

THE ROLE OF UNIVERSITIES IN ADVANCING CLEAN ENERGY TECHNOLOGIES

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Role #1. Asking BIG Questions

- Places “to think and to reason and to compare and to discriminate and to analyze.” – John H. Newman
- The university is nothing, if not a “safe” place to ask the big questions that help us understand
 - ▣ Who we are
 - ▣ How we live, and
 - ▣ Our vision for the future.
- What are the BIG questions surrounding the consumption and production of energy? And how do the answers affect our decision making?

Role #2. Technology Development

- “Universities are the nation’s primary source of *knowledge creation and talent*.” – Richard Florida
- From cutting edge (often risky) R&D to application, demonstration, partnerships, and spin-offs
 - ▣ When does university research begin to look too “corporate”?
 - ▣ Universities continue to wrestle with this question
- Resources abound in New York: hundreds of faculty in New York in numerous departments and centers working on energy research

Role #3. Systems Thinking



- “Every problem has a solution that is simple, neat, and wrong.” – H.L. Mencken
- Technical solutions are part of larger systems
 - ▣ Technical systems
 - ▣ Social, political, economic, and cultural (SPEC) systems
- Multi-disciplinary aspects of universities make them ideal for systems approaches
- Support for this kind of systems thinking in SPEC tends to fall short relative to technology

Role #4. Training and Education



- What function consumes the most amount of time for a college professor?

TEACHING

- Untapped teaching skills in the faculty at our universities, colleges, and community colleges
- Programs aimed at tapping this expertise are important and necessary

Conclusion – Four Roles to Discuss



1. Asking BIG questions
2. Technology development and incubation
3. Systems thinking that includes the SPEC systems
4. Training and education