

| YEAR | REG | METRO        | AWARDEE  | OTF PROGRAM             | PROJECT   | AMOUNT      |
|------|-----|--------------|--|-------------------------|---|-------------|
| 2011 | NE  | Cleveland    | Arisdyne Systems, Inc.                               | Advanced Energy Program | Application of Static, Hydrodynamic Cavitation to Improve Efficiency, Productivity and Yield in the Production of Ethanol [Alternative Fuels]           | \$1,000,000 |
| 2011 | NE  | Cleveland    | EBO Group  | Advanced Energy Program | Innovative Oil Cooled Electric Motor Drive System to Enable Advanced Hybrid Electric Drives for Commercial Vehicles [ICE]                               | \$1,000,000 |
| 2011 | NE  | Cleveland    | Parker Hannifin                                      | Advanced Energy Program | Sub-Megawatt Class Hydrostatic Wind Turbine Drive Train Commercialization [Wind]  | \$1,000,000 |
| 2011 | NE  | Cleveland    | Phycal, LLC  | Advanced Energy Program | Development of Non-Destructive Algal Oil Extraction Process [Alternative Fuels]   | \$250,000   |
| 2011 | CE  | Columbus     | The Ohio State University Research Foundation        | Advanced Energy Program | Engineering Clostridia for Economic Production of Biobutanol as a Biofuel project [Alternative Fuels]   | \$1,000,000 |
| 2011 | CE  | Columbus     | The Ohio State University Research Foundation        | Advanced Energy Program | Carbon Negative Chemical Looping Process for Hydrogen or Liquid Fuel Synthesis Using Refuse Derived Fuel, Biomass, and/or Ohio Coal [Alternative Fuels] | \$408,801   |
| 2011 | CE  | Columbus     | Velocys, Inc.  | Advanced Energy Program | Microchannel Enabled Process for Synthetic Biofuels and Chemicals [Alternative Fuels]   | \$1,000,000 |
| 2010 | SE  | Athens       | Global Cooling Manufacturing Company                 | Advanced Energy Program | Advanced Commercial Stirling Cooler Development for Integration into Diverse Market Applications [End-use energy efficiency]                            | \$1,000,000 |
| 2010 | NE  | Cleveland    | Industrial Railway Switching & Services (IRSS), Inc. | Advanced Energy Program | Lean and Green Locomotive [End-use energy efficiency]   | \$450,000   |
| 2010 | WC  | Dayton       | Inorganic Specialists, Inc.                          | Advanced Energy Program | Manufacturing the Next Generation Lithium Ion Anode [Energy Storage]  | \$250,000   |
| 2010 | NE  | Cleveland    | Parker Hannifin Corporation                          | Advanced Energy Program | Ohio Wind Turbine Brake Commercialization [Wind]  | \$1,000,000 |
| 2010 | NW  | Toledo       | SuGanit Systems, Inc.                                | Advanced Energy Program | Scale-Up of Cellulosic Ethanol Process Based on Novel Biomass Pretreatment and Efficient Co-Fermentation [Bio-energy]                                   | \$999,900   |
| 2010 | NW  | Toledo       | University of Toledo                                 | Advanced Energy Program | Novel Cellulosic Biomass Fermentation Process for Ethanol Production [Alternative Fuels]  | \$250,000   |
| 2009 | NE  | Cleveland    | Avtron Industrial Automation                         | Advanced Energy Program | Absolute Magnetic Encoder Commercialization   | \$1,000,000 |
| 2009 | WC  | Dayton       | EMTEC  | Advanced Energy Program | Cooling of High Power Electronic Devices [End-use energy efficiency]  | \$1,000,000 |
| 2009 | WC  | Dayton       | Ershigs, Inc.  | Advanced Energy Program | Development and Commercialization of Composite Towers for Wind Turbines   | \$1,120,000 |
| 2009 | NE  | Cleveland    | GrafTech International Holdings, Inc.                | Advanced Energy Program | Development of Thermal Management Solutions for Lithium Ion Batteries   | \$965,000   |
| 2009 | NE  | Cleveland    | Novolyte Technologies, Inc.                          | Advanced Energy Program | Development and Commercialization of Advanced Electrolyte Materials for Next Generation Lithium-ion Batteries   | \$1,123,544 |
| 2009 | NE  | Cleveland    | quasar energy group                                  | Advanced Energy Program | Accelerating Commercialization of Anaerobic Digestion for Bioenergy Production  | \$2,000,000 |
| 2009 | NE  | Cleveland    | R. W. Beckett Corporation                            | Advanced Energy Program | Develop and Commercialize Residential Energy Storage Technology to Store Power Collected from any Source of Electricity for Later Use                   | \$1,000,000 |
| 2009 | CE  | Columbus     | Replex Plastics                                      | Advanced Energy Program | Concentrated Solar Power [Solar]  | \$350,000   |
| 2009 | NE  | Cleveland    | The Garland Company                                  | Advanced Energy Program | Garland Building Integrated Photovoltaic (BIPV) Systems [Solar]   | \$1,000,000 |
| 2009 | NW  | Toledo       | Xunlight 26 Solar, LLC                               | Advanced Energy Program | Flexible Thin-Film CdTe PV Modules [Solar]  | \$996,924   |
| 2008 |     | Columbus     | Adsorption Research, Inc.                            | Advanced Energy Program | Upgrading Landfill Gas to pipeline Quality Natural Gas via Pressure Swing Adsorption  | \$1,000,000 |
| 2008 | NW  | Port Clinton | Advanced Battery Concepts, LLC                       | Advanced Energy Program | Rapid Commercialization of GreenSeal Advanced High Energy Batteries   | \$1,000,000 |
| 2008 | WC  | Dayton       | Applied Sciences, Inc.                               | Advanced Energy Program | Development of Specialty Carbons for Energy Storage [Energy Storage]  | \$999,999   |
| 2008 | NE  | Akron        | Catacel Corporation                                  | Advanced Energy Program | Durability and Performance Evaluation of Catalysts on Metals [Alternative Fuels]  | \$759,502   |
| 2008 | NE  | Warren       | Delphi Automotive                                    | Advanced Energy Program | Aluminum Shielded Large Size Battery Cable Development for Electric Vehicle/Hybrid Electric Vehicles  | \$1,000,000 |
| 2008 | NE  | Walbridge    | GEM Energy Management, Inc.                          | Advanced Energy Program | Modular Integrated Energy Systems for Critical Operations   | \$1,000,000 |
| 2008 | CE  | Columbus     | Hyper Tech Research, Inc.                            | Advanced Energy Program | Wires and Coils for Superconducting Fault Current Limiters [Sensors, controls, & power management]  | \$1,000,000 |
| 2008 | NW  | Miamisburg   | Inorganic Specialists, Inc.                          | Advanced Energy Program | Lithium Ion Material Commercial Demonstration Project   | \$1,000,000 |
| 2008 | NE  | Cleveland    | MesoCoat Inc.  | Advanced Energy Program | High Power Density Powder Coating System for Infrastructure   | \$2,000,000 |
| 2008 | CE  | Columbus     | NexTech Materials, Ltd.                              | Advanced Energy Program | Market Readiness of Hydrogen Sensor for Advanced Energy Applications [ICE]  | \$549,088   |
| 2008 | SE  | Athens       | Ohio University                                      | Advanced Energy Program | Facility for the Development and Commercialization of Ammonia-Based Fuel Integrated Power [Alternative Fuels]   | \$972,992   |
| 2008 | CE  | Columbus     | SCI Engineered Materials, Inc                        | Advanced Energy Program | Commercialization of Rotatable Ceramic Sputtering Targets for Thin Film Photovoltaic Solar Cell Manufacturing [Solar]                                   | \$708,715   |
| 2008 | NW  | Toledo       | SuGanit Systems, Inc.                                | Advanced Energy Program | Pilot Scale Demonstration of Ligno-Cellulosic Fuel Ethanol  | \$2,000,000 |
| 2008 | NE  | Cleveland    | Tremco Incorporated                                  | Advanced Energy Program | Tremco BIPV Commercialization [Solar]   | \$1,000,000 |
| 2008 | NE  | Akron        | University of Akron Research Foundation              | Advanced Energy Program | Novel Polymeric Membranes for Advanced Energy Storage Devices, Batteries, and Fuel Cells [Energy Storage]   | \$250,000   |
| 2008 | WC  | Dayton       | WebCore Technologies, Inc                            | Advanced Energy Program | Commercialization of TYCOR Composite Material for its Wind Turbine Blades [Wind]  | \$1,000,000 |
| 2008 | NW  | Toledo       | Xunlight Corporation                                 | Advanced Energy Program | Online Performance Measurement for Roll-to-Roll Thin Film Photovoltaic Manufacturing [Solar]  | \$995,577   |