

# **Construction of a Li Ion Battery (LIB) Cathode Production Plant in Elyria, Ohio**

**Project ID# ARRAVT008**

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**BASF Corporation**

**May 16, 2012**

# Overview

## Timeline

- Project Start – April 1, 2010
- Project End – June 30, 2014
- 50-60% Complete

## Budget

- \$49,209,564 Million Award
  - 50% DOE (\$24,604,782)
  - 50% BASF (\$24,604,782)
- FY10 Funding Received = \$700K
- FY11 Funding Received = \$13M

## Barriers

- Cycle Life
- Safety
- High Energy Density

## Partners

- Various North American Cell Manufactures

# Objectives

- Construct a Lithium-Ion Cathode Manufacturing Facility Capable of Supplying Batteries for 100,000 PHEVs
- Equip Production Facility with Capability to Use Various Sources of Precursor Materials

# Milestones

Month/Year	Milestone
October 2010	Complete Conceptual Design Phase of Program and Kick-off Construction Program with a Ground Breaking Ceremony. (COMPLETED)
March 2011	Complete Extended Conceptual Design of Program and Obtain BASF Board Approval for Implementation of Phase I of Program, "Cathode Facility". (COMPLETED)
November 2011	Complete Construction of Cathode Facility Building and Begin Installation of Equipment (Completed)

# Approach

- Obtain License for the NCM Cathode Materials from Argonne National Lab.
- Complete Construction of Pilot Facility in Beachwood, Ohio and Begin Qualification with Key Global Customers.
- Construct our Production Facility in Elyria, Ohio as Part of the Recovery Act Program.

# Accomplishments

- BASF Completed the building construction in October 2011
- BASF Finalized the Specifications for NCM Materials (NCM 111, 523, 424) and Produces Pilot Samples for Qualification.
- BASF Materials Passed First Stage Qualification at Several Major Global Customers.

# Collaboration

- Technology Transfer: BASF Has Worked Extensively With Argonne National Lab to Transfer Their NCM Technology From Laboratory Scale to Production Scale.
- BASF Continues to Maintain Multiple Global R&D Partnerships to Ensure the Highest Quality Products in Terms of Performance, Reproducibility, Safety, and Cost

# May 2012 – May 2013

## Project Objectives

- Commission the Cathode Facility in Q3 2012 with NCM 111 material
- Begin final Stage of Qualification with Target Customers in Q4 2012
- Commissioning Ceremony for Facility Summer-Fall 2012



# Summary

- BASF Has Successfully Completed the Exterior Construction of a Lithium Ion Cathode Production Facility
- BASF is Installing all the Necessary Production Equipment to Produce Enough Material to Supply 100,000 PHEVs
- BASF is on Schedule to Commission of Cathode Facility in Q3 2012