

Alternative Energy Educational & Training Partnerships in the Great Lakes Bay Region



JUNE 13, 2011





Great Lakes Bay Economic Development Partnership

- Formed a Partnership with Saginaw Future, Bay Future & Midland Tomorrow to target Solar Industry
“Unified Regional Marketing Message”
- Marketing the Great Lakes Bay Region to Solar Industry -targeting HSC, Dow Corning and Dow Chemical Customers & Suppliers
- EDP Meeting with companies at National and International Solar Trade Shows (EDP & MEDC) & Direct Contacts
- Prepared Award Winning Marketing Materials (MEDA)
 - Displays and Printed Materials

Solar Opportunity - Regional Study



Recommendation: Regional Actions

- Create a regional partnership
- Develop “Shovel Ready” sites for solar energy companies

Recommendation: Differentiate

- Establish a Solar Training Academy
- Initiate R&D to reduce costs of production
- Start an Industry Association

Recommendation: Business Attraction

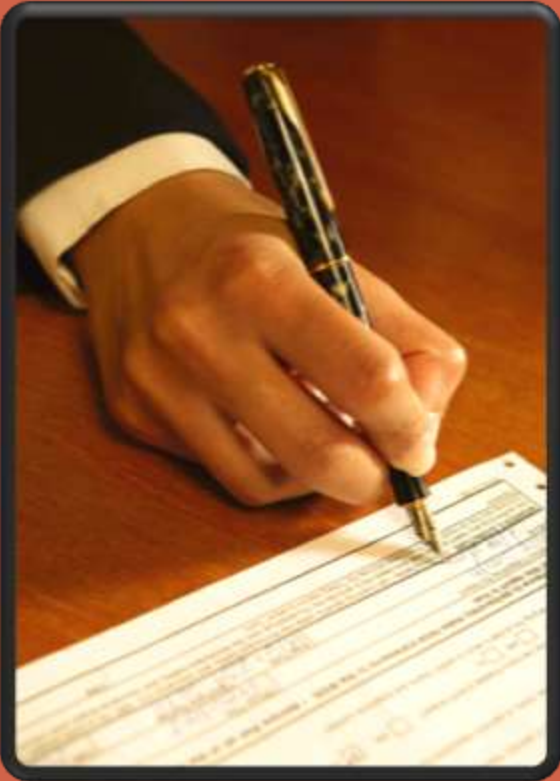
- Package site business cases
- Promote *Locate at the Source* theme
- Address business case gaps and perceptions





Solar Legislation

- Passed 5 pieces of Solar Legislation
 - Shovel Ready Sites (TIF)
 - Special PV Credit
 - SmartZone
 - Anchor Clarification/Amendments
 - Centers of Energy Excellence



Why Solar???



- Clean, energy independent, jobs...
- The earth receives more energy from the sun in just one hour than the world uses in a whole year.
- Industry experiencing massive scaling-up of manufacturing in anticipation of PV competitiveness.
- Solar Energy Demand Worldwide photovoltaic installations increased by 5,948 MW in 2008, up from 2,826 MW installed during the previous year.
 - In 1985, annual solar installation demand was only 21 MW.

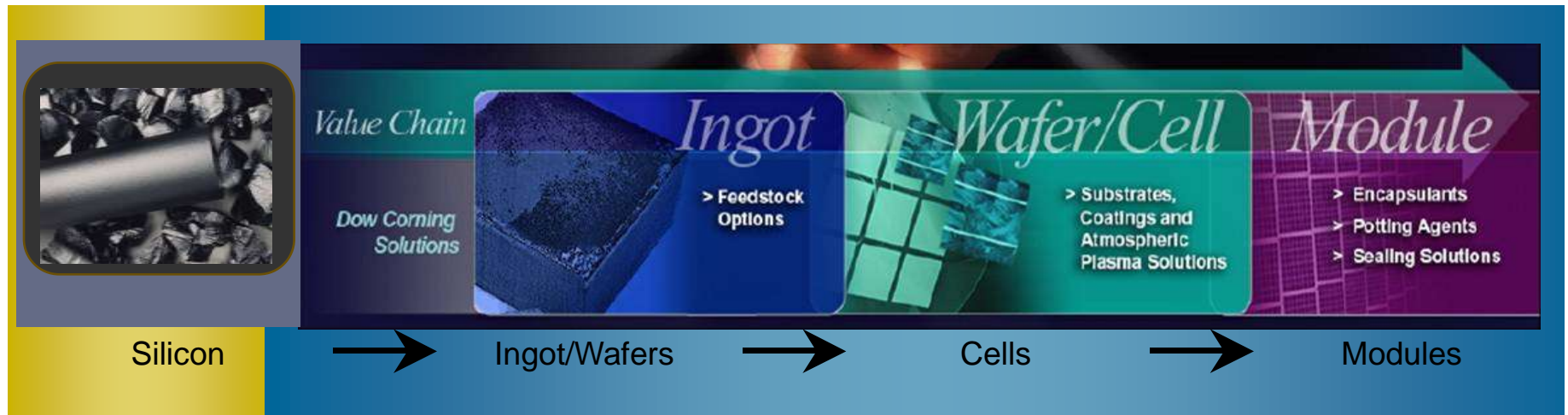
Why Solar???



- Solar Energy demand has grown at about 30% per annum over the past 15 years.
- The US market grew to 357 megawatts in 2008 – fourth largest market.
 - Spain was the largest market in 2008.
 - The "Feed-in Law" has led to Germany to become the second largest market in the world in 2008.
 - Japan's market is now the sixth largest market.
- Solarbuzz research confirms that the Asia Pacific, European and United States all are projected to have strong growth over the next five years.



Solar Supply Chain





- **Dow Corning and Hemlock Semiconductor Group**



- **Dow Corning**

- Unveiled a new Solar Array and Discovery Center
- Broke Ground on high-purity Monosilane Facility investing hundreds of millions of dollars
- Solar Solutions Applications Center invested another \$3.5m
- American Solar Power Innovation & Research Enterprise – ASPIRE

- **Hemlock Semiconductor Group**

- \$500m expansion- online & in use
- Broke ground for 2nd \$1b investment
- Workforce grown to 1800
- Moved into New Corporate Hdqtrs.
- Solar Panel Demonstration Garden

Dow Solar Solutions



- Midland = preferred site for first full-scale production facility for the DOW™ POWERHOUSE™ Solar Shingle
- Could bring 1,200 jobs by 2014
- Shingles already manufactured in existing small-scale market development plant at Michigan Operations
- TIME Magazine named the DOW™ POWERHOUSE™ Solar Shingle one of the 50 Best Inventions of 2009



Saginaw County and Great Lakes Bay Region Solar Related Projects

Company	Investment	Jobs
Hemlock Semiconductor	\$2.5 B in 5 Years	1,800 Permanent 800 Construction
Dow Corning Corp. Solar Solutions Applications Center	\$6.5 M in 2 Years	25
Dow Corning Corp. Monosilanes Facility	\$100+ Million	30
The Dow Chemical Co. Michigan Operations – Solar Shingle	\$50 M	800
Dow Chemical – Kokam America – Townsend Ventures (advanced battery)	\$665 M	885
Evergreen Solar (string ribbon technology)	\$55.2 M	101
GlobalWatt (solar modules & mobile apps)	\$177 M	500
Other Prospects.....		

Chemical Industry Partnership Activities



- Coordinated Marketing and Outreach
- Created a Chemical Processing Fast Start Program
- Increased AAS enrollments and graduates
- Increased placements to employment
- Increase student financial support
- Increased high school dual enrollment



Chemical Process Fast Start

- 12 week program
 - #7 starting May 9, 2011
- 480 training hours
- Designed for regional chemical employers
- Competitive application process



Delta College Solar Manufacturing Fast Start



- 6 week program
- 225 training hours
- Designed with regional employers-immediate hiring needs
- Competitive application process



DK Advanced Battery Group



- Dow Chemical and Kokam America
- 800,000-square-foot lithium polymer battery manufacturing facility
- Anticipated \$665 million investment
- 600 total new jobs anticipated; 320 during Phase I
- First phase anticipated to be online by the first half of 2012; second phase dependent upon funding sources
- When completed, facility will produce enough batteries to supply 60,000 hybrid or electric vehicles per year





Advanced Battery Manufacturing Fast Start



- 10 week program
 - #2 start June 13, 2011
- 400 training hours
- Designed for Dow Kokam
- Competitive application process

Effective Collaboration



- **We work together**
- **We share and leverage resources**
- **We value quality and continuous improvement**
- **We have jointly created an economic impact**





Questions



Thank You!