



NREL Technology Transfer

Facilitating Capital Investment in Clean Energy Technology

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Operated for the U.S. Department of Energy by Midwest Research Institute • Battelle



National Renewable Energy Laboratory

We Are Unique

- Only national laboratory dedicated to renewable energy and energy efficiency R&D
- Research spans fundamental science to technology solutions
- Collaboration with industry, university and international partners is a hallmark
- Research is market relevant because of a systems focus and global perspective and scope



NREL Mission

*Develop renewable energy and energy efficiency technologies and practices, advance related science and engineering, and **transfer knowledge and innovations** to address the nation's energy and environmental goals.*



Technology
Creation



Quads,
Security,
Jobs
Sustainable
Development

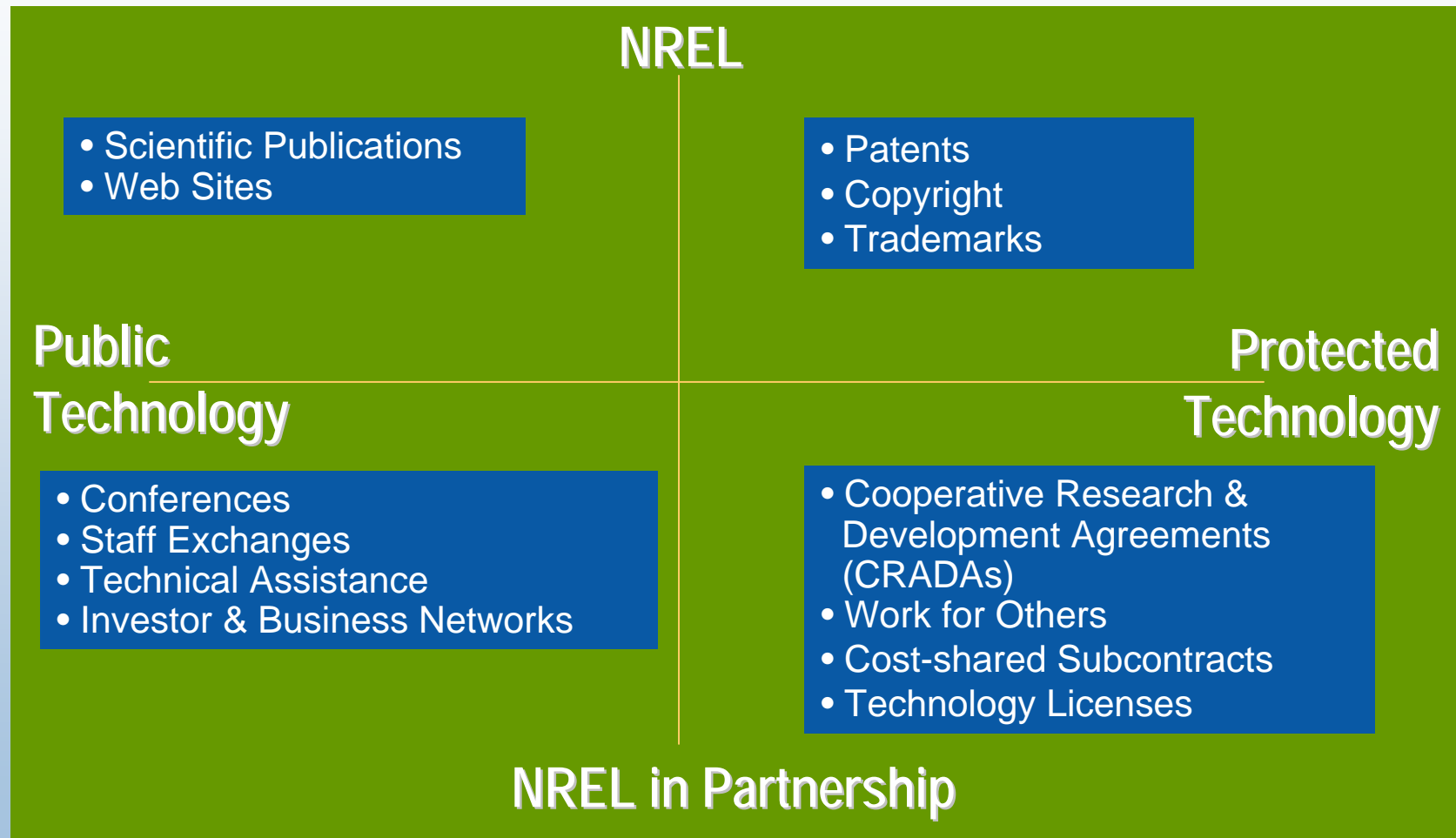


Clean Energy &
Environmental
Quality

Market
Successes

For NREL, Creating the Technology is only the Beginning

NREL Technology Transfer Mechanisms



Future Strategic Drivers



Global Context

Attributes of a Future Energy System

- Carbon neutral
- Highly integrated/convergence to electrons
- Globalization of markets/distributed systems
- Strong Demand for Technology Solutions

Opportunities for Disruptive Technologies and Entrepreneurial companies

Our Partner Needs

- Speed
- Rapid capital growth
- Flexibility
- Innovation
- Sustainable competitive advantages

NREL Challenges

Technology Transfer Strategy

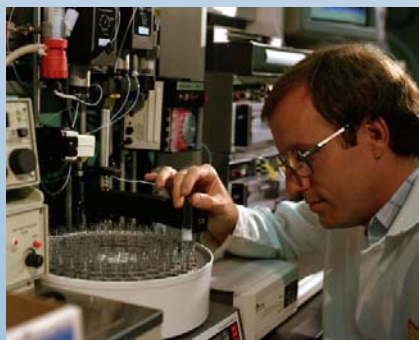
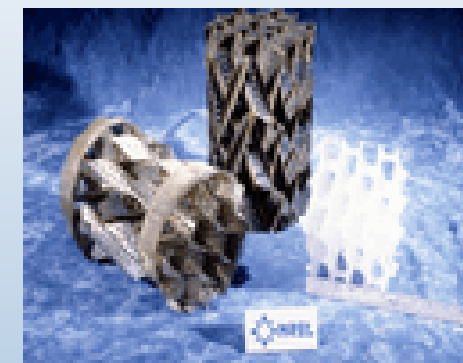
- Fast Transaction Speed
- Transparency
- Venture Capital Friendly
- Enhance Value of Laboratory Intellectual Property
- Broad Value Proposition

Technology Transfer



Airfoils

Direct Contact
Heat Exchanger



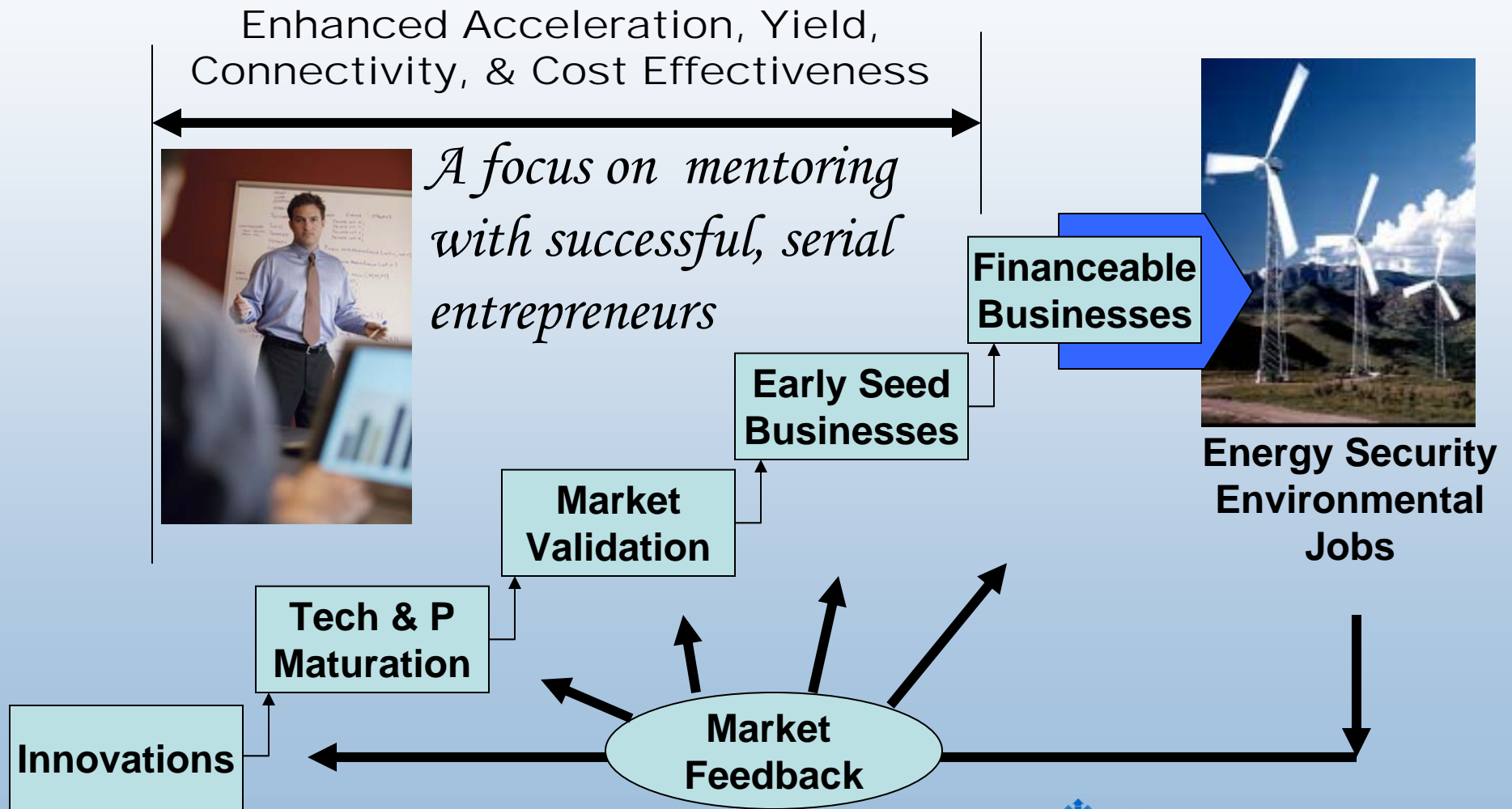
Fermentation Enzymes



Vehicle System Model

- Strategy focuses on fast transaction speed, transparency, being venture-capital friendly, enhancing the value of intellectual property (IP), and broad value proposition
- Intellectual property attracts partners that move technology toward commercialization
- Industry Growth Forum joins investors and entrepreneurs
- NREL has a portfolio of 278 patents, copyrights, and trademarks; and 47 active licenses

Traversing the Gap & Getting Technologies into Market Focused Products and Businesses



NREL Enterprise Development Building Networks for Market Success



NREL Industry Growth Forums - Value-added Venture Capital access



NREL founded *National Alliance of Clean Energy Business Incubators* - Leading business development resources for entrepreneurs



Clean Energy Investor Directory - Web based contact and profile information for investors



Clean Energy Innovation Center -- A virtual incubator to catalyze a Colorado clean energy business cluster

Expanding Talent

- Entrepreneur in Residence
- Commercialization Mentors
 - Focused on lab mission
 - Lasting impact
- Objectives
 - Evaluating early stage IP
 - Identifying and packaging commercialization opportunities
 - Setting up deals (startups, maturation, licensing)
 - Process improvement and staff training
 - Healthy carriers of the “entrepreneurial virus”



Bill Bonadies



Stuart Macmillan



Tod Perry



Our Vision

Maximize Commercial Impacts
of EERE Technology



Best in Class
Technology Transfer

Industry's Partner
of Choice