

## ADE Client Project & Funding Summary

### January 2022 - September 2023

**Please note:** ADE has a 100% success rate with Part I DOE Title 17 as well as Part 1 USDA Section 9003 loan guarantee applications and USDA Business & Industry (B&I) and Renewable Energy for America Program (REAP) loan applications. This is because ADE advises clients who fall short of the application requirements to not proceed until they are able to meet requirements. ADE also has a 100% success rate for projects that proceed through Part II / Part 2.

Of the projects that are invited to proceed to Part II/ Part 2 but do not do so, ADE clients have, in the majority of cases, been able to leverage their Part I / Part 1 applications and invitations to proceed from DOE and USDA to secure private sector financing to advance. ADE prepares applications so they can be used as a building block for multiple funding requests (see CJ Evans' article, "[The 'Lego-Set' approach to preparing applications and financial presentations](#)").

Competitive grant applications are much more challenging since there may be as many as 300+ applications competing for 5-10 awards. These applications are made more challenging because the solicitation requirements do not always fit with the way in which a project has been structured. In these cases, ADE focuses on highlighting and emphasizing the project features that fit the solicitation requirements to the degree that it is possible to do so.

	Type of Project	Type of Application	Total Project Cost	Funding Requested
1.	Development and construction of a <b>NET-ZERO EMISSIONS REFINERY</b> in Texas (capturing 95+% of CO <sub>2</sub> ), powered by 100% emission-free electricity generation, to produce 2.5 million gallons per year (gpy) of clean fuels from Gulf Coast naphtha and low-sulfur, light shale oil, integrating existing, commercially proven processing technologies with CO <sub>2</sub> capture and green hydrogen, produced from renewably powered electrolysis, to produce low-carbon-intensity gasoline, diesel and jet fuel, as well as sustainable aviation fuel (SAF).	DOE Title 17 Part I	\$5.73 billion	\$4.4 billion*
2.	Production of <b>LOW-CARBON-INTENSITY RENEWABLE DIESEL AND NAPHTHA</b> from woody biomass, combined with carbon capture, using an advanced high-efficiency biomass gasification technology, Fischer-Tropsch and upgrading via conventional refining technology, initially producing 32 million gpy of renewable diesel/SAF with future expansion of an additional 42 million gpy.	DOE Title 17 Part II	\$2.8 billion	\$1.6 billion*



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<b>3.</b> Construction of a facility with two separate lines, one of which will accept, recycle, and gasify biogenic wastes (food and other organics) to produce <b>SAF AND RENEWABLE DIESEL AND GASOLINE</b> , and one which will convert non-biogenic wastes (tires, plastics, and the like) into <b>BENZENE, TOLUENE, AND XYLENE</b> .	DOE Title 17 Part II	\$276 million	\$190.4 million*
<b>4.</b> U.S. commercial production of a <b>MICROBIAL PROTEIN</b> , using a gas-based fermentation process to produce high-quality proteins from carbon sources for pet and animal feeds and human foods.	DOE Title 17 Part II	\$880 million	\$616 million*
<b>5.</b> Construction of a commercial manufacturing facility to produce a complete range of medium-chain-length <b>BIODEGRADABLE PLASTICS</b> from renewable, sustainably sourced feedstocks (using the company's 390 patents in 20 countries).	DOE Title 17 Part II – in Loan Program Office due diligence	\$1.2 billion	\$782 million**
<b>6.</b> Construction of a facility to process and <b>RECYCLE INDUSTRIAL WASTE STREAMS</b> , including oil and natural gas, reducing GHG emissions from industrial facilities by 381,600 million tons per year, more than 80% below current emissions.	45C Qualifying Advanced Energy Project Tax Credit application	N/A – tax credit	N/A – tax credit
<b>7.</b> Construction of a pilot module for a <b>CARBON CAPTURE, UTILIZATION, AND STORAGE</b> technology that mineralizes CO <sub>2</sub> , converting it to a state of stable calcium carbonate.	DOE Carbon Management Funding Opportunity DE-FOA-0002614	\$8.7 million	\$6.99 million
<b>8.</b> Independent engineering, technical, and financial <b>DUE DILIGENCE AND CERTIFICATION</b> of final engineering, construction plans; construction budget; construction reports; EPC, feedstock, and offtake contracts; and financial projections for a 10 mgy SAF facility on behalf of the project investor (a leading software technology company)	Due Diligence - Private Sector Financing - #1	\$200 million	\$90 million**
<b>9.</b> Six-month review, update, and <b>RENEWAL OF DUE DILIGENCE CERTIFICATION</b>	Due Diligence - Private Sector Financing - #2	\$200 million	\$90 million**
<b>10.</b> <b>DUE DILIGENCE REVIEW AND CERTIFICATION</b> of the facility's Commissioning and Start Up (C&SU) Execution Plan	Due Diligence - Private Sector Financing - #3	\$200 million	\$90 million**
<b>11.</b> Technology, licensing, and project site <b>DUE DILIGENCE REVIEW AND CERTIFICATION</b> on behalf of a major British airline for construction of a SAF facility in Northeast England.	Due Diligence - Private Sector Financing - #4	New engagement	New engagement

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<p><b>12.</b> Construction of a cutting edge municipal solid waste processing facility using a client patent and improved equipment, processing, flow, and recovery designs to improve the retrieval of recyclables and <b>PRODUCE A SOLID RENEWABLE FUEL, WHICH IS A DIRECT REPLACEMENT FOR COAL</b>, which reduces GHG emissions from coal by 70%, eliminates the particulates and other toxins from burning coal that impact public health, and costs less than coal on a Btu basis.</p>	<p>Unsolicited Proposal: DOE &amp; EPA</p>	<p>\$150 million</p>	<p>\$75 million*</p>
<p><b>13.</b> This company has recruited top automotive designers from the leading car companies around the world, including, Tesla, Maserati, Pininfarina, and Ferrari, who have developed a <b>RADICAL, NEW, SINGULAR, FULLY SCALABLE AUTOMOTIVE PLATFORM, SHARED ACROSS ALL MODELS, WITH 50% FEWER PARTS THAN A TELA MODEL Y</b>, all focused on the ease of manufacturing, which will greatly reduce the GHG impacts and costs of automotive manufacturing, and deliver three electric, supercar-designed vehicles at affordable prices.</p>	<p>Unsolicited Proposal: DOE &amp; DOT</p>	<p>Stage 1: \$60 million</p>	<p>Stage 1: \$30 million*</p>
<p><b>14.</b> Construction of an initial 20 processing facilities in strategic locations around the U.S. using a patented <b>WASTE PLASTIC EXTRUSION</b> process, for which a pilot plant has been in operation for several years. Construction of a commercial demonstration scale facility (with a single extruder producing 10 tons of extrusions per year) is nearing completion. <b>The technology accepts all types of waste plastics, including those that currently cannot be recycled, which can be mixed, dirty, and contain oil and chemical residues</b>, which go through a proprietary ambient temperature chemical process that breaks the polymers into monomers which are then reformed into structurally strong building materials that can be shaped with conventional tools and used in the construction of buildings and infrastructure. <b>The extrusion has the same compression strength and three times the tensile strength of concrete, weighs 91% less than concrete, does not degrade or deform, and maintains structural integrity over a 360-degree F. (-160° to 200° F.) range.</b></p>	<p>Unsolicited Proposal: DOE + commercial lender and private investment outreach to provide a 50% match to federal funds</p>	<p>\$150 million</p>	<p>\$75 million* federal funding with \$75million* private sector match</p>
<p><b>15.</b> Development of a <b>HYDROGEN PRODUCTION SYSTEM</b> capable of producing hydrogen at a cost of \$0.82 per kilogram, with the energy equivalent</p>	<p>Unsolicited Proposal: DOE</p>	<p>\$300 million</p>	<p>\$150 million*</p>



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<p>of one gallon of regular gasoline – which is \$0.28 below the DOE goal of reducing the cost of clean hydrogen to \$1 per kilogram or less -- using repurposed disused and underused deep ocean offshore drilling platforms. The production system splits seawater directly into hydrogen without costly desalination, uses naturally occurring high pressures for hydrogen storage and high-pressure oxygen for power.</p>	<p>Unsolicited Proposal: DOE</p>	<p>\$300 million</p>	<p>\$150 million*</p>
<p><b>16.</b> Construction of an <b>INNOVATIVE “GEOTHERMAL-POWER-EVERYWHERE” SYSTEM</b>, through the integration of existing technologies, that bypass the limitations that have held back the expansion of geothermal power in the U.S. beyond known geothermal areas. The system will produce geothermal power at a cost that is only slightly above the current cost of wind and solar power.</p>	<p>Unsolicited Proposal: DOE</p>	<p>\$173.3 million</p>	<p>\$121.3 million*</p>
<p><b>17.</b> The first of multiple planned <b>MATERIALS CONVERSION FACILITIES</b> converting biomass into biochar, activated carbon, biofuels, heat, and electricity and tires into mulch crumb rubber, crumb rubber concrete, recovered carbon black, heat, and electricity.</p>	<p>Unsolicited Proposal: DOE, EPA, and USDA</p>	<p>\$31.8 million</p>	<p>\$17.4 million*</p>
<p><b>18.</b> Installation, operation, and maintenance of <b>SOLAR PANEL AND BATTERY STORAGE CLEAN POWER SYSTEMS ON 4,500+ MULTIFAMILY</b> apartment building and carport rooftops to deliver affordable clean power, battery backup, and grid stability to tenants, and generate revenues for building owners through lease payments for providing the rooftop space to install the clean power systems.</p>	<p>LOI for a USDA/RUS Powering Affordable Clean Energy (PACE) loan</p>	<p>\$120 million</p>	<p>\$57 million*</p>
<p><b>19.</b> Construction of a <b>STATE-OF-THE-ART, MODULAR, MULTIPLE-TECHNOLOGY-PRODUCTION-LINE LITHIUM BATTERY GIGAFACTORY</b> which, when completed, will be one of the largest gigafactories in North America with a battery capacity of 54 Gwh.and the ability to tailor battery solutions to different client needs.</p>	<p>DOE Advanced Technology Vehicle Manufacturing (ATVM) loan</p>	<p>\$3.5 billion</p>	<p>\$2.45 billion*</p>
<p><b>20.</b> A zero-waste, <b>100% RENEWABLE-POWERED, POULTRY BREEDING, HATCHERY, FEED MILL, POULTRY PROCESSING, ETHANOL PRODUCTION, CO<sub>2</sub> STORAGE, AND ANAEROBIC DIGESTER FACILITY COMPLEX</b>, using poultry waste streams to produce renewable fuels, heat and power cogeneration, renewable compressed natural gas, and renewable fertilizer.</p>	<p>USDA Partnerships for Climate-Smart Commodities</p>	<p>\$300 million</p>	<p>\$240 million</p>

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<b>21.</b> Construction of a commercial scale facility to <b>CAPTURE CO<sub>2</sub> EMISSIONS FROM ENERGY-INTENSIVE “HARD-TO-ABATE INDUSTRIAL INDUSTRIES”</b> that produce widely used materials, converting the captured CO <sub>2</sub> through a mineralization process into carbon negative specialty chemicals and associated co-products.	DOE DE-FOA-0002738 Carbon Capture Demonstration Projects	\$15.6 million	\$7.8 million
<b>22.</b> Expansion of manufacturing capacity and specialized polymer production to produce two <b>NEW, INNOVATIVE BATTERY BINDERS</b> that will enable higher battery density and allow manufacturers to move away from the current “wet cathode” production to a dry process that will eliminate the use of expensive solvents and <b>INCREASE THE MILES PER CHARGE FOR ELECTRIC VEHICLES BY UP TO 10%.</b>	DOE DE-FOA-0002678 Battery Materials and Battery Manufacturing	\$552 million	\$276 million
<b>23.</b> <b>INCREASED MANUFACTURING CAPACITY AND OPTIMIZATION OF AN IRON FLOW BATTERY TECHNOLOGY</b> , using a patented battery technology stack that provides cost effective, long-duration energy storage. The enhancements will reduce capital costs by 25%, decrease the cost of material inputs by 15% and increase production capacity to 3.5GWh annually.	DOE DE-FOA-0002678 Battery Materials and Battery Manufacturing	\$108 million	\$50 million
<b>24.</b> Expansion of the use of a non-food, non-GMO, climate-smart cover crop, grown between crop rotations, to produce <b>A CERTIFIABLE LOW-CARBON FUEL FEEDSTOCK THAT REMOVES CARBON FROM THE ATMOSPHERE AND RESTORES IT TO THE SOIL</b> , sequestering carbon, improving soil quality, and yielding a low-carbon oil for the production of renewable diesel and a high-protein meal co-product.	USDA-NRCS-COM-22-NOFO-0001139 Partnerships for Climate-Smart Commodities	\$150 million	\$100 million
<b>25.</b> <b>CONSTRUCTION OF A CARBON CONDUCTIVE ADDITIVES PLANT</b> , the only one of its kind in the U.S., to produce acetylene-based conductive additives that enhance the conductivity and extend the lifetime of lithium-ion batteries	DOE DE-FOA-0002678 Battery Materials and Battery Mfg	\$228 million	\$114 million
<b>26.</b> <b>CONSTRUCTION OF A PLANT TO PRODUCE 30,000 METRIC TONS OF CLEAN AMMONIA PER YEAR AS A BIO-BASED FERTILIZER WITH A LOW CARBON INTENSITY</b> , using a clean hydrogen byproduct from an existing facility that converts corn-based ethanol into renewable ethyl acetate, a chemical which is widely used in the manufacture of consumer products, from paints to cosmetics, and is typically produced from fossil fuels.	USDA RD-RBS-22-01-FPEP Agriculture Fertilizer Production Expansion	\$63 million	\$15.75 million**

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<b>27.</b> Construction of Phase 1 of 4 planned phases for an advanced technology, Good Manufacturing Practices (GMP) certified, high-quality, high-yield <b>CANNABIS GROWING FOR EXPORT FACILITY IN NORTH MACEDONIA, EUROPE.</b>	Private Sector Financing	Phase 1: \$2 million	Phase 1: \$1 million*
<b>28.</b> <b>CONSTRUCTION OF A FACILITY TO CONVERT BIOMASS INTO CLEAN HYDROGEN AND RENEWABLE NATURAL GAS</b> , using 100,000+ bone dry tons per year of orchard waste and forest residues and producing 3,800 metric tons per year of clean hydrogen fuel and 9,200 million tons per year of renewable natural gas.	USDA Section 9003 loan guarantee	\$173 million	\$136 million**
<b>29.</b> <b>CONSTRUCTION OF A FERMENTATION AND PURIFICATION FACILITY TO PRODUCE STRUCTURAL PROTEINS FOR FASHION APPAREL AND INDUSTRIAL MATERIALS</b> , using cornstarch-derived dextrose as a feedstock to produce an intermediate biobased protein polymer that can be processed into a variety of materials, including biobased fibers, films, foams, plastics, composites, and synthetic fur and leather.	USDA Section 9003 loan guarantee	\$342 million	\$150 million**
<b>30.</b> Scale-up of a facility to produce <b>A BIODEGRADABLE PHA BIOPOLYMER TO REPLACE FOSSIL-BASED PLASTICS</b> through the fermentation of plant-based oils and sugar.	USDA Section 9003 loan guarantee	\$50 million	\$40 million**

**CJ Evans, American Diversified Enterprises' Managing Director**, has written several articles that provide guidance on preparing applications, investor presentations, and other types of funding requests, as well as on advocating for one's cause. These include:

**Application Preparation:**

- [40 Mistakes that Will Kill an Application](#)
- [The 'Lego Set' Approach to Preparing Applications and Investor and Lender Presentations](#)
- [Complete Guide to Technology Readiness Level Federal Funding](#)
- [Federal Funding Opportunities for 9 Technology Readiness Levels](#)

**Advocacy:**

- [Sustainability, Innovation, and the Bioeconomy: How to Lobby for Favorable Government Policies](#)
- [15 Steps to Successfully Lobby Government for Your Cause \(and The Dirty Dozen No-Nos to Avoid\)](#)
- [Making a Difference: Enabling Bioeconomy Advancements Through Relationship Building and Advocacy](#)

**Other Recently Published Articles and eBook:**

- [Development Capital, the Lifblood of Every New Initiative, is Much Too Hard to Obtain](#)
- [How to Advocate for Development Capital](#)
- [YOU, ME, Life on the Planet, and the Climate Crisis](#)