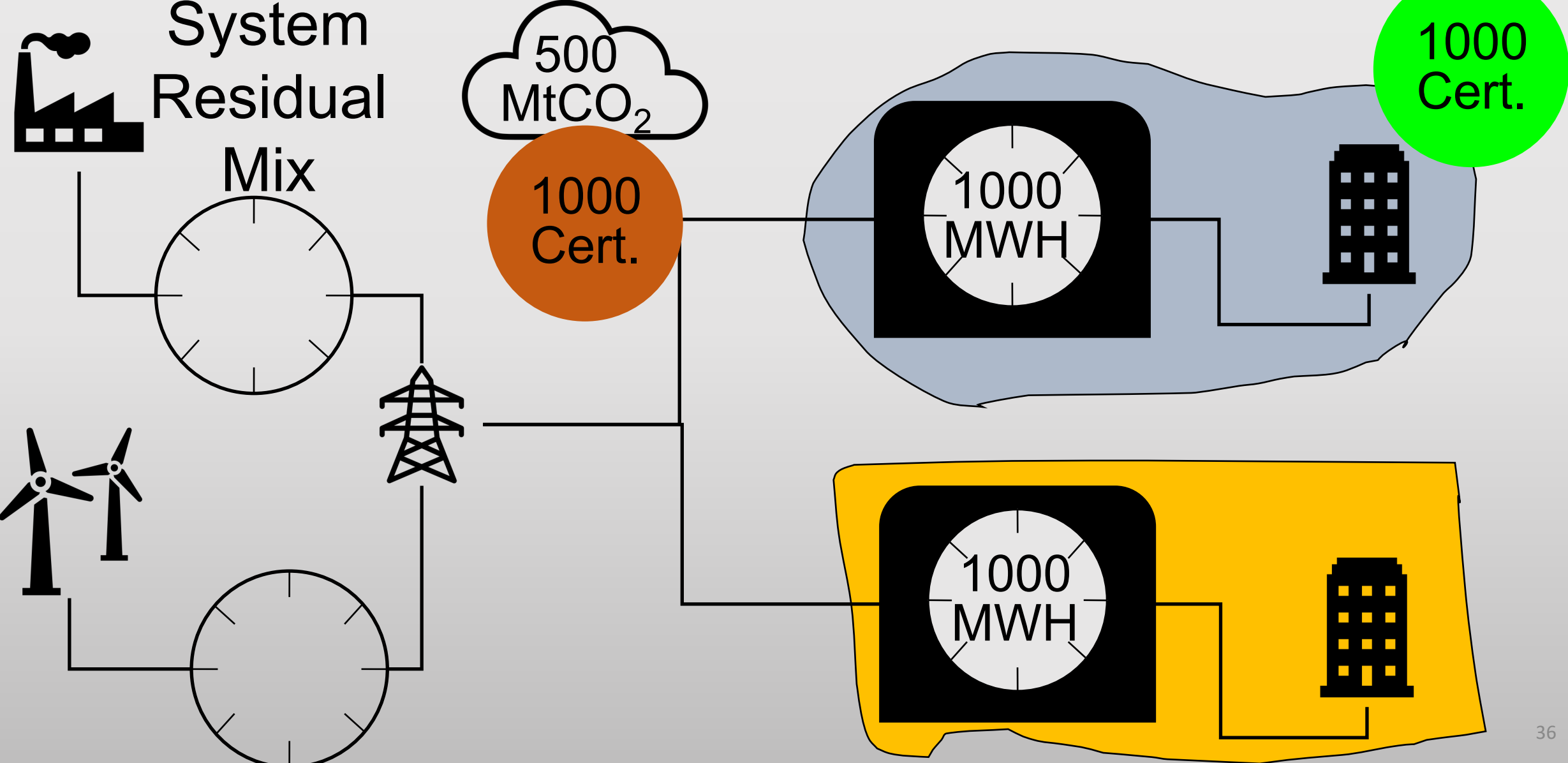
Invisible Volunteers



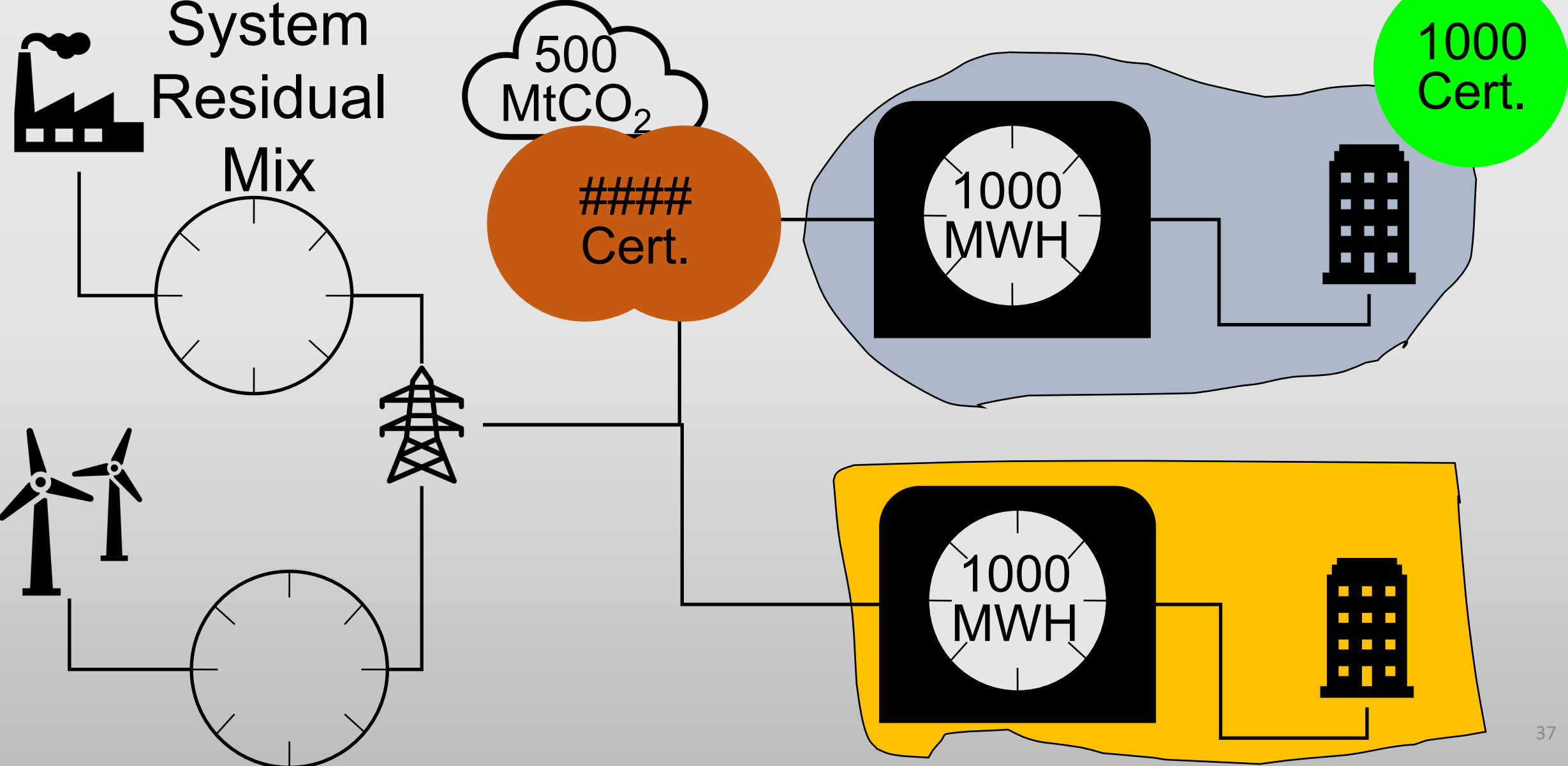
Invisible Volunteers



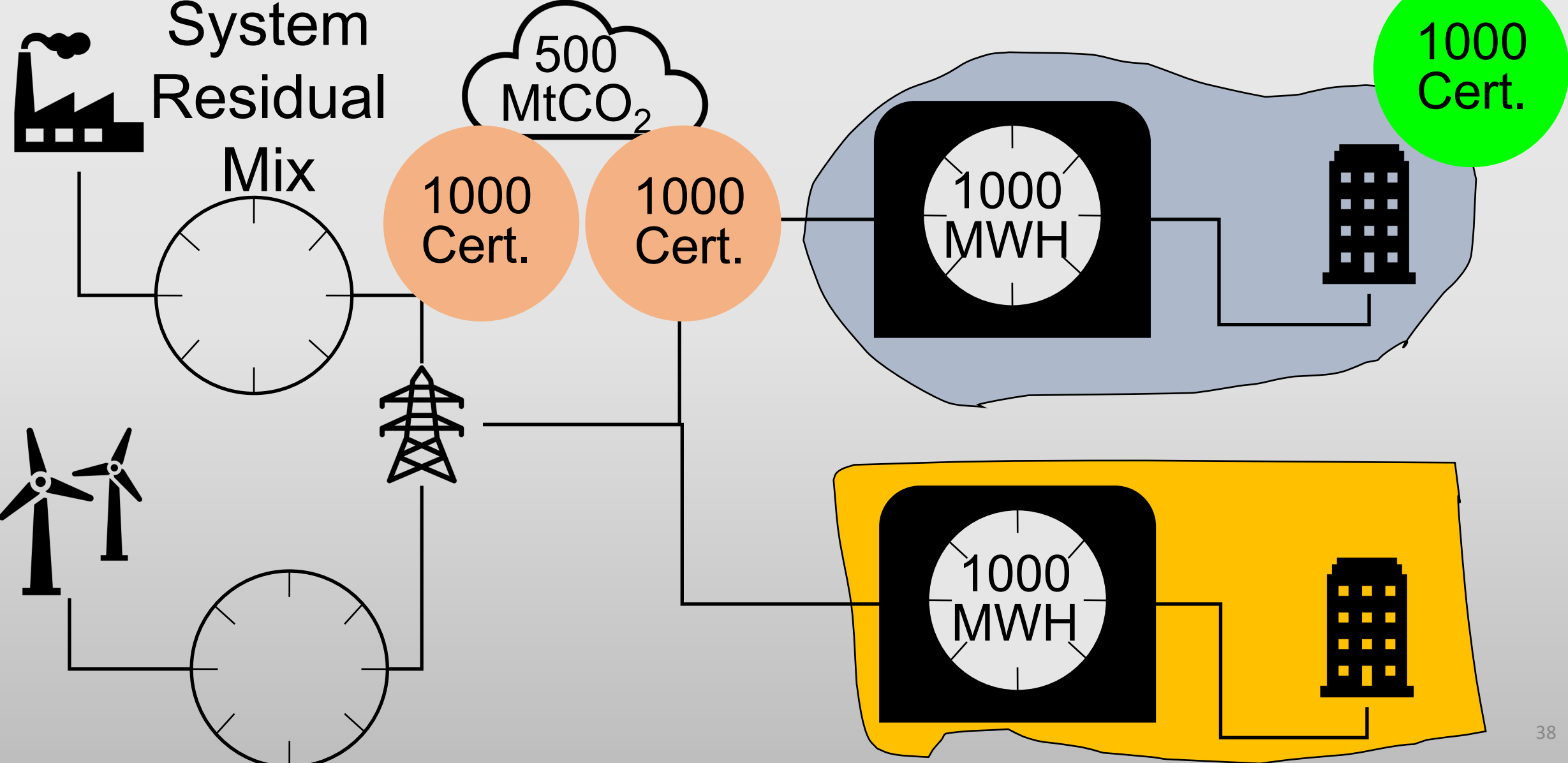
Invisible Volunteers



Invisible Volunteers

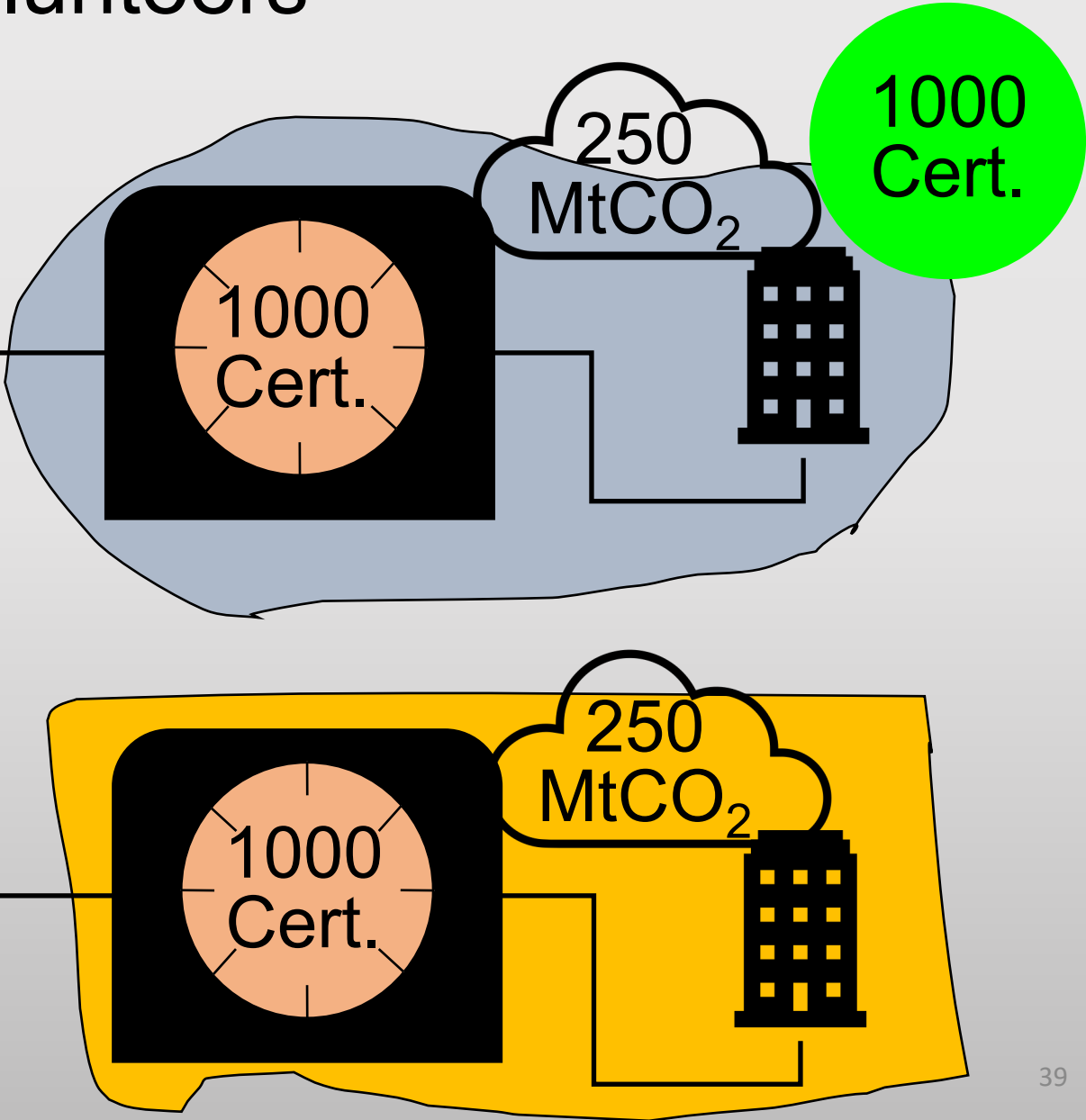
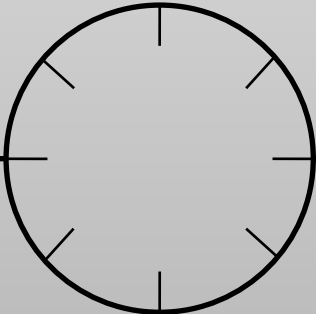
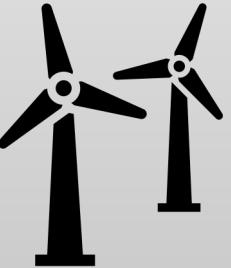
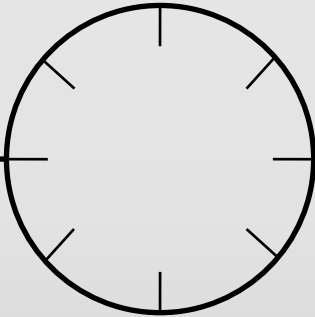
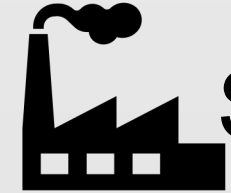


Invisible Volunteers

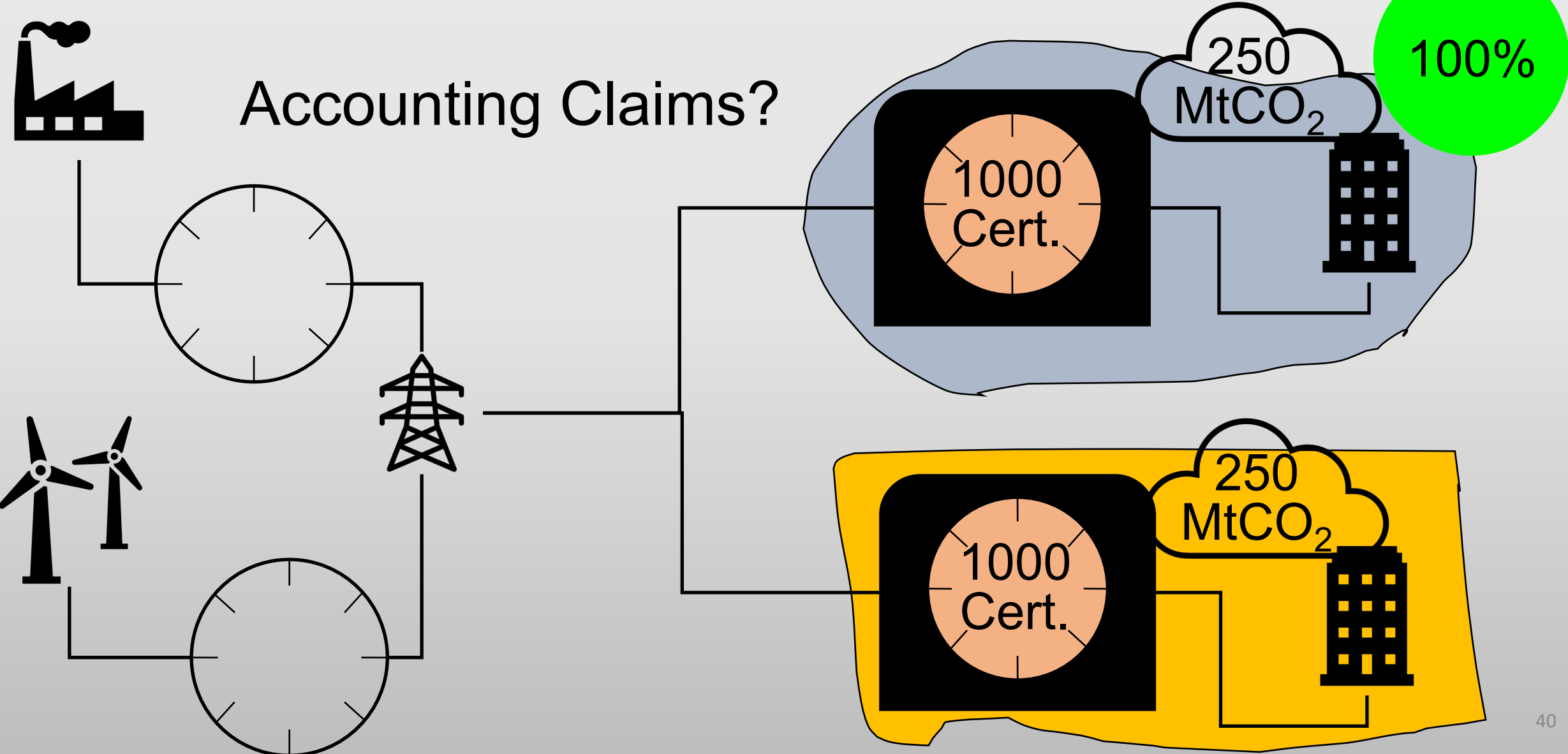


Invisible Volunteers

Final Settlement



Invisible Volunteers



Accounting Claims?

1000
Cert.

250
MtCO₂

100%

1000
Cert.

250
MtCO₂

We must harmonize compliance and voluntary markets. Let's start by improving:

- All generation *and consumption* tracking
- Transaction transparency
- Residual system mix