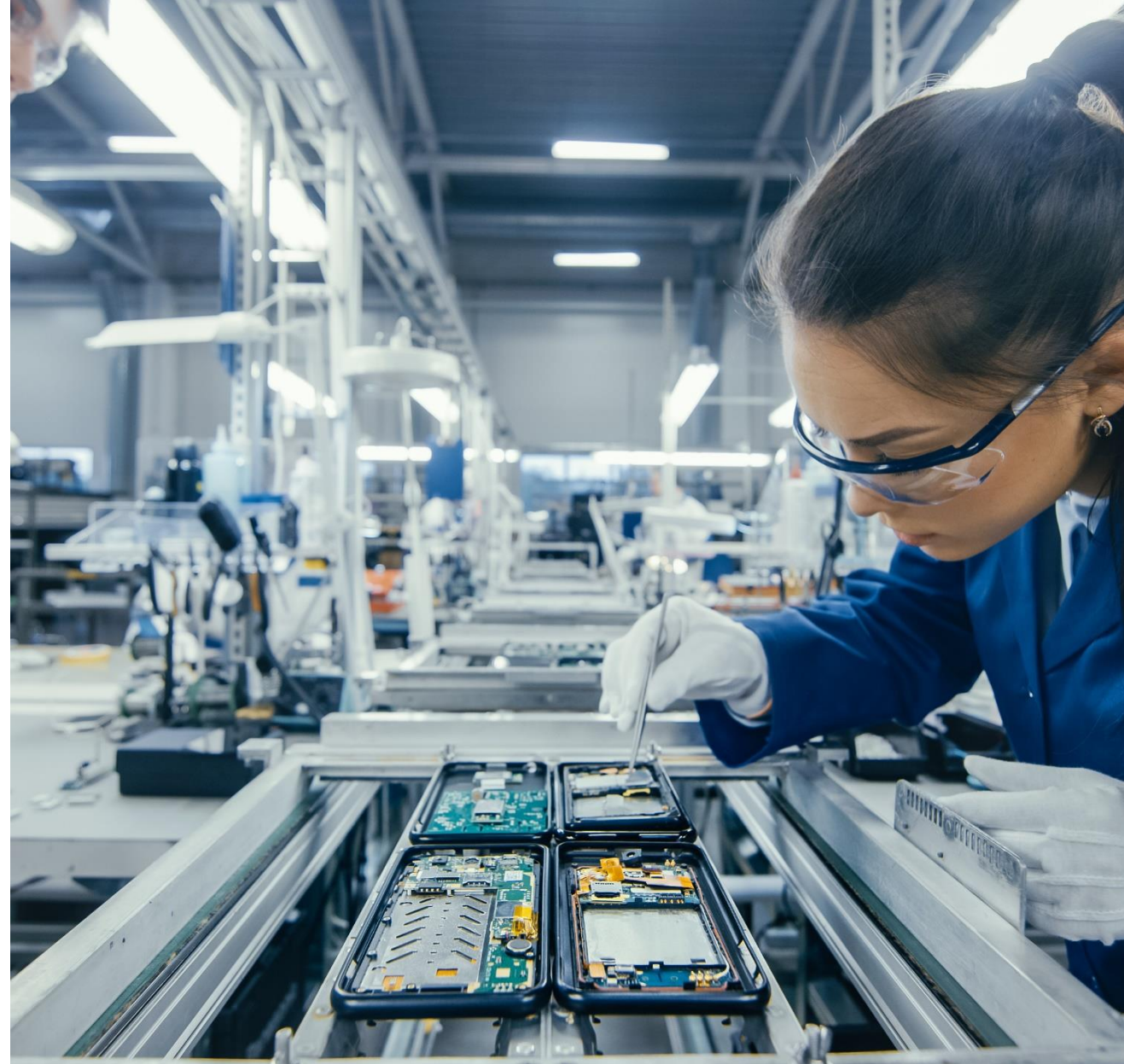


**NEWMARK**

# New York Southern Tier Cleantech Strategy

**GLOBAL CORPORATE SERVICES**  
NOVEMBER 13, 2024



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# Project Team and Background

SOUTHERN TIER | CLEANTECH STRATEGY



# Newmark Project Team



**Bob Hess**  
Vice Chairman  
Chicago, IL



**Kim L. Moore**  
Exec Managing Director  
Dallas, TX



**Brian Peterson**  
Managing Director  
Minneapolis, MN



**Emma Nippe**  
Director  
Chicago, IL



**Alan Reeves**  
Sr. Managing Director  
New York, NY



**Joe Gioino**  
Sr. Managing Director  
New York, NY



**Agnes Cikowska-Teczar**  
Consultant  
Chicago, IL



**Bhargava Kotapalli**  
Consultant  
Dallas, TX



**Carlos Sanchez**  
Director  
Mexico City, Mexico



**Gabriel Dion**  
Managing Director  
Quebec City, QC

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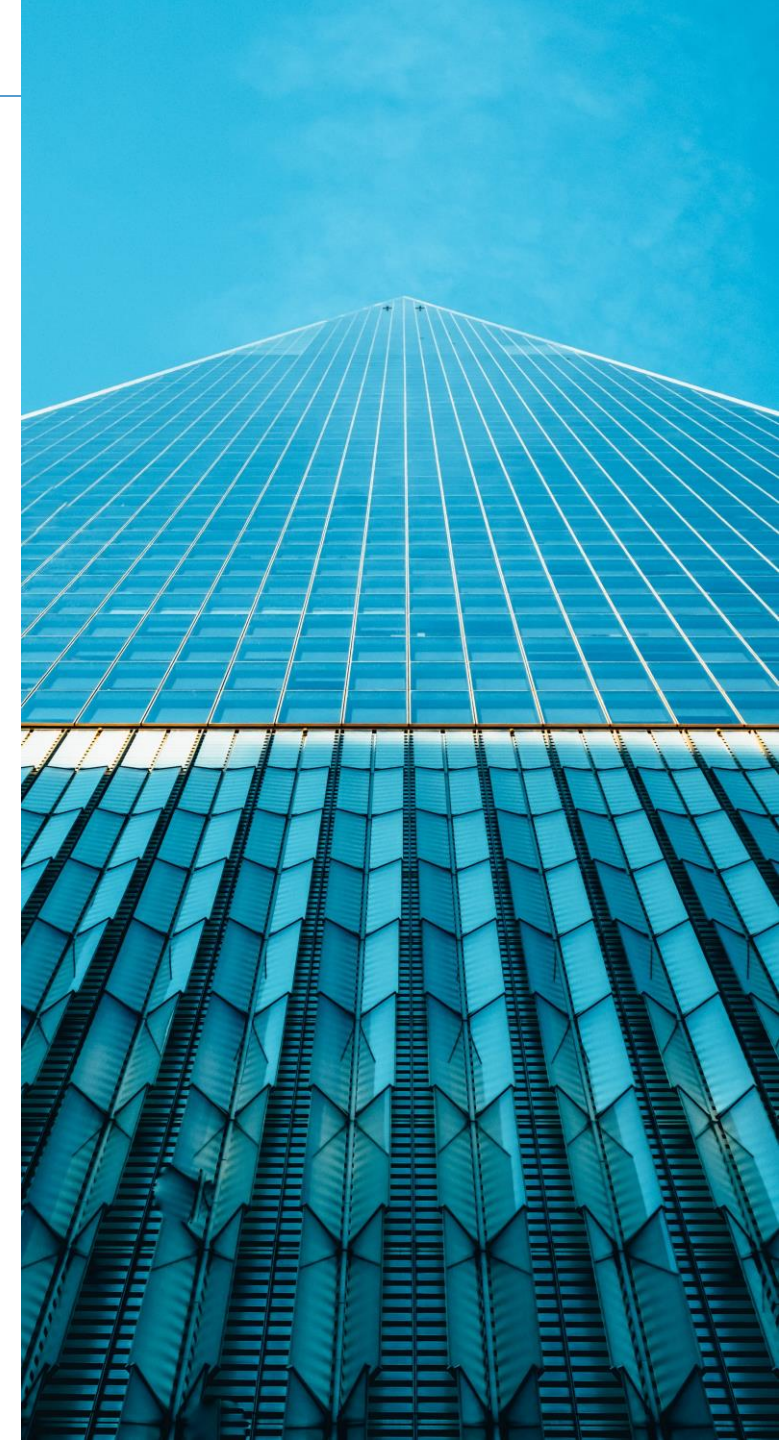
## About Newmark

Newmark Group, Inc. (Nasdaq: NMRK), together with its subsidiaries (“Newmark”), is a world leader in commercial real estate, seamlessly powering every phase of the property life cycle.

Newmark’s comprehensive suite of services and products is uniquely tailored to each client, from owners to occupiers, investors to founders, and startups to blue-chip companies. Combining the platform’s global reach with market intelligence in both established and emerging property markets, Newmark provides superior service to clients across the industry spectrum.

For the twelve months ended September 30, 2024, Newmark generated revenues of over \$2.6 billion. As of that same date, Newmark’s company-owned offices, together with its business partners, operated from nearly 170 offices with more than 7,800 professionals around the world.

To learn more, visit [nmrk.com](https://nmrk.com) or follow [@newmark](https://twitter.com/newmark).



# Newmark By the Numbers

7,800+

PROFESSIONALS

~170

OFFICE LOCATIONS

~\$2.6B

REVENUES  
TRAILING 12 MONTHS

~\$1.7T

TRANSACTION VOLUME  
2022 + 2023

55+

COMPANIES ACQUIRED,  
SINCE 2011

95

YEARS IN BUSINESS,  
FOUNDED IN 1929

Notes: Headcount and client service locations include independently-owned business partners. Excluding these business partners, we had over 7,400 employees in more than 140 offices as of September 30, 2024. Our revenues and volumes are for Newmark company-owned offices only. Volume figure is the notional value of leasing, investments sales, mortgage brokerage, and GSE/FHA origination transacted by the Company as well as the estimated value of all properties appraised by our V&A businesses for the past two calendar years.

# Economic Development Consulting

Our team has expertise and specialization in economic development but is also recognized as global corporate location strategy and site selection consultants.

This combination of skill and exposure provides us with insights into global industry trends, corporate decision making and the real-world result of economic development strategy.

## *Our Services*

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**Economic Development Strategy**

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**Competitiveness Benchmarking**

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**Asset-Based Community Development**

---

**Target Industry Analyses**

---

**Stakeholder Engagement**

---

**Workforce & Talent Development**

---

**International Development & FDI Attraction**

---

**Industrial Site Identification & Assessment**



# Economic Development Consulting

We partner with public and private sector clients to develop forward-looking strategies that lead to economic growth.

## Economic Development Strategy



Creates an overarching economic development strategy to leverage regional assets and competitive advantages. Ensures efforts are balanced across areas of attraction, retention, and workforce pipeline development.

## Competitiveness Benchmarking



Identifies competitor geographies for specific target industries. Benchmarks study region against peers to identify gaps in business environment. Identifies competitive advantages to use in outreach to target industries and site selectors.

## Asset-Based Community Development



Evaluates community assets in the context of today's economy. Recommends strategies for placemaking, housing, workforce development, and entrepreneurship. Analyzes economic/fiscal impacts, infrastructure, and redevelopment priorities.

## Target Industry Analyses



Identifies industry sectors, subsectors, and end users that best fit the strengths and assets of a region's business environment and culture.

## Stakeholder Engagement



Assesses effectiveness of marketing strategies, websites, social media presence, and digital marketing initiatives. Develops goals and implementation plans for marketing strategies.

## Workforce & Talent Development



Identifies regional labor assets. Determines how to leverage assets to attract new jobs and investments in target industries. Identifies skills gaps that can be addressed through long-term education and training initiatives.

## International Development & FDI Attraction



Identifies most promising opportunities to attract global investment through strategy development and stakeholder and investor education. Identifies trade promotion opportunities that leverage regional advantages.

## Industrial Site Identification & Assessment



Creates market-based strategies to promote private investment in local communities. Evaluates shovel readiness of local sites for major projects. Identifies market-driven development opportunities for different use types. Compares real estate supply to needs of growing industries and their supply chains.



# Our Subject Matter Experts

## Location, Portfolio, And Asset Strategies



**Bob Hess**  
Vice Chairman  
\*Chicago, IL



**Brad Lindquist**  
Exec. Managing Director  
\*Chicago, IL



**Gregg Wassmansdorf**  
Sr Managing Director  
\*Toronto, Canada



**Spencer Schobert**  
Sr Managing Director  
\*San Francisco, CA



**John Longshore**  
Sr Managing Director  
\*Greenville, SC



**Alan Reeves**  
Sr Managing Director  
New York, NY



**Charlie Smith**  
Managing Director  
Washington, DC



**David Dera**  
Sr Managing Director  
\*Berlin, Germany

## Economic Incentives Advisory



**Joe Gioino**  
Sr Managing Director  
New York, NY



**Brooklin Salemi**  
Sr Managing Director  
Atlanta, GA



**Gabriel Dion**  
Managing Director  
Quebec, Canada



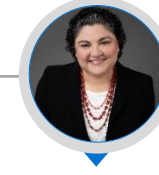
**Perla Lopez**  
Director  
Dallas, TX



**Carlos Sanchez**  
Managing Director  
Mexico City, Mexico



**Erin Schwartz**  
Managing Director  
Chicago, IL



**Kim L. Moore**  
Exec Managing Director  
\*Dallas, TX

## Economic Development Consulting



**Brian Peterson**  
Managing Director  
Minnesota



**Emma Nippe**  
Director  
Chicago, IL



**Gillian Apps**  
Sr. Analyst  
Toronto, Canada

## Data, Economics And Spatial Analysis



**Ramya Gowda**  
Managing Director  
Seattle, WA



**Carrie Zethmayr**  
Director  
Chicago, IL



**Terrance Hall**  
Sr Location Analyst  
Chicago, IL



**Joshua Gruen**  
Location Analyst  
Chicago, IL



**Agnes Cikowska-Tecczar**  
Consultant  
Chicago, IL



**Bhargava Kotapalli**  
Consultant  
Dallas, TX



**Johanna von Seidel**  
Consultant  
Berlin, Germany



**Karol Rybaczuk**  
Consultant  
Warsaw, Poland



**Patryk Dybek**  
Consultant  
Warsaw, Poland

# The Global Strategy Difference

Industry leading strategy, operations, real estate, incentives, and economic development professionals in one integrated platform.

Client benefits amplified by management consulting and real estate advisory built on a foundation of best-in-class decision support methods, analytical tools and investigative due diligence.



# Executive Summary

SOUTHERN TIER | CLEANTECH STRATEGY



# Executive Summary

## Project Funders

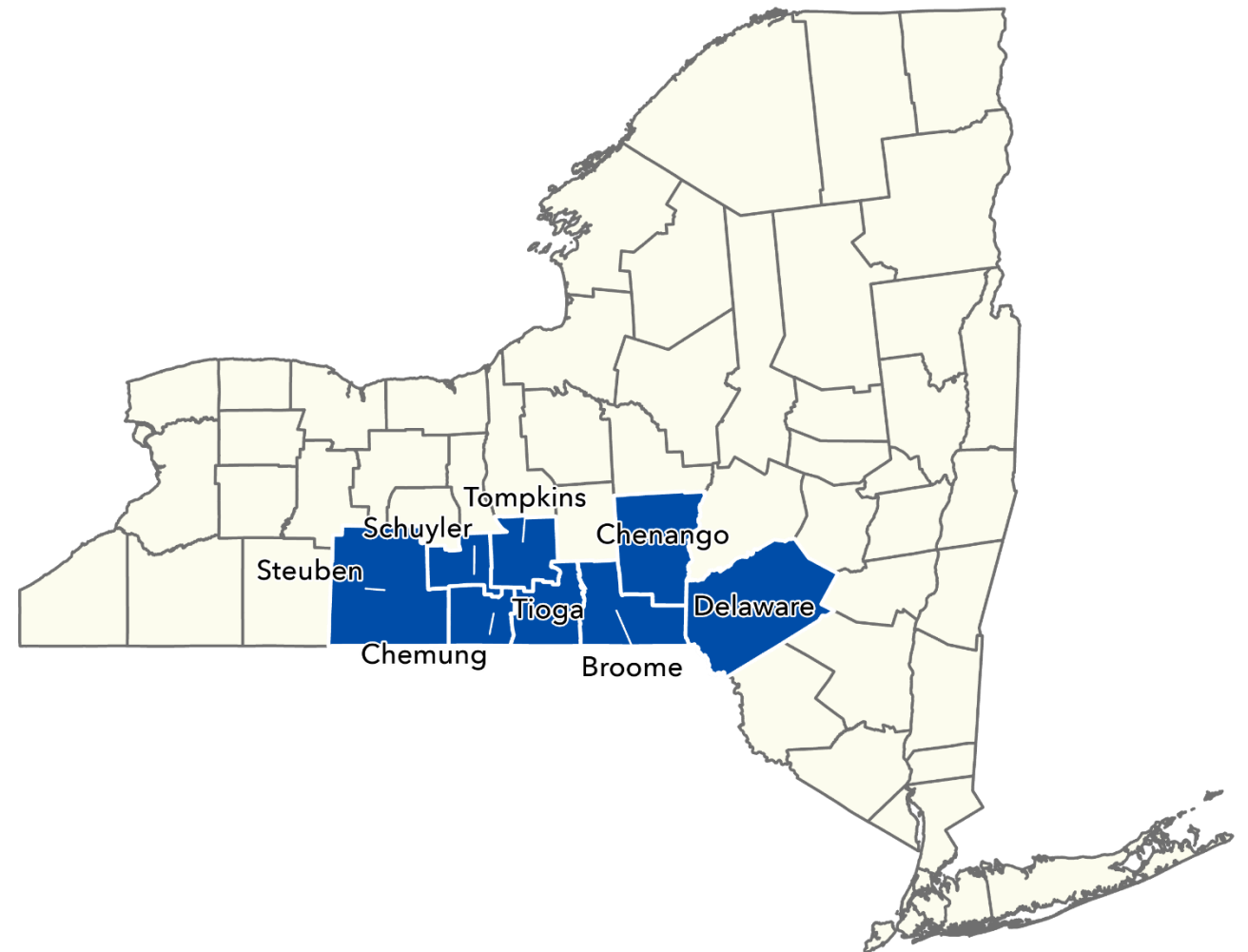


# Executive Summary

## Project Understanding

New York and its Southern Tier region are undergoing a major economic transformation driven by a shift toward clean energy manufacturing and clean energy generation. The Southern Tier has a strong reputation as a leader in this area, with major companies and globally-recognized higher education institutions conducting research in clean energy.

A partnership of southern Tier IDAs have retained Newmark to identify ways to leverages local assets to build out a clean energy and cleantech ecosystem.



# Executive Summary

## Clean Energy Transition and the Southern Tier

The clean energy transition occurring in New York and the Southern Tier is driven by larger national trends that impact not only generation, but also manufacturing and research and development as new technologies evolve and are deployed to support renewable energy goals.

Major nationwide drivers of this transition that affect the Southern Tier include:



### **Alternative Energy Transportation**

Consumers and businesses are transitioning away from gasoline powered transportation equipment to alternative energy sources. This transition is firmly underway in the consumer automotive market and is also beginning to materialize in other markets such as heavy equipment, trains, and aerospace.



### **Utility-Scale Battery Storage**

As more renewables come online, there is an increased need to store renewable power that is generated when supply exceeds demand. New technologies are being employed to create utility-scale batteries that can help balance loads on the electric grid.



### **Electric Grid Modernization**

The nation's aging electric grid must be upgraded to accommodate increased business and consumer power demand. This includes modernizing existing infrastructure while also building out new infrastructure that allows grids to interface with renewable sources.



### **Advanced Batteries**

Increased rates of battery adoption have been buoyed by research on ways to improve the efficiency and longevity of batteries. Researchers are exploring and testing new materials and technologies that will allow batteries to be employed in new environments and power new devices.



### **Renewable Energy Transition**

A rapid transition to renewable energy is leading to the growth of several new large-scale industries such as solar panel, wind turbine, battery, and hydrogen fuel cell manufacturing. These industries all require components to manage the flow of electricity between the generation source and electric grid.



### **Battery Supply Chain Security**

Federal and state policymakers are focused on developing a domestic battery supply chain that will establish the nation as a global leader in clean energy manufacturing and innovation.

# Executive Summary

## Scope of Work



**1. Project Mobilization,  
Stakeholder Engagement,  
& Data Gathering**

**2. In-Market  
Assessment**

**3. Target Sectors,  
Challenges, and  
Opportunities**

**4. Recommendations  
& Implementation  
Roadmap**

*Kickoff*

*Information Gathering*

*Existing Conditions Analysis*

*Stakeholder Engagement*

*Regional Tour*

*Industrial Sites Discovery  
and Analysis*

*Development Readiness  
Scorecards*

*Target Sector Identification*

*Asset Mapping*

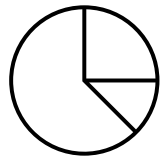
*SWOT Analysis*

*Strategies and  
Recommendations*

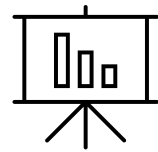
*Implementation Plan &  
Success Metrics*

# Executive Summary

## Project Foundations



Industry & Occupation Data



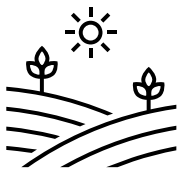
Demographic & Education  
Data



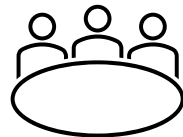
In-Person Market Visits



Peer Community  
Comparison



Site Assessment



Employer Interviews &  
Roundtable Discussions



Workforce Development  
Provider & Other Stakeholder  
Interviews



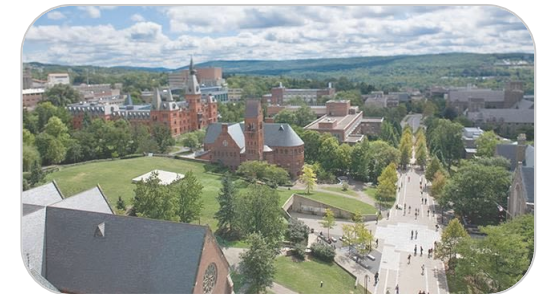
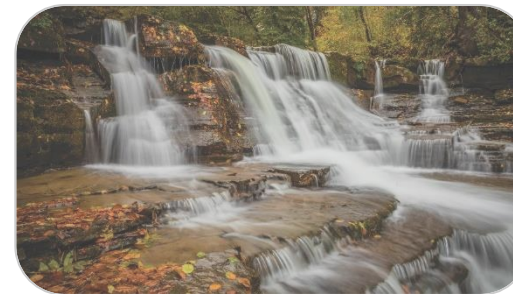
Site Selection  
Perspective



# Executive Summary

## Economic Development and Site Selection – Southern Tier Competitive Perspective

- **The urgency is now** – the competition isn't waiting!
- Economic Development is a **fast moving and competitive** ballgame.
- Competitive communities are stepping up their game **with new programs, marketing strategies, incentives, site readiness funds, improved infrastructure, and robust workforce development programs.**
- Southern Tier economic developers have a **good reputation among cleantech stakeholders** and state and local government officials.
- Some cleantech sectors have **significant space and power requirements.** The region must address the shortage of sites and buildings with adequate infrastructure to remain competitive.
- In addition to ensuring the region has adequate physical space to support new opportunities, local economic development stakeholder must focus on **building out an ecosystem** that allows businesses to grow and thrive in the region.
- The region must begin **thinking proactively** to ensure that it can capitalize on these opportunities, this could be a challenge in some parts of the region.
- The Southern Tier has a **value proposition**, but few are aware of how and where the region punches above its weight.



# Executive Summary | Assessment – Top Strengths

Top Selling Points – Lead with these!

**S  
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S**



**Higher Education System**



**Institutional Knowledge in Electricity Management**



**Housing Affordability**



**Economic Gardening Opportunities**



**R&D to Commercialization Opportunities**



**Engaged Political Leadership**



**Proximity to Metropolitan Markets**



**Business-Workforce Development Relationship**



**Quality of Life**



**Contract Manufacturing Base**

# Executive Summary | Assessment – Top Challenges

Top Challenges – Work to address

C  
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E  
S



**Site Readiness**



**Electric Capacity**



**Regional Message & External Perception**



**Population Decline / Aging Workforce**



**Brain Drain**



**Community Access & Transportation**



**NIMBYism & Parochialism**



**Housing Quality & Availability**



**Aging Building Stock**



**Development Process / Reactive Nature**

# Executive Summary

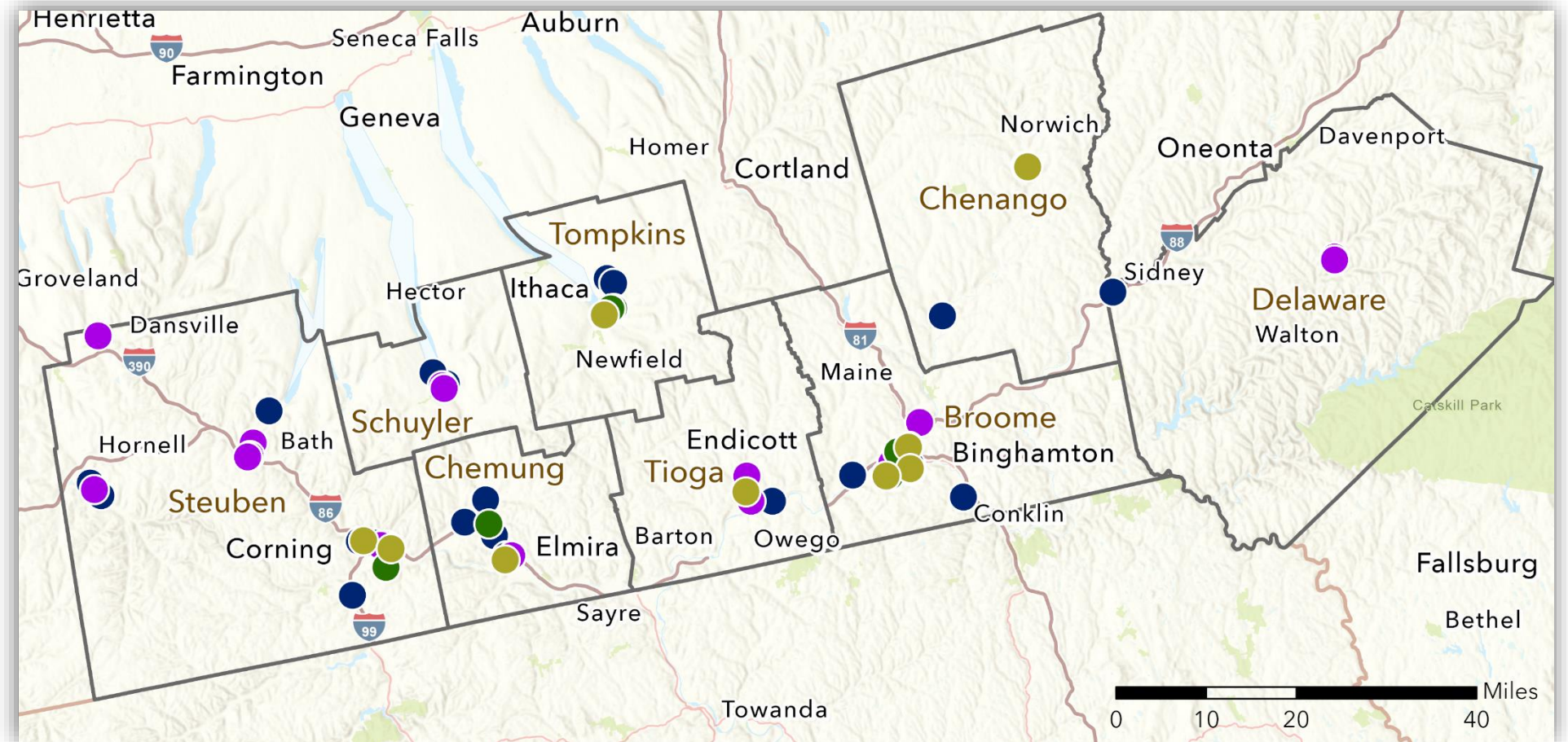
## Stakeholder Engagement

The Newmark team engaged with over 100 stakeholders throughout the project, utilizing different avenues, including virtual and in-person interviews and roundtable discussions.

- ☑ 100+ stakeholders engaged
- ☑ 8 counties covered
- ☑ 16 consultant days in market
- ☑ 29 businesses engaged

Southern Tier Stakeholders

- Business
- Government
- Higher Education
- Nonprofit



# Executive Summary

## Stakeholder Engagement | Key Findings

Newmark's data-driven process is supported by local stakeholder interviews and an in-person tour of the market. Newmark connected with local stakeholders through one-on-one interviews and roundtable discussions in person and virtually.

### Business Environment

- Great concern among businesses regarding **state-level policy** and its effect on corporations' location decision-making.
- **Local policy can also pose challenges** to timely development.
- Strong regional assets to build on, but **too many institutions operating in silos**.
- **Strong presence of engineering, sales, and R&D talent** that can support cleantech supply chain development.
- **World class R&D ecosystem**, lack of recognition from outsiders.
- Strong presence of **machine shops, contract manufacturers**, and Tier 1 suppliers that can support clean energy manufacturing.
- Business community has **positive opinions of IDAs**.

### Talent Pipeline

- **Strong manufacturing talent pool** that can support existing businesses.
- Higher Education institutions producing **talented engineers**, but many **challenges with brain drain**.
- **BOCES, Community Colleges do a good job** working with employers and developing curriculum, but face **challenges getting students interested in manufacturing**.
- **Concern** among some employers and workforce development officials about **scaling up to meet future needs** in skilled trades.

# Executive Summary

## Stakeholder Engagement | Key Findings

### Cleantech Ecosystem

- Region has **many assets to build on**, including higher education institutions (Cornell, Binghamton University), federal funding (Tech Hub, NSF Engine), and large businesses looking to transition toward electrification.
- Many businesses **interested in engaging** with clean energy R&D at Cornell and Binghamton University but are **uncertain about how to do so**.
- Some **community skepticism about the extent of opportunity** within battery space.
- Strong presence of manufacturing firms that could integrate into the clean energy manufacturing supply chain, but **many businesses have not considered the opportunities**.

### Sites & Infrastructure

- The region is held back by a **limited supply of developable sites**.
- Some communities may be **opposed or unsupportive of new development**.
- Electric capacity is a concern across the region. For the most part, the grid supports existing manufacturing needs but could **prohibit future development** in some areas.
- New staff at NYSEG present new opportunities for economic developers to **build new relationships**.

### Quality of Life

- The region offers a **4-season climate**, access to many outdoor amenities.
- **Attractive for families**, but challenges in attracting and retaining younger talent.
- **Limited housing stock options** for young professions.
- **Crime in urban areas** is top of mind for some businesses and stakeholders.

# Executive Summary

## Stakeholder Engagement | Quotes

“Very few people recognize what is happening in the Southern Tier when it comes to battery technology and development. Most battery businesses don’t know that that the Southern Tier should be on their short list.”

– Economic Development Stakeholder (Transplant)

“One of the biggest problems here is lack of space. There are very few vacancies for industrial and not much spec development.” – Business Leader (Native)

“The Southern Tier geography is unfortunately fragmented. There’s a sense of “every community for itself.” – Stakeholder (Transplant)

“What some of the companies here are doing is truly amazing. The biggest challenge the community faces is getting people here to see it.” – Business Leader (Transplant)

“Right now there is a lot of anti-business sentiment due to our prior experiences with large companies. We need to do a better job informing the region’s residents about business’ role in our success.” – Business Leader (Native)

“Our story for the longest time was shoes and computers. Now we just don’t have a story at all.” – Stakeholder (Native)

“We try to work with the electrical utility to get capacity information about sites, but it takes weeks, and sometimes we don’t get a response at all.”

– Economic Development Stakeholder (Native)

“We’re still waiting to see how everything going on at Binghamton University impacts us. We’ve seen it benefit parts of Binghamton, but it’s not benefitting other parts of the region right now.” – Business Leader (Native)

“Some people are saying the battery opportunities have already bypassed us. We want to understand what’s achievable for us here in the Southern Tier.”

– Business Leader (Native)

“We would like to get involved with the battery research at Binghamton University but we’re not sure how to start that conversation.” – Business Leader (Native)

# Executive Summary

## Stakeholder Engagement | Quotes

“Most of our high school students don’t see manufacturing as a viable career path. The perception is changing for the better, but it is still a problem.”

– Workforce Development Stakeholder (Native)

“The NIMBYism here is rampant. We get opposition to new industrial development and even new housing development. It’s a constant battle.”

– Business Leader (Native)

“We are all excited about what’s going on at Binghamton University. It has grown a lot in the last 20 years, it’s becoming a top-tier school, but that means it’s harder for locals to get in.” – Stakeholder (Native)

“We need to improve our visibility with the State. The State is a great partner, but the Southern Tier is certainly not top of mind in Albany.”

– Government Stakeholder (Native)

“Young people disengaging from the workforce is an issue. We need to do a better job at getting them back to work.” – Business Leader (Native)

“Transportation is a major challenge. We have people that want to get workforce training, that want to be involved in workforce development, but we don’t have the training resources anywhere nearby.”

– Workforce Development Stakeholder (Native)

“The community would be excited to have a new clean energy business here, but there would be a lot of panic about that business taking labor from other employers.” – Workforce Development Stakeholder (Native)

“We wanted to expand locally, but there were no buildings that suited our needs, and land is at a premium. We couldn’t find anywhere to build.”

– Small Business Leader (Transplant)

“The entry level labor pool here is good. Lots of workers are native and lots of familial connections make it easy to find workers.”

– Workforce Development Stakeholder (Native)

“As a startup, it is quite difficult to recruit folks to come here. Even taking New York City out of the equation, there are lots of other places upstate that have more selling power.”

– Small Business Leader (Transplant)



# Executive Summary

## Stakeholder Engagement | Electric Utility Engagement

Utilities are some of the most critical partners in the economic development process, and as power availability and capacity has become more and more of a limiting factor across the US, the responsiveness of local electric utilities often has an outsized impact on the outcome of a corporate site selection project.

It is understood by site selectors and companies that appropriate infrastructure may not be available to serve a site unless costly and time-intensive solutions are implemented. This can be an acceptable status, assuming the appropriate details and plans for such upgrades are provided. Cost, and often most importantly, the time required for implementation, are carefully considered during the decision-making process.

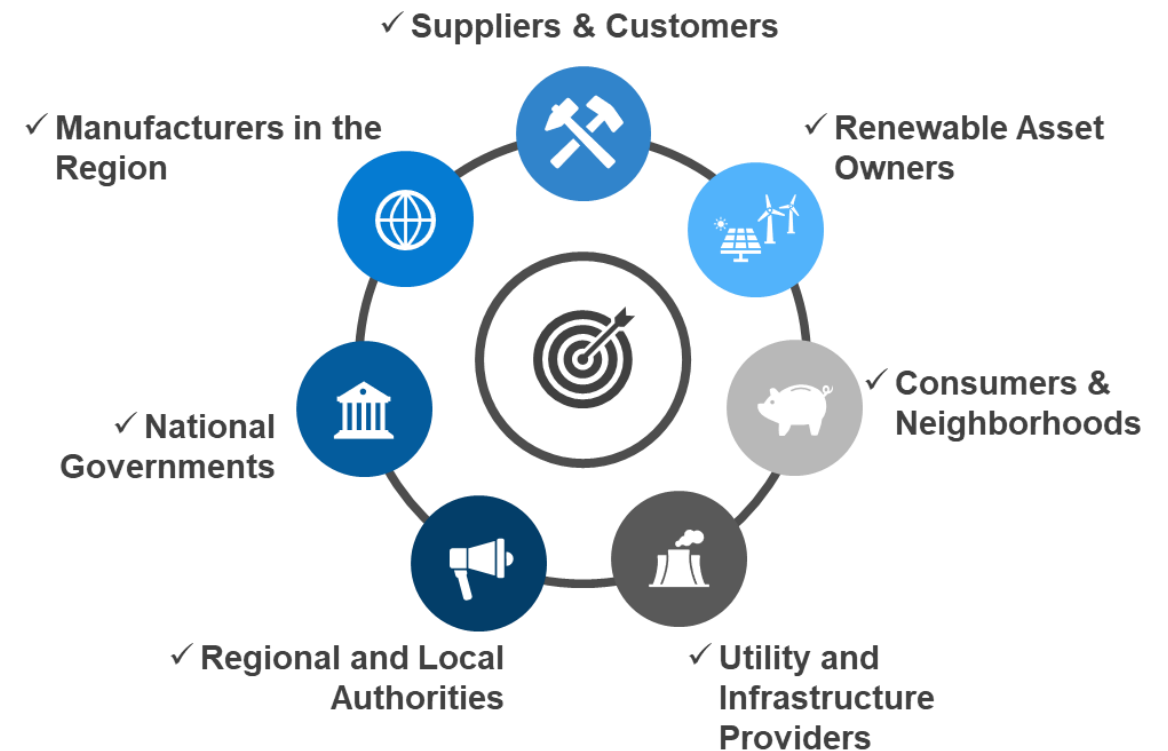
What is not acceptable, though, is no response, or an inability to indicate what *may* be available. Non-binding information, including feasibility-level analysis, should be accessible for all priority sites in a utility service territory, with the caveat that full details cannot be confirmed until a formal system capacity study has been completed. This is sufficient for business planning purposes pending additional engineered solutions, however...

***it is unlikely for a real estate solution to get to the engineered solution stage if there is no feasibility-level response.***

Information provided by companies and consultants can sometimes be minimal, limiting a utility's ability to respond. That being said, top utilities across the US have developed response processes that take this into consideration.

**Minimum information *typically* provided during the RFI process that top utilities have no issues providing preliminary responses in two weeks or less:**

- Annual Consumption
- Peak Load
- Annual Ramp



# Executive Summary

## Real Estate Site and Building Assessment

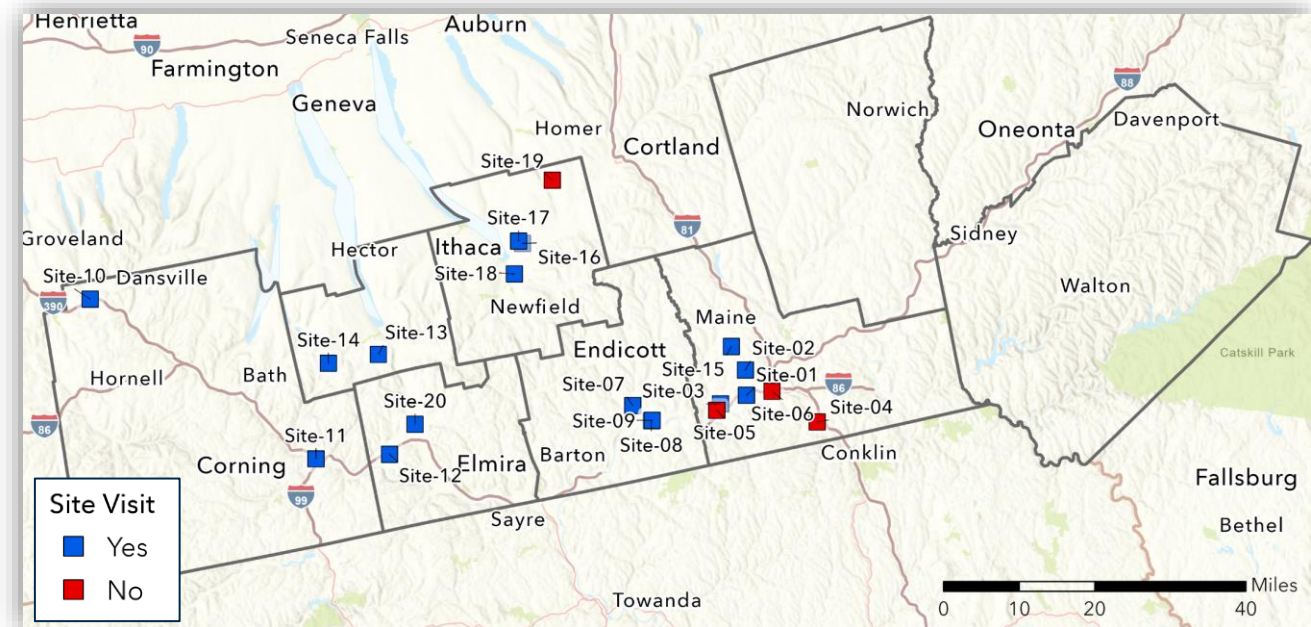
The Newmark team submitted an RFI to the region’s eight IDAs to identify sites that could support future cleantech development. The team then reviewed RFI responses and conducted an in-person to the community to assess the sites.

The RFI and site assessment process followed a “mock site selection” approach to assess the community’s understanding of available sites, assess the community’s ability to respond to RFIs, and assess sites for future development opportunities. The Newmark team received 20 sites submitted for review. The team visited and reviewed 16 sites, assigning them to one of three categories.

**Competitive** – Expected to be competitive at a national level, pending project requirements, with a demonstrated ability to meet general timelines and capacity requirements with optimal flexibility (risk is associated with all sites, but this category does the best job of minimizing risk of meeting potential projects’ requirements and timelines).

**Regional Opportunity** – Needs some work in critical areas and/or not nationally competitive, but provides appropriate site development opportunity for regional needs.

**Challenged** – Needs significant work and/or a very unique project; not expected to be a true competitive asset in an objective site selection analysis.



No.	Name	No.	Name	No.	Name	No.	Name
1.	600 Main	6.	Binghamton Plaza	11.	Painted Post Foundry	16.	Cornell Business & Tech Park
2.	Broome Technology Park	7.	MATCO	12.	Airport Corporate Park South	17.	BorgWarner
3.	Huron Campus (Building 256)	8.	Sanmina	13.	Schuyler County Business Park	18.	SouthWorks
4.	Broome Corporate Park (Site 1)	9.	Victory	14.	Camp Monterey SHOCK Camp	19.	Groton Bus Park
5.	Endicott Plaza	10.	Wayland Business Park	15.	Broome County Airport Sites	20.	Southern Tier Logistics

# Executive Summary

## Site Selector Perspectives

Site	County	Property Type	Size (acres/SF)	Scoring Category	Initial Newmark Reaction (non-technical)
Wayland Business Park	Steuben	Land	152	Competitive	Attractive site that is expected to enable development flexibility for a wide array of potential users
Cornell Business and Technology Park	Tompkins	Land	34	Competitive	Good example of a well-executed research university corporate park
Schuyler County Business Park	Schuyler	Land	31	Competitive	Attractive industrial park setting expected to offer development flexibility for most light industrial uses
Broome Technology Park	Broome	Land	526	Competitive	Largest site opportunity that may represent the best potential for utility intensive cleantech project
600 Main	Broome	Land	26	Regional Opportunity	Unique property that could be a good option for development; flooding concerns create uncertainty
Airport Corporate Park South	Chemung	Land	200	Regional Opportunity	Attractive setting but expected to be most aligned with small, light-industrial operations
Broome County Airport Sites	Broome	Land	286	Regional Opportunity	Topographical challenges around the site create limited opportunities to leverage airport proximity
Painted Post Foundry Site	Steuben	Land	52	Challenged	Successful development is expected to be challenging, with minimal observed pathways to development
Camp Monterey SHOCK Camp	Schuyler	Land	25	Challenged	Below average industrial and commercial attributes create a difficult environment for development
Southern Tier Logistics	Chemung	Building	565,500 SF	Competitive	Attractive, established industrial park with a variety of space availability for immediate occupancy
Borg Warner	Tompkins	Building	224,000 SF	Competitive	Legacy industrial property that still appears to be in great condition
MATCO	Tioga	Building	152,774 SF	Competitive	Above average existing industrial property that possesses many move-in-ready qualities
Huron Campus (Building 256)	Broome	Building	137,030 SF	Competitive	Legacy industrial campus that has many of the intangibles required for advanced manufacturing
Sanmina	Tioga	Building	240,000 SF	Challenged	The property is in poor condition and is expected to require a very unique user
SouthWorks	Tompkins	Building	225,700 SF	Challenged	Property location, access, and overall configuration are insufficient for most industrial users
Victory	Tioga	Building	72,400 SF	Challenged	Visually unappealing property appearing in poor condition; uncertain path forward for current state

# Site Assessment

1 = Poor	3 = Below Average	5 = Average	7 = Very Good	9 = Excellent
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	Property Configuration	Property Encumbrances	Topography	Due Diligence Reports	Property Zoning	Surrounding Land Use Suitability	Transportation Access Site highway access	Utilities	Total Site Score	
Competitive	Wayland Business Park	7	7	9	9	7	7	8	6	60
	Cornell Business and Technology Park	5	7	7	5	9	7	7	5	52
	Schuyler County Business Park	7	7	5	7	7	7	4	6	50
	Broome Technology Park	7	7	4	5	7	4	6	4	44
Regional Opportunity	600 Main	7	1	9	5	7	3	6	4	42
	Airport Corporate Park South	3	3	5	7	5	3	8	4	38
	Broome County Airport Sites	6	6	4	3	6	5	5	3	38
Challenged	Painted Post Foundry Site	5	5	9	5	5	1	1	3	34
	Camp Monterey SHOCK Camp	5	5	4	5	3	5	2	4	33

**Competitive** – Expected to be competitive at a national level, pending project requirements, with a demonstrated ability to meet general timelines and capacity requirements with optimal flexibility (risk is associated with all sites, but this category does the best job of minimizing risk of meeting potential projects’ requirements and timelines).

**Regional Opportunity** – Needs some work in critical areas and/or not nationally competitive but provides appropriate site development opportunity for regional needs.

**Challenged** – Needs significant work and/or a very unique project; not expected to be a true competitive asset in an objective site selection analysis.

# Building Assessment

1 = Poor	3 = Below Average	5 = Average	7 = Very Good	9 = Excellent
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	Property Configuration / Flexibility	Property Encumbrances / Expansion Opportunity	Visual Condition of Existing Property	Property Zoning	Surrounding Land Use Suitability	Transportation Access / Site Access	Utilities	Total Site Score	
Competitive	Southern Tier Logistics	9	9	7	9	9	7	5	55
	Borg Warner	7	6	9	9	8	9	6	54
	MATCO	7	7	8	9	7	6	6	50
	Huron Campus (Building 256)	7	7	7	9	7	5	6	48
Challenged	Sanmina	3	3	3	5	7	5	6	32
	SouthWorks	3	3	3	7	5	3	5	29
	Victory	3	3	3	5	7	3	5	29

**Competitive** – Expected to be competitive at a national level, pending project requirements, with a demonstrated ability to meet general timelines and capacity requirements with optimal flexibility (risk is associated with all sites, but this category does the best job of minimizing risk of meeting potential projects’ requirements and timelines).

**Regional Opportunity** – Needs some work in critical areas and/or not nationally competitive but provides appropriate site development opportunity for regional needs.

**Challenged** – Needs significant work and/or a very unique project; not expected to be a true competitive asset in an objective site selection analysis.

# Executive Summary

## Education Pipeline

The Southern Tier is home to 65 K-12 districts and 12 higher education institutions that produce talent. The region's K-12 schools generally **perform at or below statewide averages**, with room for improvement, especially in urban core districts.

One of the region's primary strength in cleantech industries is its higher education institutions, which produce substantial talent in cleantech related degrees like **Engineering, Computer and Information Science, Mathematics and Statistics**, and **Physical Science**. The region has lower rates of production degree graduates than the national average. Cleantech businesses expanding or moving to the area may find this to be a challenge.

### Southern Tier Select School Districts 8<sup>th</sup> Grade Math and Science Proficiency, 2022-2023

County	District	Math	Science	County	District	Math	Science
Broome	Binghamton City	3%	24%	Schuyler	Watkins Glen Central	14%	32%
Broome	Union-Endicott Central	22%	49%	Schuyler	Odessa-Montour Central	49%	55%
Chemung	Elmira City	7%	20%	Steuben	Corning City	6%	29%
Chemung	Horseheads Central	41%	51%	Steuben	Hornell City	46%	59%
Chenango	Norwich City	19%	48%	Tioga	Owego-Apalachin Central	33%	55%
Chenango	Sherburne-Earlville Central	10%	33%	Tioga	Waverly Central	56%	53%
Delaware	Sidney Central	56%	58%	Tompkins	Ithaca City	18%	41%
Delaware	Walton Central	17%	40%	Tompkins	Dryden Central	34%	48%
<b>NY State</b>		<b>41%</b>	<b>47%</b>	<b>NY State</b>		<b>41%</b>	<b>47%</b>

### Southern Tier And U.S. Degree Composition, 2022-23

Program	% of All Completions	
	Southern Tier	U.S.
<b>Engineering</b>	<b>11.2%</b>	3.7%
<b>Computer And Information Sciences And Support Services</b>	<b>9.3%</b>	5.5%
<b>Mathematics And Statistics</b>	<b>2.1%</b>	0.9%
<b>Physical Sciences</b>	<b>2.0%</b>	0.9%
Engineering Technologies/Technicians	1.3%	1.6%
Precision Production	0.2%	1.1%
Mechanic And Repair Technologies/Technicians	0.3%	2.0%

Source: JobsEQ, National Center for Education Statistics, New York State Education Department

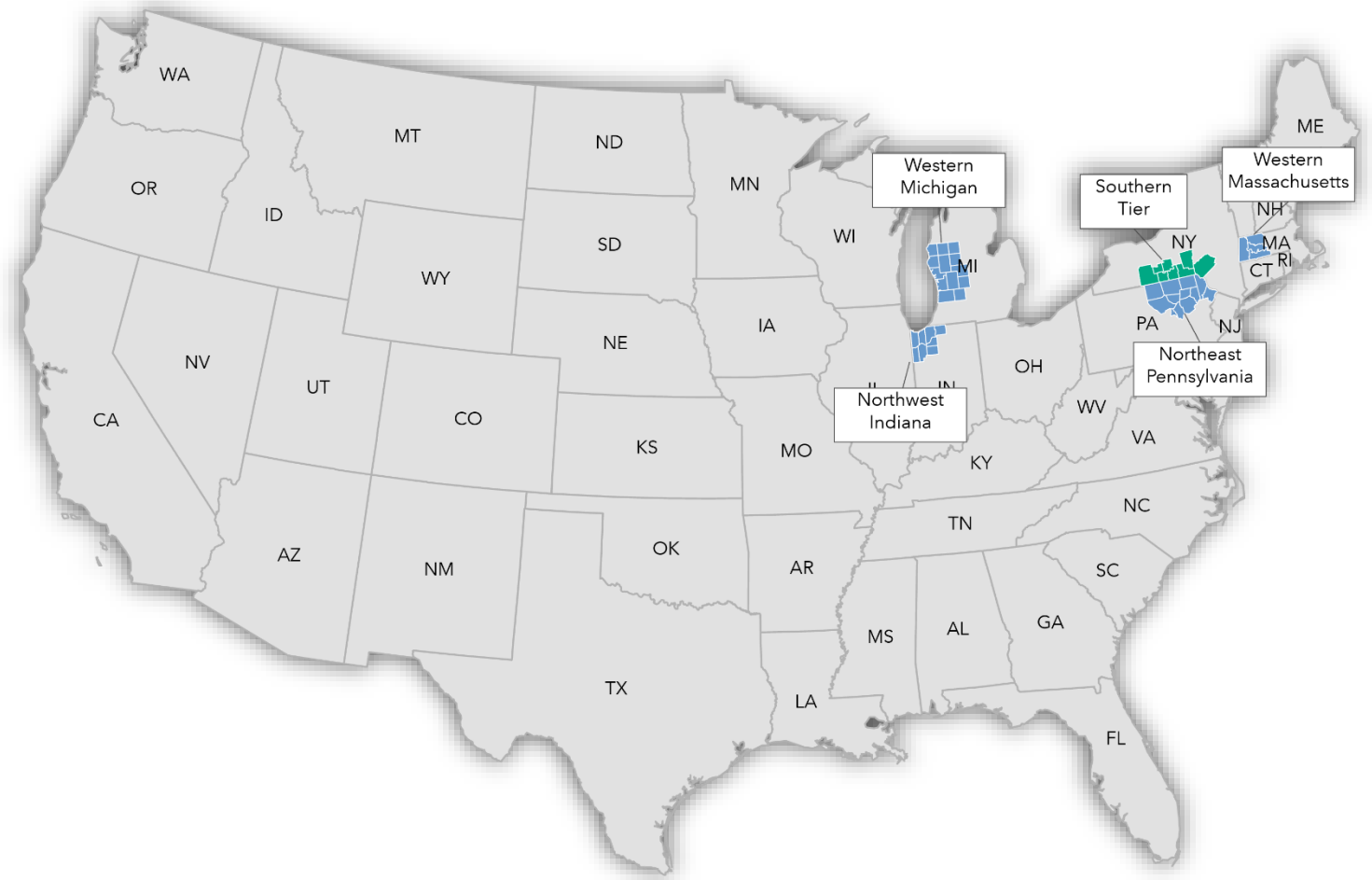
# Executive Summary

## Peer Comparisons

The Newmark team identified a set of peer communities to compare the Southern Tier to show where the region exceeds or falls behind other communities from a site selection perspective.

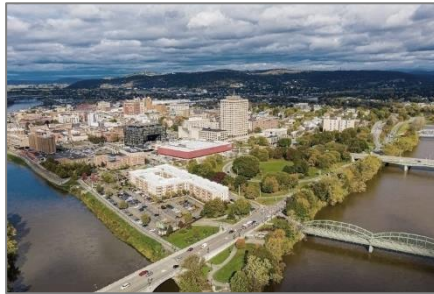
The process of identify peers and comparing the Southern Tier to peers helps the region begin to form a value proposition and identify any problematic data points that should be addressed.

### Southern Tier Peer Regions



# Executive Summary

## Peer Regions (1 of 2)

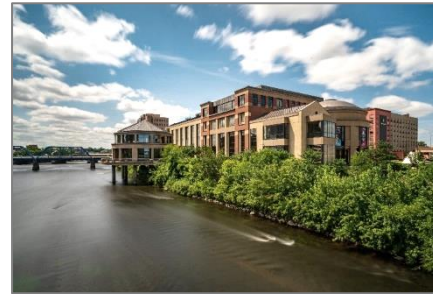


**Southern Tier, New York**

**Context**

Client. 8-County region with presence of many large legacy businesses. Emerging cleantech economy. Presence of many suppliers. Prominent research institutions.

Region Population:	628,674
Principal MSA:	Binghamton
10-Yr Pop. Growth:	-0.4%
Median HH Income:	\$62,505
Notable Industries:	Electrical Components, Transportation Equipment, Control Instruments, Motor Vehicle Parts, Education.



**Western Michigan**

**Context**

Midwest competitor region with major ties to automotive manufacturing. Recent announcements in battery cell and pack manufacturing (LG, Natron Energy).

Region Population:	1.6 Million
Principal MSA:	Grand Rapids
10-Yr Pop. Growth:	+0.6%
Median HH Income:	\$72,932
Notable Industries:	Metals Fabrication, Automotive Parts, Semiconductors, Glass Prods, Machinery.



**Northeast Pennsylvania**

**Context**

Border community located just south of Southern Tier. Potential low-cost competitor. Similar topography and demographics. Strong skilled workforce training institutions.

Region Population:	1.0 Million
Principal MSA:	Scranton
10-Yr Pop. Growth:	0.0%
Median HH Income:	\$62,954
Notable Industries:	Machine Shops, Plastics, Electrical Components, Oil & Gas.

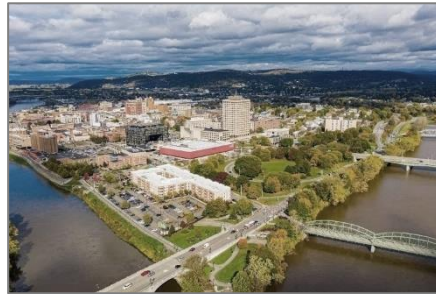
Source: JobsEQ.

Photo sources: City of Binghamton, Experience Grand Rapids, DiscoverNEPA



# Demographics & Peer Communities

## Peer Regions (2 of 2)



**Southern Tier, New York**

**Context**

Client. 8-County region with presence of many large legacy businesses. Emerging cleantech economy. Presence of many suppliers. Prominent research institutions.

Region Population:	628,684
Principal MSA:	Binghamton
10-Yr Pop. Growth:	-0.4%
Median HH Income:	\$62,505
Notable Industries:	Electrical Components, Transportation Equipment, Control Instruments, Motor Vehicle Parts, Education.



**Northwest Indiana**

**Context**

Manufacturing-focused Midwestern competitor with major research university (Notre Dame) conducting clean energy research. Recent battery project wins (Samsung and other materials manufacturers)

Region Population:	1.1 Million
Principal MSA:	Fort Wayne
10-Yr Pop. Growth:	+0.2%
Median HH Income:	\$67,931
Notable Industries:	Iron & Steel, Machine Shops, Machinery, Motor Vehicle Parts.



**Western Massachusetts**

**Context**

Northeastern U.S. competitor. Similar population trends. Major clean energy research institution (UMass Amherst). Higher cost business climate.

Region Population:	820,447
Principal MSA:	Springfield
10-Yr Pop. Growth:	-0.1%
Median HH Income:	\$70,719
Notable Industries:	Education, Railroad Rolling Stock, Machine Shops, Fabricated Metals, Plastics.

Source: JobsEQ.

Photo sources: City of Binghamton, Visit Fort Wayne, Yes Massachusetts

# Executive Summary

## Peer Comparison

Compared to its peers, the Southern Tier is an older community with lower rates of labor participation and low unemployment. Population decline is a major concern for the community, especially from a site selection perspective. The decline has slowed in recent years and may be reversing in some parts of the community. A tight labor market could also be a challenge for growth. The region faces opportunities to re-engage those workers who are not participating in the labor market.

### Southern Tier and Peer Community Baseline Comparison

	Southern Tier	Western Michigan	Northeast Pennsylvania	Northwest Indiana	Western Massachusetts	U.S.
Population (2023)	628,674	1,645,864	1,022,423	1,143,573	820,447	331 Million
Population Annual Average Growth Rate (2013-2023)	<b>-0.4%</b>	<b>+0.6%</b>	0.0%	0.2%	-0.1%	+0.6%
Median Age	40.9	<b>37.9</b>	<b>43.3</b>	39.1	41.4	38.5
Total Establishments (2023)	14,962	39,757	33,616	25,195	26,499	168 Million
Prime-Age Labor Force Participation	<b>81.2%</b>	<b>83.7%</b>	81.6%	<b>81.0%</b>	82.7%	106 Million
Unemployment Rate (June 2024)	<b>3.8%</b>	4.3%	4.0%	<b>5.2%</b>	4.3%	4.3%
% Population (25+) with HS or Higher	91.8%	90.8%	92.6%	91.9%	89.1%	89.8%
% Population (25+) with Associate Degree or Higher	<b>45.8%</b>	45.5%	42.1%	<b>38.1%</b>	<b>50.6%</b>	45.0%
% Population (25+) with BA or Higher	32.4%	35.5%	31.8%	<b>26.7%</b>	<b>41.3%</b>	35.8%

Source: JobsEQ

● Lagging ● Leading

# Executive Summary

## Peer Cost of Living

The cost of living in the Southern Tier is five percent less than the national average, and low relative to its competitors. Median household income is lower than most peers, and the region's poverty rate exceeds that of its peers as well. The region stands out with two of the most affordable housing markets in the country in Binghamton and Elmira.

### Southern Tier and Peer Area Cost of Living, 2018-2022

	Southern Tier	Western Michigan	Northeast Pennsylvania	Northwest Indiana	Western Massachusetts	U.S.
Cost of Living Index (2024 Q1) (U.S. AVG = 100)	95.0	96.7	92.4	98.4	102.7	100.0
Median House Value (of owner-occupied units)	\$152,109	\$218,919	\$176,810	\$190,526	\$279,033	\$281,900
Median Household Income	\$62,505	\$72,932	\$62,954	\$67,931	\$70,719	\$75,149
Poverty Rate (of all people)	15.6%	10.8%	13.2%	13.5%	10.4%	12.5%

Source: JobsEQ, U.S. Census Bureau American Community Survey, 2018-2022

### Percent of Household Income Spent on Median Priced Home, Q2 2024

	Binghamton, NY	Elmira, NY	Grand Rapids, MI	South Bend, IN	Springfield, MA	U.S.
Median Income Family (Median Income)	19%	18%	32%	21%	35%	38%
...Rank among 176 Markets Nationwide (lower = better)	5 <sup>th</sup>	3 <sup>rd</sup>	80 <sup>th</sup>	8 <sup>th</sup>	97 <sup>th</sup>	N/A
Low Income Family	39%	36%	64%	42%	71%	77%
...Rank among 176 Markets Nationwide (lower = better)	6 <sup>th</sup>	3 <sup>rd</sup>	81 <sup>st</sup>	8 <sup>th</sup>	105 <sup>th</sup>	N/A

Source: Wells Fargo Housing Opportunity Index 2<sup>nd</sup> Quarter 2024

● Lagging ● Leading

# Executive Summary

## Peer Comparison

Relative to its peers, the Southern Tier has a very strong labor force with high concentrations employment in major occupation categories that intersect with the cleantech space. The only area where the Southern Tier falls behind is in production occupations.

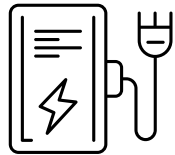
SOC	Occupation	Southern Tier		Western Michigan		Northeast PA		Northwest Indiana		Western Mass.	
		Employment	LQ	Employment	LQ	Employment	LQ	Employment	LQ	Employment	LQ
11	Management	18,192	0.93	55,648	0.93	28,230	0.85	27,286	0.77	30,832	1.09
13	Business and Financial Operations	14,036	0.84	40,610	0.80	19,461	0.69	19,276	0.64	18,829	0.79
15	Computer and Mathematical	<b>6,360</b>	<b>0.76</b>	15,844	0.62	7,909	0.56	<b>6,914</b>	<b>0.46</b>	7,125	0.59
17	Architecture and Engineering	<b>4,712</b>	<b>1.11</b>	<b>20,935</b>	<b>1.62</b>	5,728	0.80	5,911	0.78	4,445	0.73
19	Life, Physical, and Social Science	<b>2,841</b>	<b>1.23</b>	<b>4,552</b>	<b>0.65</b>	2,778	0.71	2,842	0.69	3,354	1.01
21	Community and Social Service	6,136	1.29	13,626	0.94	8,944	1.11	8,999	1.05	11,421	1.67
23	Legal	1,827	0.85	3,642	0.56	2,435	0.67	2,522	0.65	2,090	0.68
25	Educational Instruction & Library	<b>26,054</b>	<b>1.85</b>	<b>36,765</b>	<b>0.85</b>	22,408	0.94	27,502	1.09	30,957	1.53
27	Arts, Design, Entertainment, Sports, and Media	4,627	0.96	12,456	0.85	5,587	0.69	6,882	0.80	7,050	1.02
29	Healthcare Practitioners and Technical	15,611	1.01	46,726	0.99	32,120	1.23	31,080	1.12	26,440	1.19
31	Healthcare Support	11,195	0.94	27,690	0.76	25,012	1.25	20,077	0.94	30,817	1.81
33	Protective Service	7,228	1.27	10,852	0.63	9,709	1.02	9,927	0.97	8,992	1.11
35	Food Preparation and Serving Related	20,164	0.95	61,256	0.94	34,479	0.96	46,489	1.22	29,305	0.96
37	Building and Grounds Cleaning and Maintenance	8,732	1.02	26,267	1.00	12,435	0.86	14,551	0.94	11,779	0.96
39	Personal Care and Service	5,883	0.90	17,520	0.88	9,603	0.87	12,132	1.04	10,575	1.13
41	Sales and Related	21,530	0.93	67,223	0.95	36,986	0.95	43,656	1.05	29,080	0.88
43	Office and Administrative Support	29,957	0.95	87,102	0.90	52,344	0.98	51,406	0.91	41,372	0.91
45	Farming, Fishing, Forestry	1,307	0.84	7,892	1.67	1,515	0.58	1,972	0.71	1,621	0.73
47	Construction and Extraction	9,264	0.77	35,791	0.98	18,527	0.92	22,893	1.06	14,469	0.84
49	Installation, Maintenance, and Repair	10,613	1.04	34,128	1.09	17,755	1.03	22,753	1.24	12,166	0.83
51	Production	<b>17,364</b>	<b>1.19</b>	<b>100,651</b>	<b>2.27</b>	32,522	1.33	37,430	1.43	<b>18,256</b>	<b>0.88</b>
53	Transportation and Material Moving	18,698	0.82	74,586	1.06	55,318	1.43	49,009	1.19	25,418	0.77

Source: JobsEQ

# Executive Summary

## Target Cleantech Clusters

After assessing the region’s business climate, assets, and real estate, the team identified clusters within the cleantech industry that present the greatest opportunity for future growth. These clusters include:



### Power Management

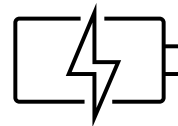
**Description**

Businesses engaged in supporting cleantech activity through R&D, expertise engineering, manufacturing, machining, and circuit board assembly.

Employment:	12,429
Location Quotient:	1.59
10-Yr Empl. Growth:	-0.7%

**Example Industries**

Machine Shops, Engineering Services, Circuit Board Manufacturing. Circuit Board Assembly, Machine Tool Manufacturing.



### Battery Manufacturing Ecosystem

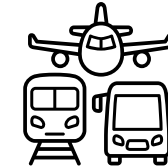
**Description**

Businesses engaged in manufacturing batteries and battery components, and the engineering and R&D services that support new battery innovations.

Employment:	4,128
Location Quotient:	4.34
10-Yr Empl. Growth:	-0.2%

**Example Industries**

R&D in Physical Sciences, Battery Manufacturing, Capacitor Manufacturing, Power Distribution & Specialty Transformer Manufacturing, Electronics Connector Manufacturing.



### Clean Transportation

**Description**

Businesses engaged in manufacturing transportation equipment that can utilize alternative fuel sources.

Employment:	11,983
Location Quotient:	5.61
10-Yr Empl. Growth:	-1.3%

**Example Industries**

Motor Vehicle Electrical Equipment Manufacturing, Aircraft Engine Manufacturing, Forklift Truck Manufacturing, Railroad Rolling Stock Manufacturing.

Source: JobsEQ

# Executive Summary

## Emerging Opportunities for Continued Focus (1 of 2)

In addition to identifying a set of target industries for focus, the Newmark team also identified several emerging technologies and market trends that could impact future cleantech development in the region. These include:



### **Solar Panel Recycling**

No financially viable method exists yet to recycle solar panels. Most panels have a lifespan of around 20 years, meaning that solar projects built in the mid-to-late 2000s are soon to be decommissioned, which will lead to significant demand for recycling services. The market is in its early stages, with startups operating across the country.

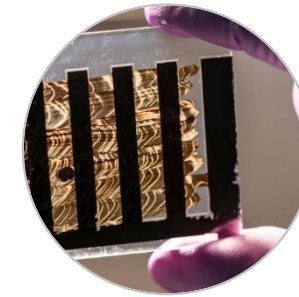
In Steuben County, Momentum of Western New York recently obtained permits to conduct solar panel and battery recycling.



### **Battery Recycling**

The transition of consumer and industrial products to battery power, along with an increased focus on battery material supply chain security, will create a future industry focused on battery recycling. Current processes, which entail shredding or dissolving batteries in acid are not profitable. New methods are being employed by some researchers to recycle batteries without shredding or dissolving.

Momentum of Western New York is one example of a Southern Tier businesses exploring these opportunities.



### **Advanced Photovoltaics**

New technologies are enabling the printing of solar cells onto flexible materials, a process known as “thin film deposition” that eliminates the need for costly silicon panels. Researchers are also focused on improving the energy yields and longevity of solar cells.

Binghamton and Cornell Universities are focusing on R&D and innovations in this field. Private sector businesses in the region like Pinwheel Solar are focused on advancing perovskite cells, which are less costly to manufacture than current silicon cells. Other businesses like Corning, Inc. and Universal Instruments are also conducting R&D in thin-film deposition.

# Executive Summary

## Emerging Opportunities for Continued Focus (2 of 2)

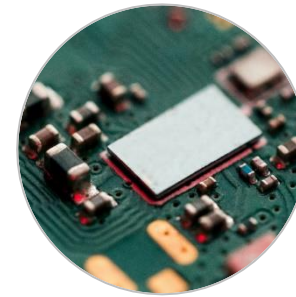
In addition to identifying a set of target industries for focus, the Newmark team also identified several emerging technologies and market trends that could impact future cleantech development in the region. These include:



### **Electrolysis**

Electrolysis is the process of producing clean hydrogen by using electricity to split water into hydrogen and oxygen. Researchers are exploring the use of new materials as catalysts and methods for improving membranes and reducing the costs of electrolysis.

Cornell University has dedicated resources to these efforts through its Center for Alkaline Based Energy Solutions (CABES), and some businesses in the region are conducting R&D in this field.



### **Semiconductor Packaging**

The growth of renewable energy, electric vehicles, and application of computer chips in increasingly extreme environments is driving demand for new methods of protecting chips and integrating them into circuit boards. Federal policy efforts are underway to re-shore semiconductor packaging.

The Southern Tier is home to many research assets that could spur innovation in packaging and attract related industries. These assets include Binghamton University's S3IP Center and Cornell University's SUPREME Center.

# Executive Summary

## Recommendations | Process

After conducting interviews, discussions, and roundtables with over 100 stakeholders and completing a comprehensive data-driven analysis of the region and its peers, the Newmark team developed recommendations to improve the Southern Tier's competitive position.

These recommendations were created using a decision matrix to ensure that each recommendation is executable, has a clearly identified stakeholder, and a clearly identified means to measure success toward implementing the recommendation.



### Recommendation framework

Controllable	Executable
<ul style="list-style-type: none"> <li>Does the recommendation address a <b>controllable variable</b> that can be impacted by strategic planning?</li> <li>Does the recommendation focus on factors that are known industry influencers and <b>considerations of business decision-making and global competitiveness</b>?</li> </ul>	<ul style="list-style-type: none"> <li>Can the recommendation be traced to leading practices in other regions?</li> <li>Has the recommendation been executed with known results?</li> <li>Can a <b>discernable roadmap for implementation</b> and success be developed?</li> <li>Can the tactics from inception to execution be easily developed and communicated?</li> </ul>
Defensible	Measurable
<ul style="list-style-type: none"> <li>Is the recommendation supported by <b>facts and objective evaluation</b>?</li> <li>Can it stand the test of varied interests and stakeholders throughout the region?</li> <li>Does the recommendation represent a <b>tangible and realistic change</b> event that will impact the economic wellbeing of the region?</li> <li>Does the recommendation consider the unique economic geography of the region?</li> </ul>	<ul style="list-style-type: none"> <li>Would there be organization ownership of the recommendation?</li> <li>Does the recommendation lend itself to the measurable Key Performance Indicators (KPIs)?</li> <li>Can <b>accountability and transparency be built into the recommendation</b> with reasonable performance management methods?</li> <li>Can the recommendation be appropriately resourced? Is it affordable?</li> </ul>



# Executive Summary

## Recommendations | Process

The Newmark team developed 56 recommendations that center on seven key themes, including workforce development, marketing, site readiness, and others.

After formulating recommendations, the Newmark team categorized each recommendation based on priority, cost, and implementation timeline. The team also identified stakeholders to lead and support each recommendation.

These best practices are based on our analysis of the region and Newmark’s database of best practices developed through scores of engagements with communities across the country.



# Executive Summary

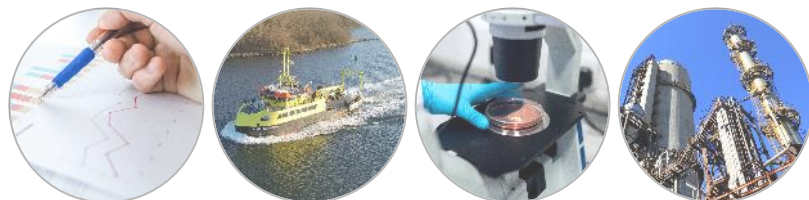
## Top 10 Recommendations

Category	Functions & Tactics	Priority	Timetable to Commence	Cost	Difficulty	Responsible Parties	Supporting Entities	Success Metrics
Business Retention and Expansion	Ensure key cleantech businesses and major employers receive retention visits on a regular basis.	●●● High	6 - 12 Months	\$	★★ Moderate	IDAs	Private Sector Employers	Retention Visits, Contacts Established, Jobs Created Or Retained.
Business Retention and Expansion	Identify ways to increase collaboration between R&D efforts at Cornell and Binghamton Universities.	●●● High	6 - 12 Months	\$	★★★ Challenging	Cornell University, Binghamton University	IDAs, ESD	Instances Of Cross-Collaboration, Meetings Held.
Business Retention and Expansion	Host networking events between larger clean energy businesses in the region and Power Management cluster businesses to identify new partnership opportunities that connect end product manufacturers with suppliers.	●●● High	1 - 2 Years	\$	★★ Moderate	IDAs, Chambers of Commerce	Private Sector Employers	Events Held, Relationships Formed.
Marketing	Conduct regional business workshops to educate local manufacturers about how to engage in R&D partnerships with Binghamton and Cornell Universities.	●●● High	1 - 2 Years	\$	★★ Moderate	Local Chambers, NENY, Binghamton S3IP, IEEC, Cornell Gateway to Partnership	Private Sector Employers	Sessions Held, Businesses Engaged, New Relationships Formed.

# Executive Summary

## Top 10 Recommendations

Category	Functions & Tactics	Priority	Timetable to Commence	Cost	Difficulty	Responsible Parties	Supporting Entities	Success Metrics
Marketing	Create public education campaign to improve public understanding of battery research and plans for federal grants around battery manufacturing.	●●● High	6 - 12 Months	\$\$	★★ Moderate	NENY, Higher Education	IDAs, Chambers of Commerce	Materials Developed, Residents and Businesses Engaged, Change in Community Opinion.
Marketing	Develop a unified value proposition for the Southern Tier for cleantech business relocating to or expanding in the region.	●●● High	1 - 2 Years	\$\$	★★★ Challenging	IDAs	Chambers of Commerce, Higher Education, Private Sector Employers, Three Rivers Development, Southern Tier 8	Value Proposition Established, Marketing Materials Developed, Materials Distributed to Prospective Businesses, Visits/Looks From Site Selectors And Businesses.
Marketing	Identify private sector target industry cluster "champions" who can promote the region and it's cleantech assets to their peers inside and outside of the Southern Tier.	●●● High	6 - 12 Months	\$	★★ Moderate	IDAs, Local Chambers, Private Sector Employers	ESD	Champions Identified, Stories Collected.



# Executive Summary

## Top 10 Recommendations

Category	Functions & Tactics	Priority	Timetable to Commence	Cost	Difficulty	Responsible Parties	Supporting Entities	Success Metrics
Site Readiness	Conduct "development readiness" meetings with local municipalities to help local leaders understand the needs of developers and future businesses.	●●● High	6 - 12 Months	\$	★★ Moderate	IDAs, NENY, Site selectors, Developers, Utility Providers	Local government (council, planning & development, engineering)	Meetings Held, Communities Assessed, Potential Sites Identified.
Site Readiness	Build relationships with new electric utility representatives and establish baseline working needs and expectations.	●●● High	1 - 2 Years	\$	★★ Moderate	IDAs	Electric utility	Meetings Held, Expectations Established, Responsiveness of Utilities to IDA Needs.
Workforce Development	Align community college programs with needs of cleantech manufacturing businesses.	●●● High	1 - 2 Years	\$\$\$	★★★ Challenging	Community Colleges, Private Sector Employers	IDAs, BOCES, K-12	Needs Identified, Programs Scaled, Enrollment, New Programs Launched.



Photo source: Pexels