



MICHIGAN ECONOMIC DEVELOPMENT CORPORATION
MichiganAdvantage.org



Michigan Investments in Batteries and Electric Vehicles

MICHIGAN
ECONOMIC DEVELOPMENT CORPORATION
THE UPPER HAND



Presentation to The
National Academies



July 27, 2010

Strategy:

Cluster Based Economic Development

- 2 year research program to identify industry diversification opportunities leveraging MI competitive advantages
- Worldwide best practice review in industry acceleration programs (Swedish Triple Helix, Cluster Approach)
- Implemented cluster teams to guide strategy
- Crafted key legislation providing targeted incentives to grow clusters

Identified Target Industries:

Adv Energy Storage

Advanced Materials

Bioenergy

Solar Photovoltaic

Water Technology

Wind

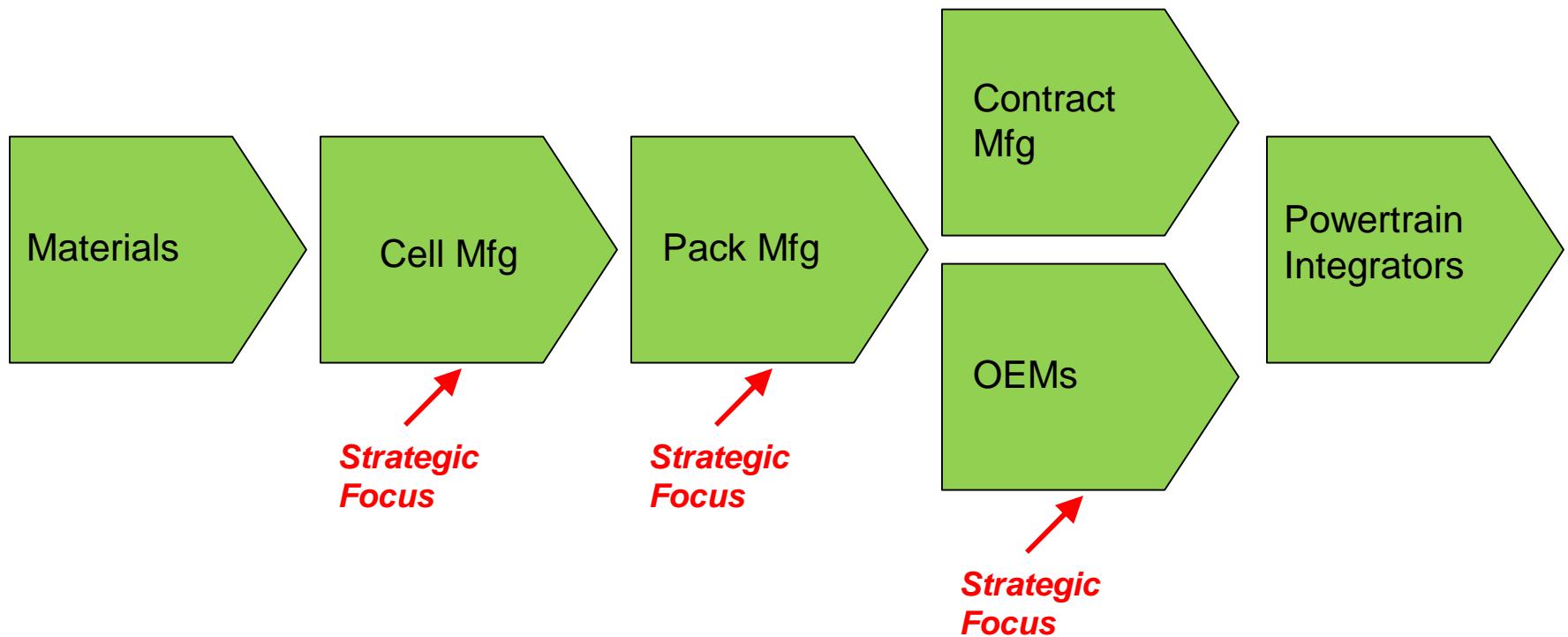
Strategy: **Why Energy Storage in Michigan?**

- Projected \$20 Billion marketplace in North America by 2020
- Diversification within auto industry sector – chance for domestic OEMs to lead
- Auto R&D in MI – this is the new ‘powertrain’
- Advanced manufacturing workforce
- Addressing energy security and a critical national need

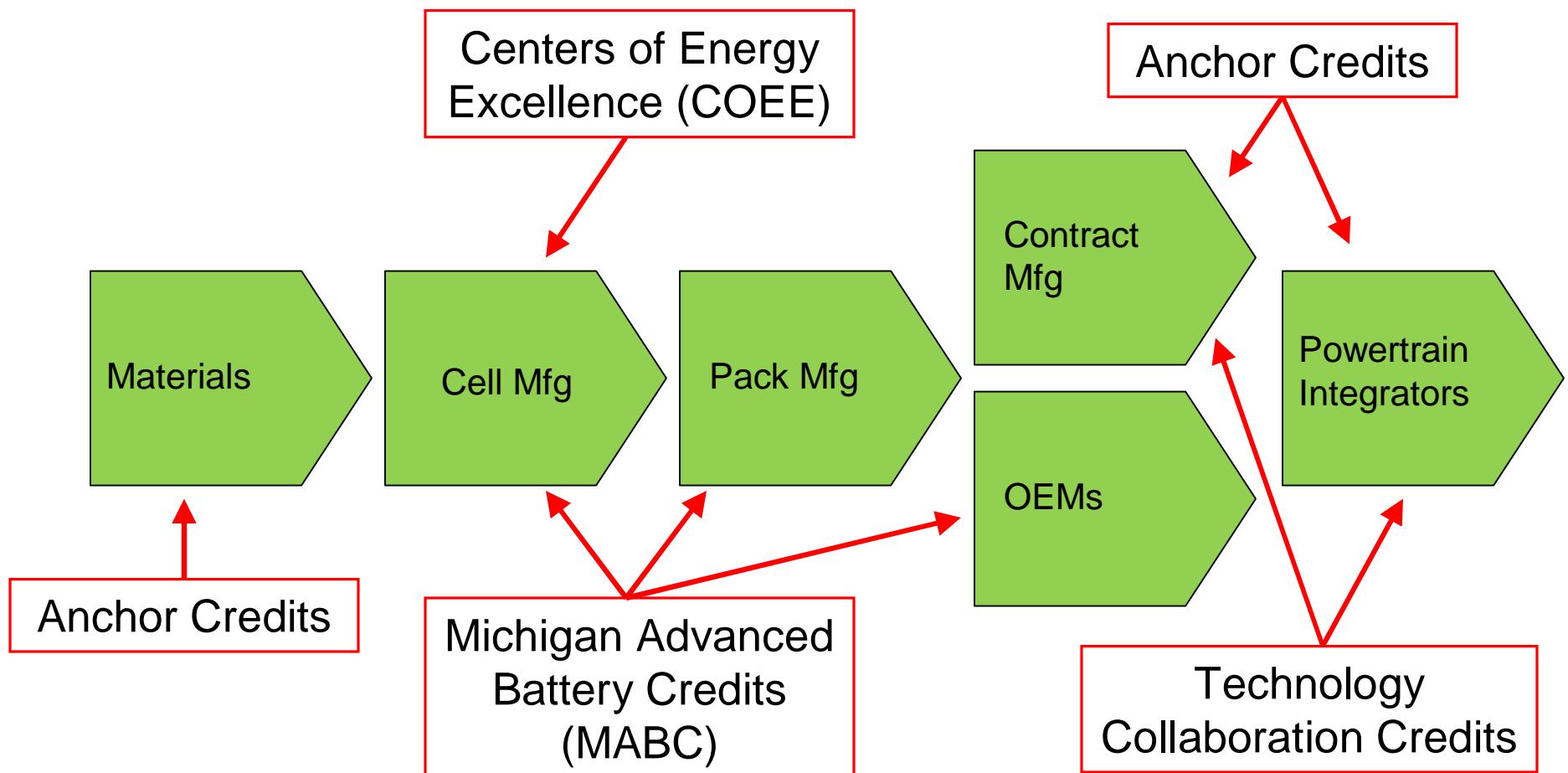
Strategy: How To Develop A New Industry

- Seed MI marketplace with key battery players– be first to market in North America
- Attract key anchor/magnet companies to spur value chain growth
- Design incentives the DOE would recognize as cost share in Federal funding opportunities
- ‘Dovetail’ IRC 30D credits to help vehicle OEMs compete
- Assist battery OEMs in industry diversification efforts

Michigan Incentives: Attraction and Growth Strategy



Michigan Incentives: Focus on the Value Chain



Michigan Incentives: Centers of Energy Excellence

- Bold initiative to help develop, grow and sustain alternative energy clusters
- Goal of linking private sector with universities, national labs, and the state to ***accelerate the commercialization*** of innovative energy technologies
- **\$43 Million** awarded to Six Centers of Energy Excellence in 2008:



Advanced Batteries:
\$13 Million

Michigan Incentives: **\$1.02 Billion in Refundable Tax Credits**

Michigan Advanced Battery Credits (MABC)	
Pack Manufacturing Credit for manufacture of plug-in traction battery packs	\$255 Million
Vehicle Engineering Credit to support battery integration, prototyping, launch expenses	\$135 Million
Advanced Battery Technologies Engineering Credit to support engineering activities	\$30 Million
Cell Manufacturing Credit up to 50% capital investment for cell manufacturing facility	\$600 Million

Michigan's Energy Storage Industry: Supply Chain Investments

Cell Manufacturing

 
\$100 Million

 
\$100 Million


\$100 Million


\$100 Million


\$100 Million


\$100 Million

Pack Manufacturing


\$115 Million


\$78 Million

 
\$20 Million


\$42 Million

Battery & Vehicle Engineering


\$45 Million


\$75 Million


\$45 Million

Michigan's Energy Storage Industry: \$1.3 Billion in Federal Grants to Michigan!

Cells, Batteries, & Materials Manufacturing

 
Johnson Controls **saft**

\$299 Million

 
LG Chem **cpi**
compact power, inc.

\$151 Million


A123 SYSTEMS

\$249 Million


DOW **KOKAM**

\$161 Million


GM

\$106 Million


TODA AMERICA

\$35 Million

Electric Drive Component Manufacturing


GM

\$105 Million


Ford

\$63 Million


MAGNA

\$40 Million

Transportation Electrification


CHRYSLER

\$70 Million


GM

\$30 Million


Ford

\$30 Million

Awards also to Eaton, University of Michigan, Michigan Tech, Wayne State University

Creating the Battery Capital of the World

Vehicle Builds

Cell Manufacturers



Value Chain



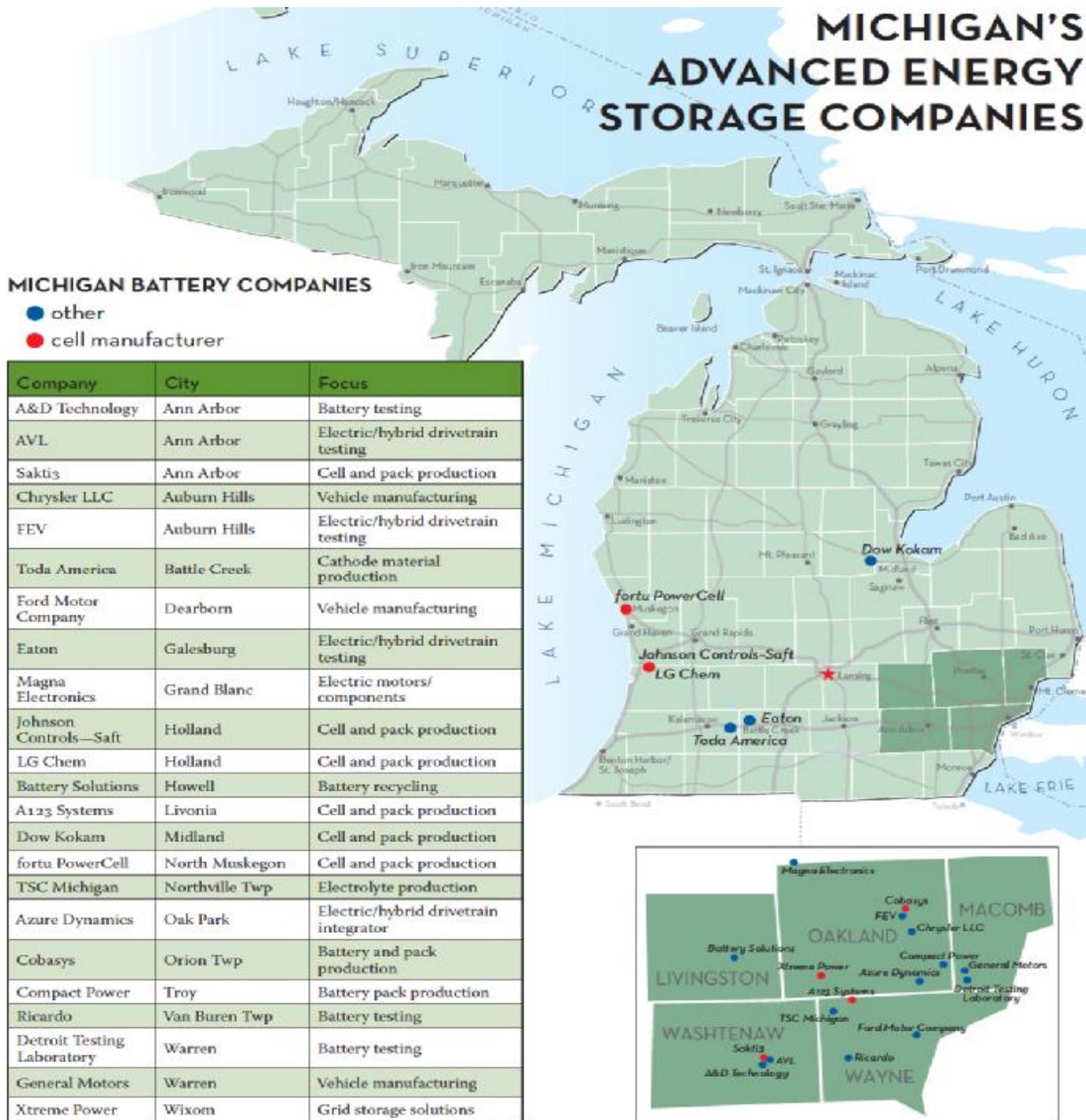
TECHNO SEMICHEM CO., LTD.
The logo for Techno Semichem, featuring the word "TECHNO" in a black box with "SEMICHEM Co., LTD." in smaller text below it.



Announced Investment Since 11/2008

\$5.7B

MICHIGAN'S ADVANCED ENERGY STORAGE COMPANIES



Michigan's Energy Storage Industry: Why This Is Important

- Establishes domestic manufacturing/availability of high-power, high-energy, large format cells
- Attracts new development and expansion opportunities for existing transportation-focused companies
- Creates the foundation for an electric vehicle “ecosystem” aimed at sustainability
- Provides opportunities for collaboration between private industry and academia
- Accelerates the growth of an industry identified as a critical national need

Continuing Michigan's Strategy: Now The Hard Work Begins

- Investments/Actions to date are just the beginning
- Focus on dual use opportunities
- Focus on complementary industries to leverage new strengths/technologies
- Refine economic development toolkit to address future needs
- Policy development and advocacy to strengthen the industry

Execution! Execution! Execution!

Continuing Michigan's Strategy: The “Alliance” – An aggressive proactive technical collaboration

- Aligning State initiatives with national priorities under the stewardship of the Federal Government's
 - Department of Energy / National Labs
 - Department of Defense / TARDEC
- A Michigan retention / attraction advantage

Backing the ALLIANCE

- Common areas of research, interest and need for industry partners
- Working Agreements with MEDC:
 - DOE / OESA – Memorandum of Intent
 - ORNL – Memorandum of Understanding
 - ORNL – Work for Others Agreement – contract
 - TARDEC - Cooperative Research & Development Agreements
 - MEDC, DOE/ORNL & TARDEC – Letter of Agreement
- Pooled Resources \$27 M over three years

Our Collective Charge

- Make relevant to our constituents the resources of DOE / Oak Ridge and the National Laboratory network
- Communicate, package and sell this unique Michigan / Federal collaborative
- Drive dual use solutions through commercialization of advanced technologies

Continuing Michigan's Strategy: Strategy Recap and Future Work

- Completed {
 - 1. Identify Incumbent Strengths / Strategy Development
 - 2. Develop Unique Attraction Tools
 - COEE - **\$13 million**
 - MABC - **\$1.02 billion**
 - 3. Attraction of Strategic Supply Chain Companies
 - 4. Compete for Recovery Act Awards - **\$1.3 billion**
- In Progress {
 - 5. Continue 'Ecosystem' Development
 - 6. Assist Industry on Regulatory & Policy Issues
 - 7. Facilitate Industry/Government Collaboration
 - 8. Expose Companies to Opportunities in Complementary Markets and Through Alliance
 - 9. Identify and Compete for Additional Federal Funding Opportunities



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Thank You

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