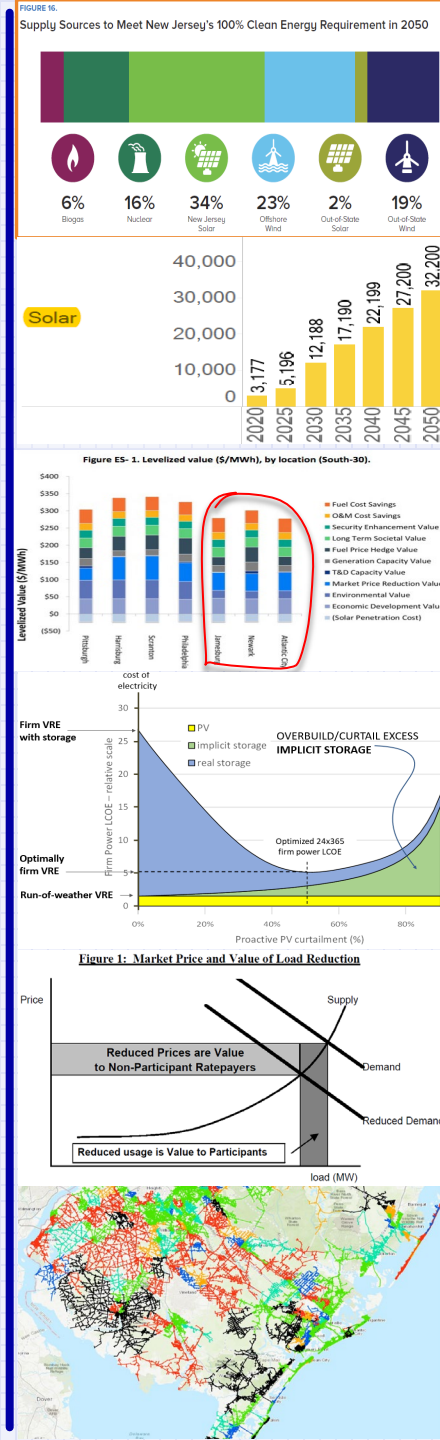


MSSIA QUARTERLY MEETING

October 17, 2024

- NEW JERSEY LEGISLATION RUN-DOWN
- THE VALUE OF DISTRIBUTED SOLAR

LYLE RAWLINGS
PRESIDENT, MSSIA



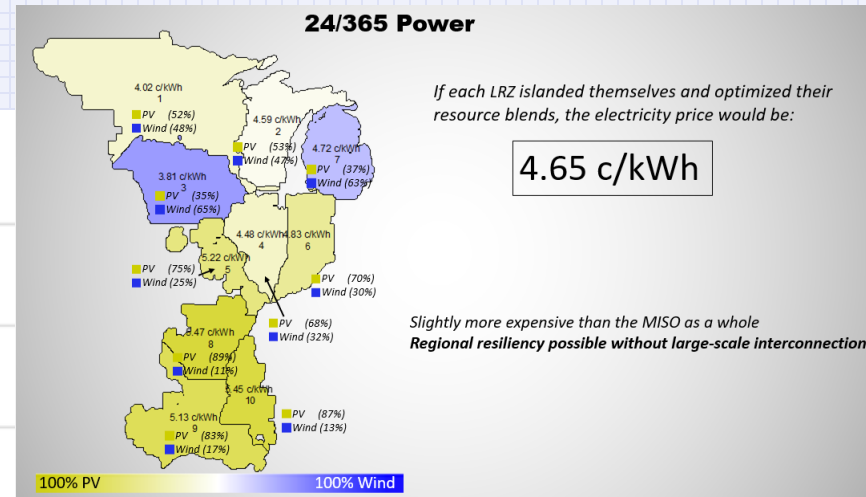
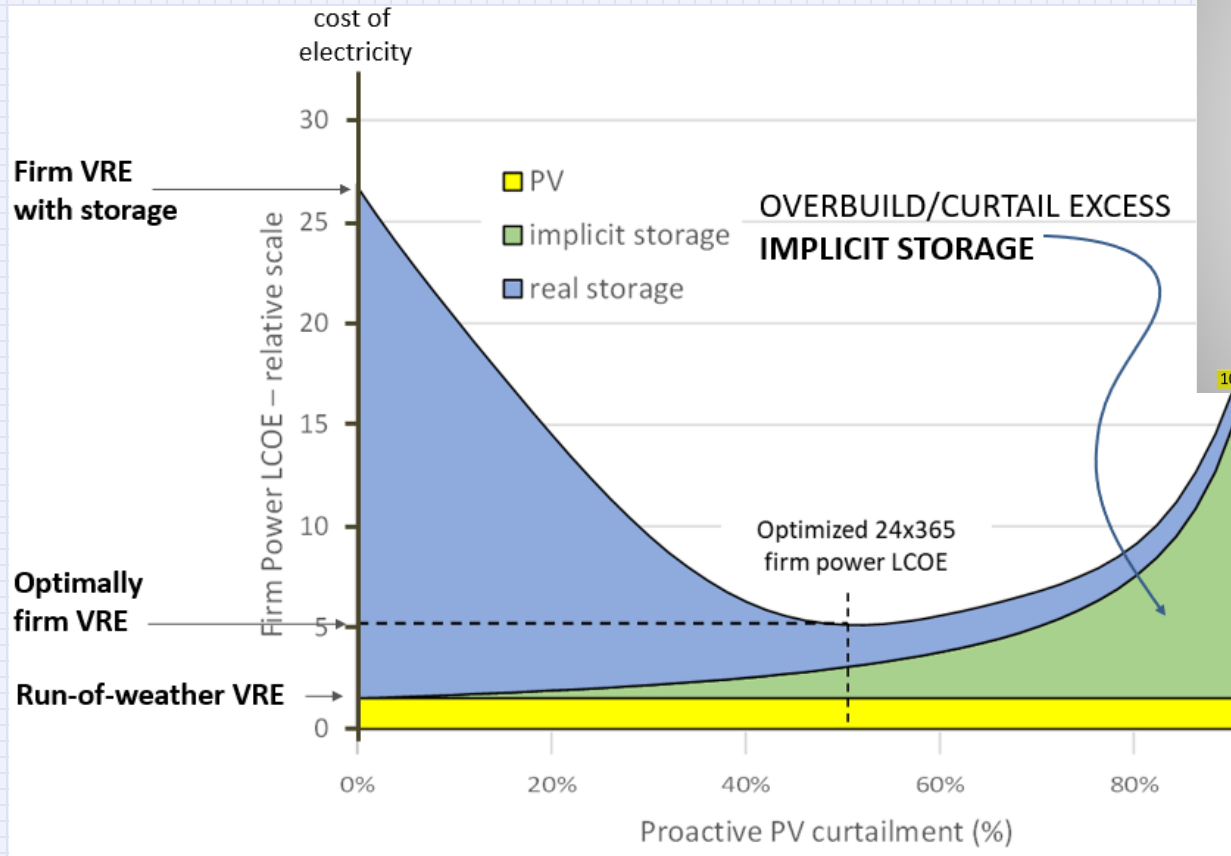
Bill # / Subject	Description	Status	Key Players
<u>S237/A1480 (Smith, Mukherji / Karabinchak) - Renewable Portfolio / Clean Energy Standard***</u>	"New Jersey Clean Energy Act of 2024"; establishes 100 percent clean electricity standard and directs BPU to establish clean electricity certificate program	Strengthened/passed 3-2 Sen. Env. Comm. (SEN) 3.14.24. Still needs amendments especially to protect in-state solar industry. Stalled in Sen. Budget Comm. (SBU). Hasn't and won't move in Asm. until/if it passes Senate. Has significant opposition from varied, multiple stakeholders, supporters are largely luke warm.If. Appeasing construction trades and rate hike concerns are biggest hurdles. Likeliest chance is bill never gets to Gov's desk. If it does, more likely to be weaker not stronger.	Sens. Smith, Scutari, Sarlo; Asm. DeAngelo, Coughlin; construction trades; Gas industry compromised Princeton Prof. Jenkins; Gov. Murphy
<u>S258 (Smith/Mukherji) - the "Grid Mod" bill***</u>	Requires electric public utilities to develop and implement grid modernization plans; appropriates \$300 million.	Passed 5-0 in SEN 3.14.24, referred to SBU. No opposition on substance, consensus grid mod is needed, but the price tag is the problems so the bill's stuck.	Sens. Smith, Scutari, Sarlo; Asm. DeAngelo, Coughlin; electric utilities; Murphy Admin.
<u>S2816 (Smith/McKeon) - opens up closed/restricted circuits, the "low hanging fruit" bill***</u>	Requires electric public utilities to submit to BPU and implement infrastructure improvement plans to reopen many of the State's electric distribution circuits that have been closed to any additional renewable energy installations, or restricted to 100 kilowatts or less of remaining circuit capacity	Passed Senate 31-6, 5.13.24, was amended to open up more circuits but still not enough. Fred DeSanti opposes opening up more citing ratepayer hike, Sen. Smith is open-minded, talking to BPU who's on track to do this regulatorily but not fast enough due to utility push back. Storage provisions need strengthening as well	Sens. Smith, Scutari, Sarlo; Asm. DeAngelo, Coughlin; BPU; Fred DeSanti; electric utilities
<u>S3545 (McKeon, Smith / Allen, Hall) - Climate Superfund</u>	"Climate Superfund Act"; imposes liability on certain fossil fuel companies for certain damages caused by climate change and establishes program in DEP to collect and distribute compensatory payments.	introduced 9.12.04, major priority of McKeon, Smith, Empower NJ ...Polluter pays to fund climate change adaptation and resilience projects. Modeled after VT law, NY bill on Gov. Hochul's desk. NY bill's estimated to raise \$3 B / yr. so reasonable estimate for NJ is over a \$1 B / yr. At least Empower NJ wants to ensure mitigation projects receive funds too.	Sens. McKeon, Scutari, Smith, Sarlo; Asm. Coughlin; massive fossil fuel industry opposition; major enviro. support
<u>"Flying blind", irregular 100% clean energy by 2035 (100 x 35), Energy Master Plan (EMP)***</u>	regulatory effort to better plan for truly achieving 100 x 35	Between nukes, wind and solar, NJ is on track to approach 100 x 35 but given the variety of intermittent sources much more careful planning and storage is needed. NJ is not doing that and the EMP update this yr. should utilizing the work of Richard Perez.	Murphy Administration, MSSIA, all stakeholders
<u>Gas v. Solar/Storage Microgrids***</u>	Fixes regulatory hurdles that promotes gas over solar/storage microgrids.	Government entities (PVSC, NJT, MCUA, Hoboken, Woodbridge, et al.) are increasingly interested in establishing their own microgrids. Sen. Smith drafted legislation at MSSIA	Sen. Smith, BPU, MSSIA

<p>20 yr time horizon / satellite sensing***</p>	<p>Corrects loopholes in the law that requires the executive branch to consider 20 yr. not just 100 yr. time horizon when determining global warming potential and DEP to use satellite sensing data to determine annual GHG emissions</p>	<p>Sen. Zwicker is expected to introduce the bill on 9.30.24, Sen. Smith will co-prime and help move it along. This more honest assessment will more put more pressure no the state to reduce GHG emissions faster</p>	<p>Sen. Zwicker, MSSIA, Empower NJ</p>
<p><u>False Solution bills (LCFS, RNG, CCS, ...) see this doc.</u></p>	<p>several bills that promote disputably less dirty energy sources as alternatives to traditional fossil fuels</p>	<p>Repeated efforts to move these bills have stopped due to strong opposition from the ej and environmental communities but they continue</p>	<p>Sens. McKeon, Singleton, Smith, Scutari; Asm. Karabinchak, Coughlin; Gov. Murphy</p>
<p>Clean Heat Standard (Smith v. Stanley)</p>	<p>requires state to develop and implement clean heat standard to reduce GHG emissions from building heat</p>	<p>Asm. bill introduced by Asm. Stanley is weak. Sen. Smith is drafting stronger bill modeled after NY law.</p>	<p>Sen. Smith</p>
<p>Intervening in state climate superfund case</p>	<p>MSSIA is seeking to intervene in NJ's lawsuit against fossil fuel interests for lying for decades that products cause climate change</p>	<p>Intervention effort is ongoing, BPU and the AG oppose</p>	<p>BPU, AG, MSSIA, Gov. Murphy</p>
<p><u>S249/A4844 (Smith, Zwicker / Kennedy) - beneficial electrification</u></p>	<p>Requires BPU to establish and electric public utilities to prepare and implement beneficial building electrification and decarbonization program/plans</p>	<p>Passed 3-2 in SEN 6.20.24, referred to SBU, introduced in Asm. 9.23.24, referred to ATU, prospects uncertain but not fast tracked, fossil fuel industry and rate hike concerns are biggest hurdles.</p>	<p>Sens. Smith, Scutari, Sarlo; Asm. DeAngelo, Coughlin; gas and fuel merchants industry</p>

IEA Task 16 - 100% renewable optimization studies

Finding the lowest-cost combination of resources and measures to match load
 It's like baking a cake – the recipe must have the right ingredients in the right amounts.

Credit: Dr. Richard Perez, Clean Power Research



If each LRZ islanded themselves and optimized their resource blends, the electricity price would be:

4.65 c/kWh

Slightly more expensive than the MISO as a whole
 Regional resiliency possible without large-scale interconnection

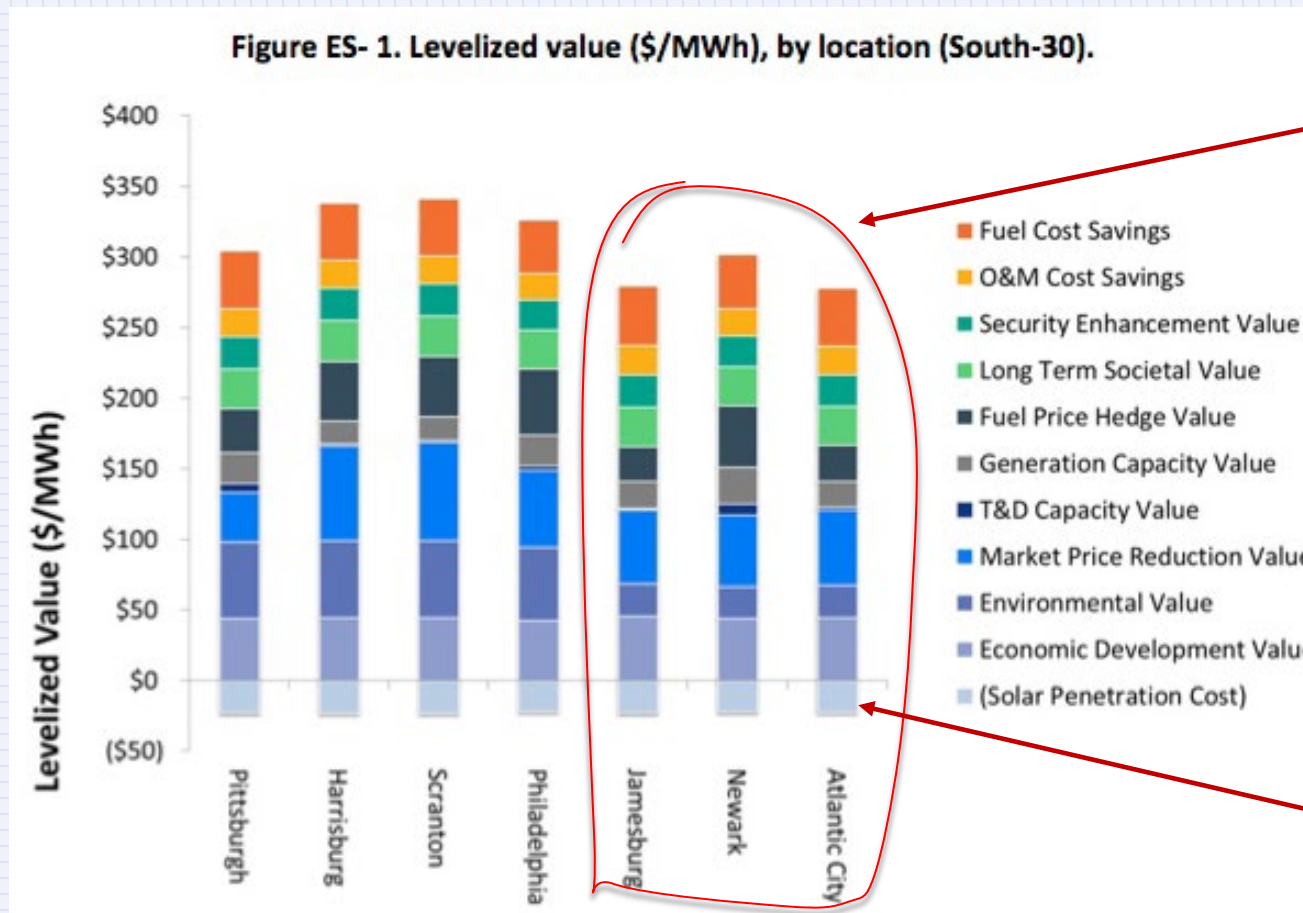
The “Full Value Stack” for Solar – More NJ Studies

EMP 2.1.6 states:

“Develop mechanisms to compensate distributed energy resources for their full value stack” (p. 101)

A study of the full value stack for solar was conducted in New Jersey:

The Value of Distributed Solar Electric Generation to New Jersey and Pennsylvania
Clean Power Research, 2012



The average value of solar (bundled energy + attributes) was \$264/MWH in New Jersey

The cost of grid modernization was included

The “Full Value Stack” for Solar – Important Values Yet to be Studied:

1. Forcing down fossil fuel prices by reducing demand

When renewables displace fossil-fueled power, they can force prices down regionally. This can be seen clearly in natural gas prices, which can spike severely during unusual circumstances such as extreme cold weather periods. On the other hand, when demand is low, prices stay low.

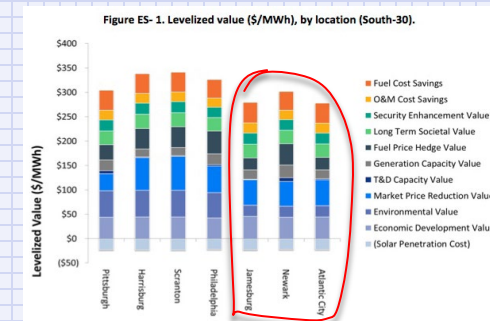
2. Resiliency

Solar+storage microgrids at scales from gas stations and hotels to hospitals to giant sewage and water treatment plants can keep essential community services going.

3. Direct return of incentive monies to NJ households, local gov’t, schools, non-profits, businesses - “Profit to the People”:

All renewable energy projects produce net earnings (or they don’t happen). But who gets those net earnings?

- Distributed, in-state solar is the only renewable resource that pays part or all of those net earnings to households, low-income subscribers, local & state government, schools, non-profits, businesses, etc. The benefits are in cash, and they are spread widely (although not perfectly evenly) among the populace.
- As an example, MSSIA studied public records for solar projects at 40 schools in NJ. It found that **for every \$100 in solar incentives paid to the school projects, the schools realize net earnings of \$150**. The projects provided benefits greater than the cost of incentives, and **whole towns benefitted**. Already, more than **35% of all schools** in New Jersey have built solar projects on site. The EMP would bring that to **100% before 2035**.
- Up until now, 1/2 to 2/3 of net earnings for nearly all local government, school, and non-profit projects have gone to 3rd party owners of the solar equipment. Now that the IRA allows “direct pay” of the ITC to government and non-profit entities, **the net earnings to public & non-profit entities can now double or triple**.



Solar in New Jersey returns incentive revenue to people, public & non-profit entities, and business locations in NJ.

Where does solar revenue go? Who benefits?

Number of Projects by Type as of Sep. 2023, and projected to 2035

	Sep. 2023	Projected to 2035
Type of Beneficiary	Number of Projects	
Schools	985	3,691
Universities	78	292
Local & State Government	466	1,746
Non-Profits, Charities, Houses of Worship	832	3,118
Farms	210	787
Business Locations	6,653	24,930
Residential	178,152	667,571
Special Needs Housing	60	225

(Extrapolated to 17.2 GW per the EMP LCS)

These project types, (along with Community Solar), share the benefits of revenue most broadly with the public

% of Public Schools

34.30%

>100%

(100% by 2031 or 2032)

Offsets to the costs of clean energy incentives: Energy costs for consumers will drop significantly

Clean energy incentive costs dropping off, energy savings, and potential new sources of funds, will lower net consumer energy costs substantially.

Furthermore, costs of electric infrastructure upgrades that serve in common distributed solar, EVs, building electrification, etc. should not be double-counted. Those costs should not be attributed to solar alone, but rather shared among those policy priorities.

Cost-reducing item:

Savings

Renewable incentives dropping off:

- | | |
|---|--------------------------------|
| 1. Legacy SREC payments expiring | \$820 million thru 2033 |
| 2. Nuclear ZECs not needed (Federal IRA funding fills that role) | \$300 million per year |

Energy cost savings scaling up:

- | | |
|---|--------------------------------|
| 3. Electric vehicles consumer savings on fuel alone by 2035 | ~\$1.5 billion per year |
| 4. Savings from energy efficiency gains, per EMP goals by 2035 | \$600 million per year |

Potential new sources of funds for renewables, EVs, efficiency:

- | | |
|--|----------------------|
| 5. Collecting the Orsted guarantee money | \$125 million |
| 6. Settling Platkin [NJ AG] v. Fossil Fuel Defendants and Climate Superfund Act | \$billions? |

Appendix 1 – Screenshot of MSSIA 2035 Renewables Model: Case 1: Current Policy (Executive Orders for Wind, EMP-LCS for Solar)

NUCLEAR AND CLASS 1 PRODUCTION BY 2035 - CASE 1: CURRENT POLICY - ACHIEVE WIND E.O. AND SOLAR EMP LEAST COST SCENARIO

Clean Energy Type	Case No.*	2035 Capacity	Unit	Amount according to:	Capacity Factor / Production Factor	Unit	2035 Production MWH	% of Total Load
Nuclear		3,452	MW	Existing	92.0%	% (Cap. Factor)	27,820,358	33.9%
Wind	1	7,500	MW	Exec. Order	42.5%	% (Cap. Factor)	27,922,500	34.1%
Class 1 In-State Non-Solar		400	MW	EIA data + projection	80.0%	% (Cap. Factor)	2,803,200	3.4%
Existing+Approved In-State Solar		5,574	MW	BPU Solar Activity Report 1-31-24	1,150	MWH/YR./MW (Prod. Factor)	6,410,100	7.8%
NEW In-State Solar	1	11,625	MW	EMP 2019 Least-Cost Scenario	1,175	MWH/YR./MW (Prod. Factor)	13,659,375	16.7%
IN-STATE CLEAN ENERGY AS % OF TOTAL LOAD								
Total In-State Clean Energy (sum of above)							78,615,533	95.9%
Out-of-State Class 1 Renewable (by difference)							3,350,518	4.1%
TOTAL LOAD							81,966,051	100.0%