The Goal of a Renewable Energy Portfolio Standard:

Provide renewable technologies with a means to overcome perceived barriers and market imperfections which have heretofore impeded the ability of renewable technologies to effectively compete with conventional (fossil fuel) technologies.

Methods to Support Renewable Development

- State government:
  - Purchase renewable output
  - Build plants
- System Benefits Funds
- Tax Incentives
- Renewable Portfolio Standard (RPS)

Approaches can be used together to achieve particular policy goals.

Renewable Portfolio Standard

- Improve environmental quality
- Fuel diversity: reduce potential impacts of supply disruptions and price shocks
- Expand the use of renewables:
  - Provides a market share
  - Selected technologies can be cost effective

RPS Policy Considerations

- Selection of Renewables
- Single vs. Multi-tiered (“Baskets”)
- Appropriate RPS Level
- Product vs. Company Standard
- New vs. Existing Renewables
- Regional vs. State Standard
- Cost Cap (“Steam release valve”)
- Sunset Provisions

Selection of Renewables

- Characterized by sustainability
- Relatively few environmental impacts, and its minimal risk to human health as compared to conventional or non-renewable resources.
- Sources include: solar, wind, tidal, geothermal, biomass, waste-to-energy, landfill gas, digester gas, and hydroelectric.

Included Technologies

- Is the technology available for development in the specified area?
- Degree the technology is environmentally benign?
- Degree the technology is competitive with conventional technologies?

Single vs. Multi-tiered Approaches

- Single-Tier
  - Least-cost method
  - Could limit the number of technologies used
- Multi-Tier
  - Seeks to balance minimizing costs with the development of a wider variety of technologies
  - Technologies close to being competitive with conventional technologies separated

Maryland Uses Multiple RPS Tiers

- Tier 1
- Tier 1 Solar
- Tier 2

MD Tier 1 Renewable Sources

- Solar (Tier 1 Solar)
- Wind
- Qualifying biomass
- Certain Methane
- Geothermal
- Ocean
- Certain fuel cells
- Certain small hydroelectric plants (less than 30MWs)
- Poultry litter-to-energy

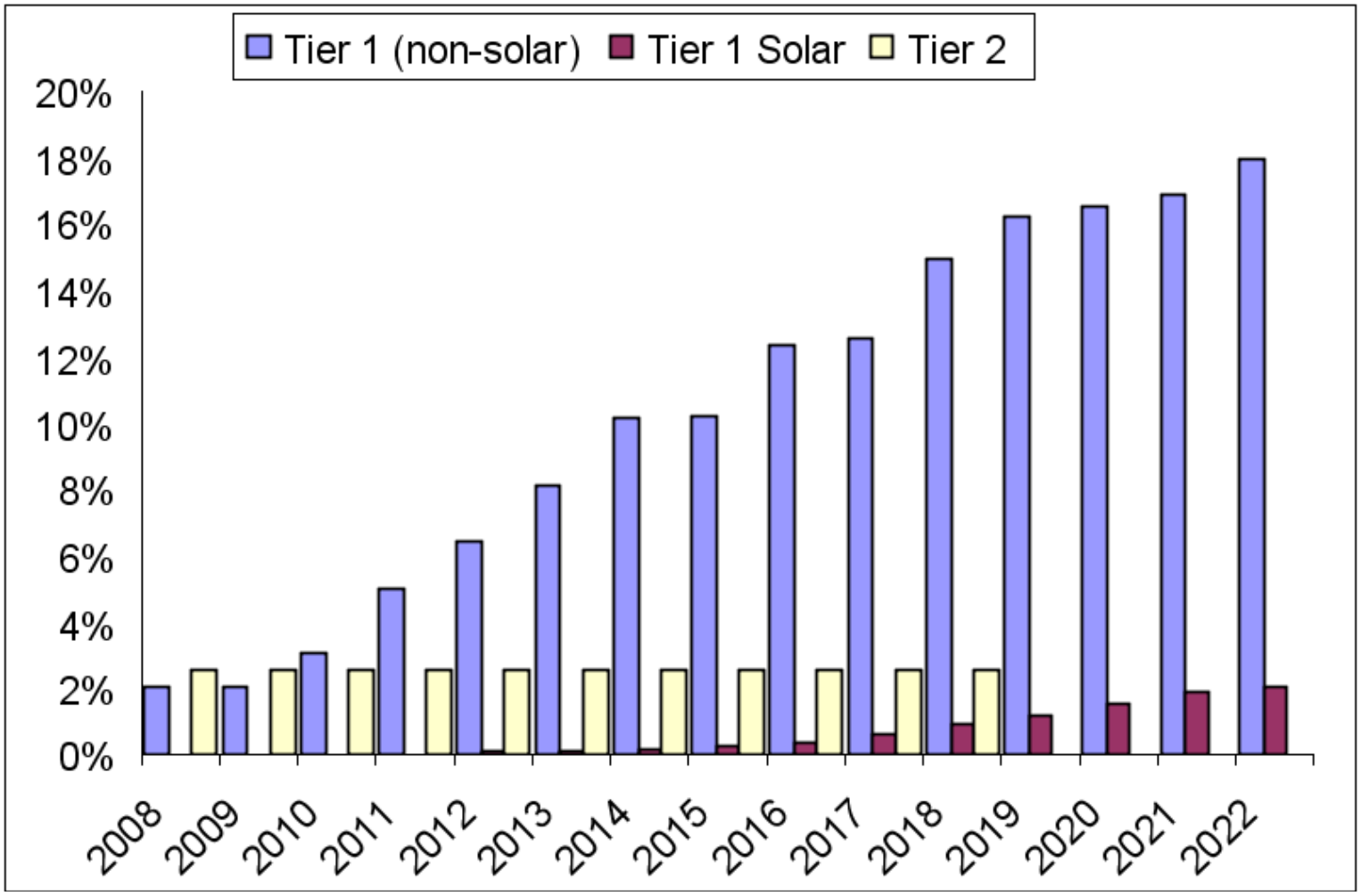
MD Tier 2 Renewable Sources

- Large hydroelectric power other than pump storage generation
- Waste-to-energy

Appropriate RPS Level

- Technical reasonableness and the establishment of deadlines for compliance
- Dependent upon local factors
  - Potential for renewable generation
  - Availability of existing resources
  - Cost competitiveness
- Provides a stable market for targeted renewables

MD Annual RPS Requirements



Product vs. Company Standard

- Product-Based: All products contain the minimum level of RE specified by the RPS

- Company-Based: Sum of all products must meet the RPS standard

Maryland uses a company based RPS

New vs. Existing Resources

- Existing renewable generating facilities: paid for services already provided ("economic rent")
- Existing resource can be excluded from the RPS, or
- To encourage the development of new and more costly technologies, a two-tier standard can be used with a certain percentage tied to new and existing resources

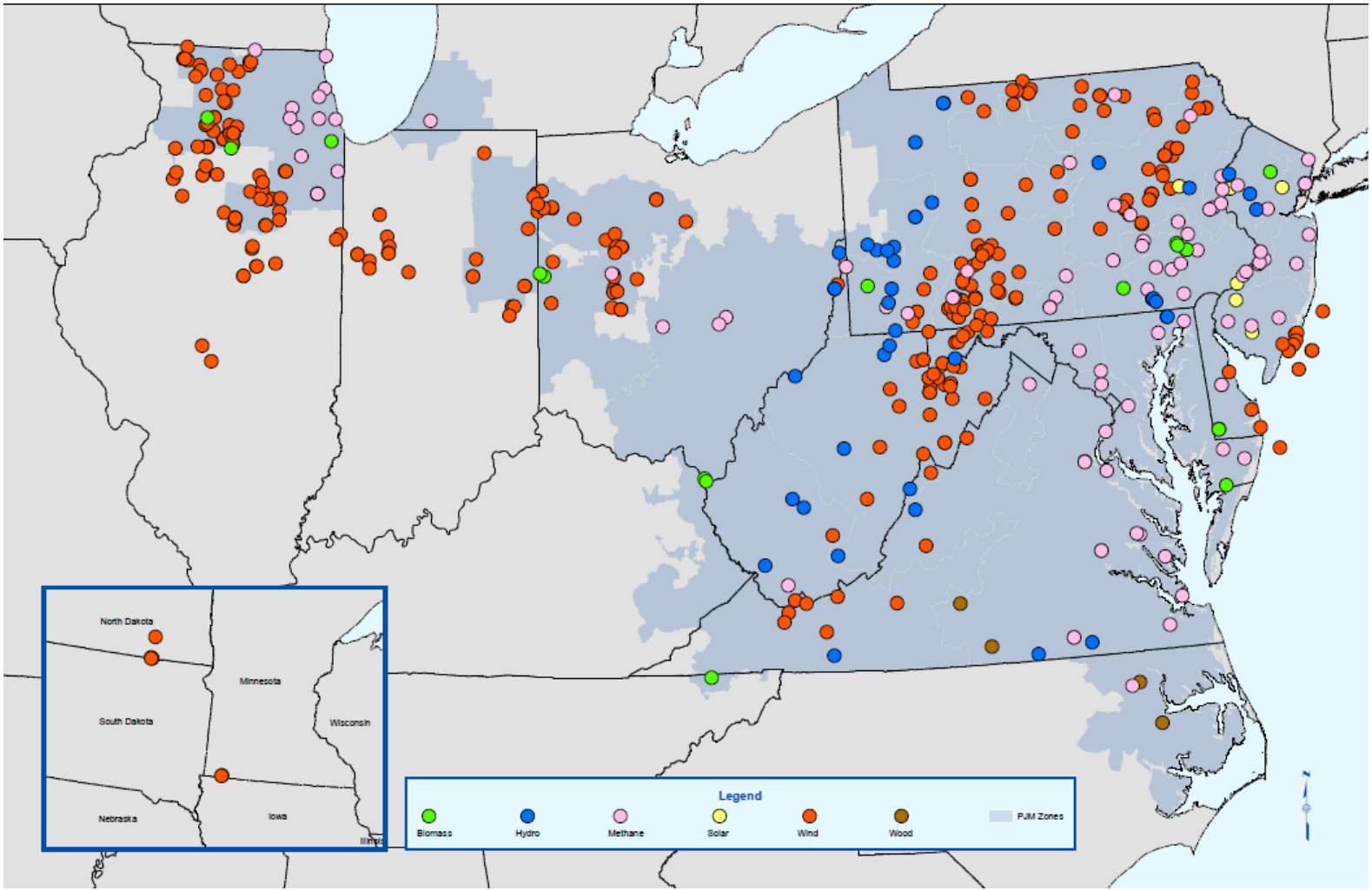
Regional vs. State Standard

- Regional
  - Competitive disadvantage possible
  - Coordination and implementation difficulties
- State-Only
  - Ancillary economic benefits from new generation facilities

Maryland uses a regional approach

PJM Region

(Proposed Renewable Generation)



Source: PJM Renewable Energy Dashboard, Available: www.pjm.com

Cost Cap
(“Steam Release Valve”)

- Protect consumers from cost exposure
- Could reduce renewable development
- Introduce additional uncertainty for renewable investors

Sunset Provisions

- Target renewable technologies that would become competitive with conventional technologies at a future time

- Typically range from 10 to 20 years

Maryland has a sunset provision for Tier 2 resources.

Maryland RPS Policy

- Load Serving Entities (LSEs) are required to meet the RPS by:
  - Purchasing power from renewables, or
  - Generating power from renewables, or
  - Purchasing RECs in sufficient quantity to satisfy the standard.

Maryland RPS Policy Summary

- Two-Tier Standard with a Tier 1 carve-out for solar technology
- Company-Based Standard
- Regional Standard (PJM Territory)
- Compliance Fee used as a Cost Cap
- Sunset Provision for Tier 2 technologies

MD RPS Legislation: *Changes the Requirements*

- The solar energy set-aside
- Annual percentage requirements: increased and accelerated
- Compliance penalty doubled
- Compliance area restricted
  - Initially PJM region and all adjacent states
  - In 2011, PJM and only adjacent states which deliver electricity into the PJM region

Regional RPS Policy Interactions

- Maryland RPS within the PJM Territory
  - PJM territory includes 13 states and DC
  - RPS established in 8 states and DC
- LSEs which operate in more than one state, will most likely comply with the most stringent state RPS with the highest ACPs first.
- Renewable energy development will most likely occur in areas with the highest demand for RECs.
- Federal RPS Policy may play a role