

BRIEF DESCRIPTION

Electrical power generation in the U.S. is dependent upon burning coal, which creates coal fly ash during the coal combustion process. The majority of the fly ash, 30 million tons, is disposed of in landfills. However, coal fly ash contains rare earth elements (REE's), which have major applications in the consumer electronics, green energy, and national defense industries. Through Second Cycle's patented extraction process, we can separate the REE's from the ash more efficiently than any existing industry process, and can then sell the REE's to a global market. Given China's controlling 90% market position in REE's, this technological advantage in extraction gives us a unique edge in the industry of efficient REE production, and makes us first to market with a business of this type. We will partner with landfills by offering them the service of processing their ash, in which they will receive a small percentage of our profits, and extract the REE's on-site in our mobile labs.

MISSION

The goal of Second Cycle is to increase our national independence from the Chinese rare earth supply by creating a revenue opportunity for ash landfills. China forced the price of Dysprosium to increase by over 2,000% in 2010, which brought all consumer electronics industries grinding to a halt, and put pressure on our country's defensive capabilities. Second Cycle will create a stable local supply of REE's to fill a supply void in North America by bringing value to waste management companies.

TECHNOLOGY AND SYSTEMS

Our technology is capable of isolating rare earth elements from coal fly ash. We employ a patented liquid adsorbent to achieve isolation of the rare earth elements. Within this solution, there are selective molecules that attract the REE's, allowing for separation and resale from what was once a waste product. Our solution is not only unique, but is specially designed to resist degradation, making it more efficient, less complex, and reusable.

BUSINESS STRATEGY

Our mobile labs, made possible by the simplicity of our technology, will set up on-site at each partner landfill where they will process the ash for REE's and then return the ash to a separate partition of the same landfill. Being mobile normalizes our expenses, specifically expenses related to ash transportation, which would have imposed a limited radius on our operations due to costs increasing linearly with ash transportation distance. In exchange for access to ash in independent landfills, we will offer the management companies a small percentage of our net profits. This essentially makes us an ash-processing service company, and will incentivize additional landfills across the country to bear the cost of testing their ash for REE concentrations. This also transforms our costs of materials procurement and extraction into variable costs, making our company more resistant to cashflow related problems during future scaling of our business.

MARKET

Burning coal to produce electricity produces over 30 million tons of unused coal ash in the U.S. annually. This creates a huge supply of our feedstock coal ash. Furthermore, the demand for REE's is projected to increase by ~15% per year, mostly due to the consumer electronics and green energy industries, which gives us favorable future conditions for both the supply of our raw material (coal ash) and our processed product (rare earth elements).

MANAGEMENT

The team members are five students in the Wolff Center for Entrepreneurship in the Bauer School of Business at the University of Houston. The inventor of the technology is Dr. Allan Jacobson, Director of the Texas Center for Superconductivity at the University of Houston. This business concept development is being overseen by the faculty at the Wolff Center for Entrepreneurship. Second Cycle is currently developing a mentor and advisor network of industry experts in power generation, engineering and finance.

FINANCIAL PLAN

In Progress



Company Profile:

Industry: Power Generation; Recycling; Rare Earth Elements
Employees: 5
Founded: Fall 2015
NAICS Code: 325180
Rare Earth Compounds (not specified elsewhere by process), Manufacturing

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Competitors:

Baotou Iron and Steel Group
China Minmetals Corp

Patent:

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