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Comments on the NJ Energy Master Plan (EMP)

Topic: Clean Energy Innovation Economy

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1. Background

Before sharing feedback on the EMP, I want to provide a brief overview of my background in order to provide context for my comments. I was born and raised in Bergen County, and after moving away for college and work I recently returned to New Jersey and bought a home with my wife in Essex County. Most of my entire family either live in New Jersey or has roots here. My wife's family is the same.

I am also the cofounder and Chief Operating Officer of a New Jersey-based cleantech startup called Scanifly. We have created a software that uses drones and 3D modelling to help solar installers automatically survey and design projects. Prior to Scanifly, I spent 10 years in renewable energy. First, I was a solar rooftop installer in New Jersey, followed by several years as a Renewable Energy researcher for Bloomberg LP and several more years as a clean energy investment banker.

The following comments first and foremost come from the lens of a proud, proactive, and optimistic New Jersey resident. Secondly, I raise my comments from the perspective of a local business owner trying to build a clean energy startup in New Jersey.

2. Significant Progress

I want to first acknowledge the SIGNIFICANT progress made in the state over the last 1-2 years. It should be highlighted and commended!

- Upcoming Budget: ~$71M for clean energy from societal benefit
- Offshore wind auctions, notably Orsted award and educational programs
- Solar track record: ~3GW, 600 companies, 6,000 jobs according to SEIA
- NJ Partnership to Plug-In: 330K EVs in NJ by 2025
- Universities: Rowan offshore program, MSU economic and environmental modelling; Stevens hosting oceanography program with NJTC.

These are a big deal! But this must only be the beginning!

3. Opportunity for More: Direct Feedback on EMP

This leads me to my direct feedback. New Jersey's cleantech innovation economy is lacking, especially in comparison to nearby states New York and Massachusetts. Those two states in particular are doing much more to spur clean energy innovation and enticing my company to leave New Jersey.

Recently, Scanifly was accepted to and is leasing space at the Urban Future Lab (UFL) ACRE program in Brooklyn; notably, we are still domiciled in Hightstown, NJ. Our UFL program has significantly more benefits than anything New Jersey offers.

- As an example, here's a snapshot comparison of New York versus New Jersey for the clean energy innovation economy:

	New York	**New Jersey**
State Funded Incubators	6 Total - ACRE, CEBIP, Tech Garden, West Valley, etc.	N/A
Early Stage Financing	$100K Ignition grant $1M GenusNY grant Green Bank	N/A
Competitions	43North, 76West, EmPower NY, etc.	N/A
Personnel Support	Startup coaches, reduced cost interns, presentation design specialists, facilitate strategic partners, university test space, investor introductions.	N/A
Corporate Benefits	AWS, Google cloud credits, Stripe, Hubspot etc. Corporate sponsorship, collaboration and pilot program opportunities	N/A

Despite my preference for remaining in New Jersey, the aforementioned New York-based perks are a strong case to leave my hometown state. Most of New Jersey's startup assistance is through the NJEDA, which often commences after a startup achieves funding. EDA's CoVest (i.e. non-dilutive follow-on financing), Angel Tax Credit and Ignite (i.e. discounted office space) programs are only good if I am making some revenue and secure investment. Many startups need early stage funding to get going. Furthermore, New Jersey's angel investor community typically requires revenue and traction before making investment, not to mention there are few clean energy-focused investors in state anyways. The early stage market is very difficult as a result, thus not enticing for startups to incubate in the state.

Additionally, the lack of startup ecosystem creates a brain drain. Many of the universities teach coursework on renewable energy and sustainability, yet students don't think to build clean tech innovations in New Jersey. Corporates with a large presence in the state are leaders in clean energy nationally, and some globally, but can act in silos.

If the state wants to commit to clean energy, it must invest in a robust, inclusive and technically advanced ecosystem that brings all of the stakeholders to the table. Unlike building huge renewable energy power stations, developing transmission and gas lines, or launching energy efficiency programs, seeding a clean energy innovation economy takes just a few million dollars, collaboration and good leadership. We have all of that in New Jersey. It would be a shame not to allocate it accordingly.

4. Solution: Case Study of Rutgers EcoComplex in Bordentown

One notable state institution is the Rutgers EcoComplex in Bordentown, NJ. It serves as a microcosm for what could be possible in New Jersey:

- The EcoComplex, under Serpil Guran's leadership, has accomplished a lot without state funding and in a less accessible location:
    - 12 companies on average incubated every year across emerging clean tech
    - 100 new clean energy jobs created in last 8 years
    - Hundreds of retrained workers annually through accelerators and boot camps
- *The Ecocomplex can be duplicated around the state!*

5. Ideas to Consider

New Jersey has the infrastructure already in place to create clusters in several cities around the state, which will lead to homegrown innovation, sustainable economic development, and jobs for people of varying socioeconomic strata.

- Clusters / Incubators in notable locations, where innovation is already happening:
    - Cape May: Drones – Drone UAV Park
    - Atlantic City: Offshore wind – Orsted, existing wind turbines by WWTP
    - Camden: Batteries – Gridless Power, leading battery innovator
    - Trenton: Waste / Recycling – Terracycle, visionary company for creating solutions for waste and recycling.
    - Wall Township / Jersey City: Solar – Dozens of national solar companies
    - New Brunswick: Clean Energy Center – Rutgers, center of state
    - Newark: Vertical Farming – Aerofarms, Panasonic, Newark Conservancy

Note: I have not consulted with or speak on behalf of any of the organizations listed above. I am only just familiar with each of them and mention them as examples in the state.

While New Jersey doesn't have a notable major city like Boston, New York or Philadelphia, the combination of each smaller city can create a major hub in the middle of the eastern seaboard that would rival anywhere in the country. New York's upstate communities have done this with optical technologies in Rochester, biomedicine in Buffalo, and UAVs in Syracuse. A cluster mentality leveraging all local stakeholders is possible!

Some additional low investment / high return ideas:

- The Solar Foundation's Sunshot program works with muni's to expand solar capacity on local level.
- The Cleantech Open, the nation's oldest and largest clean energy accelerator program, can partner with EDA to spur startup ecosystem.
- Early stage financing opportunities for startups, retraining programs, university research, events; attract talent and companies from around world with few attachments to the state.
- Corporate sponsors for centers, programs, competitions and events.
- Free office space related to industries, similar topics, near main public transit corridors.

New Jersey has the foundation already in place to create a clean energy innovation economy; it just needs a little more investment and strong, collaborative and visionary leaders to put the programs in place.

6. Scanifly Additional Information

Scanifly has created a 3D modeling software enabling solar developers to more efficiently survey and design solar projects. The software, which brings real-world context to every project, leverages drone imagery and AI to reduce time by up to 90% and provides greater accuracy than satellite imagery, saving developers thousands of dollars per system. Additionally, workers remain off the roof until construction commences, which increases safety and reduces insurance premiums. In Scanifly's software, users can conduct a full suite of solar project functions, including creating arrays, simulating shading analysis, and forecasting production.

Thank you for your consideration of my comments.