

BASF Supports ARPA-E



Who we are: BASF in North America

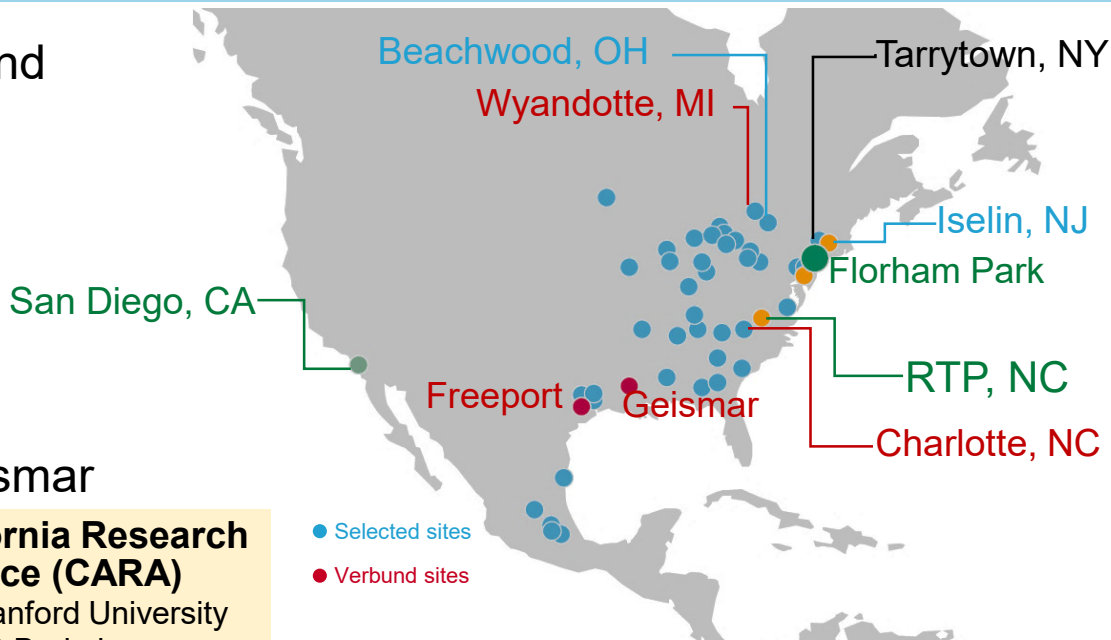
- ❑ Approximately 120 production and R&D sites
- ❑ 20,000+ employees
- ❑ Facilities in 32 states
- ❑ NA HQ in Florham Park, NJ
- ❑ Verbund sites in Freeport & Geismar
- ❑ ≈ 2,000 scientists in R&D

California Research Alliance (CARA)

- Stanford University
- UC Berkeley
- UC Los Angeles
- UC Davis
- UC San Diego

North American Center for Research on Advanced Materials (NORA)

- Harvard University
- Massachusetts Institute of Technology
- University of Massachusetts Amherst



BASF & ARPA-E

Supporting Transformational Energy Programs

- ❑ BASF corporate sponsor of the annual Energy Innovation Summit since 2011.
- ❑ Energy Innovation Summit provides Companies/Universities/National Labs collaborative opportunities with industry throughout the energy space via:
 - ✓ BASF research divisions
 - ✓ BASF business units e.g. channel to market
 - ✓ BASF venture capital & new business development
 - ✓ BASF manufacturing
 - ✓ BASF CARA & NORA postdoctoral centers
- ❑ ARPA-E program managers are thought leaders in the energy landscape for industry
- ❑ ARPA-E, with input from industry, develops white space for transformational energy solutions to ensure US energy independence, competitiveness and sustainability.
- ❑ Reauthorization of ARPA-E is imperative for energy technology leadership and creating the technological opportunities of tomorrow.

BASF Expense



**Chasing
Unicorns**

Coupling Industries & Growth Fields with ARPA-E Programs

Global need

Resources &
Environment

Food &
Nutrition

Quality of
Life

Key customer industries



Transportation



Agriculture



Construction



Energy



Consumer Goods



Electronics



Health & Nutrition

Growth fields

Batteries for Mobility

Enzymes

E-Power Management

Functional Crop Care

Heat Management
for Construction

Lightweight Composites

Organic Electronics

Plant Biotechnology

Water Solutions

Wind Energy

ARPA-E Funding
Programs

**ARPA-E programs
align with
technology growth
fields focused on
global needs**

Important DOE Programs

Programs Impacting the Built Environment

Building Energy Codes Program (Efficiency) - BTO

- Helps provide technical assistance to states, local governments to adopt and implement energy codes
- BTO strives to reduce by 2025, the energy use for space conditioning and water heating in single-family homes by 40% from 2010 levels

Building America Program (Efficiency)

- Leverages building science expertise, innovation, and applied research for high performance homes with emphasis on efficiency to benefit the residential building industry



We create chemistry