Accelerating the Electrification of U.S. Drive Trains: Ready and Affordable Technology Solutions for Domestically Manufactured Advanced Batteries

Larry Atkins
Exide Technologies
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Overview

Timeline
• Start Project - Dec 2009
• Project Finish - Dec 2012
• Percent complete - 42% (through Feb 2011)

Budget
• Total project budget - $70.0M
  – DOE share - $34.3M (49%)
  – Exide share - $35.7M (51%)
• Funds received to date = $ 14.5M
  – As of Feb 2011
• Plan remainder of FY11 = $12.3M
  FY12 & 13 = $ 7.5M

Barriers & Targets
• Advanced Battery Production Capacity - (Domestic) to Enable Advanced Vehicles
  – Improved Energy Efficiency
  – Reduced Dependence on Foreign Oil
  – Reduction in Greenhouse Gasses
  – Enhancing National Security
• ARRA Targets
  – Stimulate Economy
  – Increase Domestic Employment

Partners
• No Project Partnerships
  • Exide Share – Internally Funded
• Customer Support
  • 17 Commitment/Support Letters
• Material Vendor Support
  • Strategic Supply Agreements
Project Objectives

This project covers the expansion of Exide Technologies’ manufacturing capacity for producing advanced batteries in existing U.S.-based battery plants

- The project plan is to implement a combined increase in yearly production capacity of 1.5 million additional units at two of Exide’s current manufacturing locations
  - Columbus, Georgia
  - Bristol, Tennessee

- These advanced battery technologies are targeted to have an accelerated near-term impact (in high volume) for micro-hybrid vehicles, idle reduction commercial vehicles, and other strategic market segments
Project Objectives

- This manufacturing expansion project involves two of Exide’s global technologies: a Spiral Wound Absorbed Glass Mat (AGM) design and a Flat Plate AGM design, both of which will be manufactured with advanced carbon technology as required by customer specific advanced vehicle applications.

Spiral Wound Example

Flat Plate Example
Project Objectives

The Exide Advanced Battery Expansion Project Addresses Key Program Targets - ARRA and VT Program

- $70M in direct economic activity in two domestic locations over the 3 year scope of the project

- 320 manufacturing jobs in areas hit hard by the economic downturn
  - 200 jobs in Columbus GA
  - 120 jobs in Bristol TN

- When installed in vehicles incorporating energy management technologies, these advanced batteries enable a savings potential of
  - 75 million gallons of fuel per year → more than $200M at the pump
  - 3 million barrels reduction of imported oil per year
  - 600,000 metric tons of CO₂ per year in reduced emissions
Project Milestones

FY10

- DOE Agreement Finalized – Dec 09
  - 10% spending cap pending NEPA EA
- DCAA Audit Report Accepted – Mar 10
- Go/No-Go NEPA EA (FONSI) – Mar 10
  - Full approval achieved / spending cap removed
- Substantial Progress in Procurement & Installation Phase
- 22% Project Completion at end of FY10; spending based

FY11 – to date, through Feb 2011

- Continuing with Procurement & Installation Phase
  - All major equipment ordered; many items delivered and installed; some key production lines being debugged
- 42% Project Completion at end of Feb 2011
This project is being carried out in four major project phases at each location over the 3-year life of the project

- **Project Phases**
  1. Design Project and Arrange Funding
  2. Procurement & Installation
  3. Shakedown & Qualification
  4. Production Ramp-up & Market Deployment
The project deployment plan - key items

Project Task Areas

1) Pre-Agreement Planning
   a) Prepare documents for NEPA EA
   b) Preliminary product engineering planning
   c) Order long lead time equipment

2) Project Management and Planning
   a) Product design and planning
   b) Order remaining equipment
   c) Environmental Permitting
   d) Receive, Install and Debug Equipment
   e) Deliver to the DOE designated National Laboratory – 18 batteries manufactured from each completed manufacturing facility from low rate initial production for validation purposes

3) Production Scale-up Including Hiring and Training of New Manufacturing Employees

4) Achieve Production and Product Performance Targets
Accomplishments

The Exide ARRA Battery Project has made significant progress into the Procurement and Installation Phase During FY10 and into FY11

- Successful DOE negotiation period to achieve Cooperative Agreement
- Successful NEPA Environmental Assessment (EA) resulting in Finding of No Significant Impact (FONSI) for both project sites
- Successful DCAA Audit report regarding financial systems and controls
- Full time Project Managers hired for both production sites
- Formal Project Management software system implemented
- Capital equipment procurement on track
- Facility preparation for production areas nearing completion
- Equipment arriving and being installed and debugged; some component lines nearing production ready
Accomplishments

❖ Project Management
  – A formal organization has been implemented
    • High-level Steering Committee was formed with corporate officer leadership and direction
    – Periodic meeting schedule - established & on track
    • Functional teams were formed with experienced leaders
Accomplishments

Project Management Structure

- Implementation team established
- System software decisions and upgrades
- Special refresher training completed
  - PMBOK Principles
  - Common deployment across project sites
- DOE EVM spreadsheet
  - Verified conformance
  - Training for key team members
Accomplishments

DOE Merit Review - 2011

Direct Domestic Job Creation

- Actual project employment is progressing at both sites, but lags spending sharply during procurement and installation phase
  - Columbus GA – target 200 by Dec 2012
  - Bristol TN – target 120 by Dec 2012
  - Total Project – target employment 320

- Progression of direct headcount for this project

<table>
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<th></th>
<th>Actual thru Feb 2011</th>
<th>Planned by end of FY11</th>
<th>Planned by end of FY12</th>
<th>Planned at end of Project (Dec 2012)</th>
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<td>Columbus GA</td>
<td>14</td>
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<td>Total Project</td>
<td>18</td>
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Accomplishments

Project Deployment

- Columbus GA Site ~ Flat Plate AGM
  - Full time Project Manager hired to run project
  - Weekly *Columbus Expansion Team* meetings
    - cross functional team members
    - executive staff from commercial division
  - Bi-weekly Columbus team site meetings
    - Focused local task assignments and reviews
    - Status of key equipment
  - Major equipment/process technical reviews
    - Ongoing and structured to achieve needs
Accomplishments

- Project Deployment
  - Columbus GA Site ~ Flat Plate AGM
    - Procurement and Installation on track
      - Procurement of manufacturing equipment is progressing
      - Implementation – line-by-line is proceeding on schedule
      - Some key production lines are commissioned and ready for extended trials
      - Some component lines are nearing production ready state
      - Employee training is being conducted as equipment implementation and commissioning is progressing
      - There has been no slippage in projected timing from the date of the CA, no changes that would impact either the scope or cost of the project, and no foreseen problems that would prevent a successful completion of the project.
Accomplishments

DOE Merit Review - 2011

Project Deployment

– Bristol TN Site ~ Spiral Wound AGM
  • Full time Project Manager hired to run project
  • Weekly *Bristol Implementation Team* meetings
    – Cross functional team members
    – Focused local task assignments and reviews
  • Major equipment/process technical reviews
    – Ongoing and structured to achieve needs
  • Advanced Product Quality Planning (APQP) continuing with both DFMEA (Design Failure Mode and Effect Analysis) and PFMEA (Process Failure Mode and Effects Analysis) work being accomplished in addition to product/process documentation for plant start-up
Academics

Accomplishments

Project Deployment

- Bristol TN Site ~ Spiral Wound AGM
  - Environmental modeling completed allowing required permitting process to proceed according to plan
  - Equipment procurement activities on track
    - Most equipment on order; a few items delivered on site
    - Vendor visits, design reviews, progress updates continuing
  - Product Engineering on target plan
    - Finalized definition of full product line; designs progressing
  - There has been no slippage in projected timing from the date of the CA, no changes that would impact either the scope or cost of the project, and no foreseen problems that would prevent a successful completion of the project
Collaboration

• The Exide Advanced Battery Capacity Expansion Project Does Not Involve Direct Project Partners
  – Internally managed manufacturing capacity expansion
  – Company share internally funded

• Customer Commitments/Agreements
  – Proprietary listing of 17 supporting agreements with world-class Automotive / Truck / Military OEMs; as well as, associated Industrial products customers

• Material Vendor Agreements and Support
  – Strategic supplier agreement with Axion Power International, Inc., a developer of advanced batteries and components that incorporate patented lead carbon battery technology
  – Support from all material and supply vendors within the required time frame to meet full production capacity goals
Upcoming Work

- Major Progress Planned During FY11 & FY12
  - Both sites scheduled for heavy front loaded spending for major equipment and installation during period
    - ~57% of total project spending planned for FY11
    - ~20% of total project spending planned for FY12
  - Production lines are being implemented during FY11 according to schedule enabling line-by-line trials and final commissioning; extending into FY12
    - Certain key items were received early and in some cases have already been implemented
  - Hiring will continue, but will sharply lag rate of spending through FY11 into FY12 – long lead times on several key capital equipment items
Summary

Exide’s Battery Expansion Project

- **Relevance** - Ready and affordable technology solutions for domestically manufactured advanced batteries / accelerating the electrification of U.S. drive trains. Helps achieve domestic targeted goals for economic growth and employment, while enabling advanced vehicles that will reduce dependence on foreign oil, reduce emissions, and reduce greenhouse gases – all enhancing our national security.

- **Approach/Strategy** – Project management planning and system implemented for structured earned value management approach. Four project phases administered at two production sites with centralized direction and local deployment teams. Task structured and planned to achieve project objectives according to plan and budget.

- **Accomplishments** – Project sites active with project teams and activities progressing according to plan. All major capital items in procurement process; many items already received and being implemented. Line-by-line commissioning plan underway. Training progressing as component lines are progressing toward production ready state. There has been no slippage in projected timing from the date of the CA, no changes that would impact either the scope or cost of the project, and no foreseen problems that would prevent a successful completion of the project.

- **Collaboration** – Exide’s project does not include partner relationships. The company share of the funding is supplied fully from internal sources. Key customer relationships and strategic vendor support agreements will enable commercialization plan.

- **Upcoming Work** – Accelerating deployment activities are planned for the remainder of FY11 and into FY12 with 77% of the total project spending during that period. Long lead time on major capital equipment will allow employment numbers to proceed, but will lag spending.
Supplemental Slides
NEWS RELEASE

FOR IMMEDIATE RELEASE

MEDIA CONTACTS:

Jeannine Addams
Kristin Wohlleben
J.Addams & Partners, Inc.
404/231-1132 phone
jfaddams@jaddams.com
kwohlleben@jaddams.com

INVESTOR CONTACT:

Carol Knies
Senior Director of Investor Relations
Exide Technologies
678/666-9316 phone
carol.knies@exide.com

Exide Technologies Awarded Federal Grant
Company Addressing Affordable, Green, Ready Transportation Technology

Milton, Georgia – (August 7, 2009) – As part of President Obama’s announcement on Wednesday concerning new advanced battery and electric drive projects that will receive $2.4 billion in funding under the American Recovery and Reinvestment Act of 2009, Exide Technologies was awarded $34.3 million for its proposal for the domestic manufacture of affordable lead-acid batteries incorporating advanced carbon technology. Exide Technologies (NASDAQ: XIDE, www.exide.com) is a global leader in stored electrical-energy solutions for both transportation and industrial applications.

Exide’s project involves two of its global technologies: a spiral wound absorbed glass mat (AGM) design and a flat plate AGM design. These batteries are fully production ready, and Exide already has customers for these products.

In addition to its own advanced carbon technology, Exide recently entered into a memorandum of understanding with Axion Power International, Inc., a developer of advanced batteries and energy storage products that incorporate patented lead carbon battery PbcC Technology™. This collaboration provides a multi-dimensional structure of expertise that fuels Exide’s ability to expedite the development of advanced lead-acid batteries and new chemistries for use in product development, broadening opportunities in transportation channels.
The project will address the increased demand for micro-hybrid vehicles, idle reduction commercial vehicles, and other strategic market segments. Exide's project also is designed to offer favorable energy and environmental impacts. During the next three years, the Company believes that the investment will enable production capacity of approximately 1.5 million batteries and create as many as 320 manufacturing jobs—approximately 120 positions at its Transportation manufacturing operation in Bristol, Tennessee and 200 positions at its Industrial Energy manufacturing facility in Columbus, Georgia.

The Exide facility in Bristol, Tennessee will be the only advanced AGM spiral wound lead-acid battery production operation in the U.S. that serves the transportation market segment. The Columbus, Georgia project will address the investment in advanced AGM flat plate batteries. In addition to transportation applications, the Exide Columbus location is expected to offer these products and technology for industrial applications. Both Exide operations will manufacture the AGM batteries, with and without carbon, for stop-start, micro-hybrid and no-idle vehicle applications.

Exide estimates that these advanced AGM batteries, when installed in vehicles incorporating energy management technologies, can save approximately 75 million gallons of fuel per year—equivalent to $175 million at the pump. This fuel savings also is expected to reduce U.S. dependence on imported oil by more than three million barrels per year, likewise reducing emissions by more than 600,000 metric tons of carbon dioxide (CO₂) per year.

"Despite the current economic situation, we believe this area of investment can be expected to yield significant benefits including job creation, energy savings and an association with both advanced technology and environmental sustainability," said Gordon Ulsh, President and Chief Executive Officer of Exide Technologies. "The convergence of innovative designs, novel carbon-lead hybrid chemistries, and the application of nano technology—all in conjunction with lead-acid technology that has proven itself for more than a century—sets the stage for the delivery of superior energy storage solutions."
Exide also has received support from the states of Georgia and Tennessee that will amount to as much as $15 million in tax incentives and other benefits during the next decade.

**About Exide Technologies**

Exide Technologies, with operations in more than 80 countries, is one of the world's largest producers and recyclers of lead-acid batteries. The Company's four global business groups -- Transportation Americas, Transportation Europe and Rest of World, Industrial Energy Americas and Industrial Energy Europe and Rest of World -- provide a comprehensive range of stored electrical energy products and services for industrial and transportation applications.

Transportation markets include original-equipment and aftermarket automotive, heavy-duty truck, agricultural and marine applications, and new technologies for hybrid vehicles and automotive applications. Industrial markets include network power applications such as telecommunications systems, electric utilities, railroads, photovoltaic (solar-power related) and uninterruptible power supply (UPS), and motive-power applications including lift trucks, mining and other commercial vehicles.

Further information about Exide, including its financial results, are available at [www.exide.com](http://www.exide.com).

**Forward-Looking Statements**

Except for historical information, this press release may be deemed to contain "forward-looking" statements. The Company is including this cautionary statement for the express purpose of availing itself of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

Examples of forward-looking statements include, but are not limited to, (a) projections of revenues, cost of raw materials, income or loss, earnings or loss per share, capital expenditures, growth prospects, dividends, the effect of currency translations, capital structure and other financial items, (b) statements of plans and objectives of the Company or its management or Board of Directors, including the introduction of new products, or estimates or predictions of actions by customers, suppliers, competitors or regulating authorities, (c) statements of future economic performance and (d) statements of assumptions, such as the prevailing weather conditions in the Company's market areas, underlying other statements and statements about the Company or its business.

Factors that could cause actual results to differ materially from these forward-looking statements include, but are not limited to, the following general factors such as: (i) the Company's ability to implement and fund based on current liquidity business strategies and restructuring plans, (ii) unreasonable weather (warm winters and cold summers) which adversely affects demand for automotive and some industrial batteries, (iii) the Company's substantial debt and debt service requirements which may restrict the Company's operational and financial flexibility, as well as imposing significant interest and financing costs, (iv) the litigation proceedings to which the Company is subject, the results of which could have a material adverse effect on the Company and its business, (v) the realization of the tax benefits of the Company's net operating loss carry forwards, which is dependent upon future taxable income, (vi) the fact that lead, a major constituent in most of the Company's products, experiences significant fluctuations in market price and is a hazardous material that may give rise to costly environmental and safety claims, (vii) competitiveness of the battery markets in the Americas and Europe, (viii) risks involved in foreign operations such as disruption of markets, changes in import and export laws, currency restrictions, currency exchange rate fluctuations and possible terrorist attacks against U.S. interests, (ix) general economic conditions, (x) the ability to acquire goods and services and/or fulfill labor needs at budgeted costs, (xi) the Company's reliance on a single supplier for its polyethylene battery separators, (xii) the Company's ability to successfully pass along increased material costs to its customers, (xiii) the loss of one or more of the Company's major customers for its industrial or transportation products, (xiv) recently adopted U.S. lead emissions standards and the implementation of such standards by applicable states, and (xv) the ability of the Company's customers to pay for products and services in light of liquidity constraints resulting from global economic conditions and restrictive credit markets.

Therefore, the Company cautions each reader of this press release carefully to consider those factors set forth above and those factors described in the Company's annual report on Form 10-K filed on June 4, 2009 and its Form 10-Q filed on August 6, 2009. Such factors and statements have, in some instances, affected and in the future could affect the ability of the Company to achieve its projected results and may cause actual results to differ materially from those expressed herein. We undertake no obligation to update any forward-looking statements in this press release.