

## **Elixsys Group Turns Coal Fly Ash Waste into Pennsylvania “Gold Mine”**

**State College, Penn., and Bainbridge Island, Wash. — September 1, 2016** — Today ClaroVia Technologies, LLC announced the formation of Elixsys Group, LLC, a company that will tackle the coal fly ash problem that has plagued the planet for decades. Now based in the town of State College, Pennsylvania, Elixsys Group uses a holistic, safe, completely scalable leaching process for the beneficiation of coal fly ash. The end-result is the production of value added resources, with examples including rare earth elements (REEs), barium sulfate, ammonium sulfate fertilizer, magnesium oxide, calcium chloride, zinc carbonate, silica, alumina, iron (III) oxide, magnesium oxide, and barium chloride, to name a few. The Elixsys Process may be performed on any type of input source material containing metal, including but not limited to coal fly ash, bottom ash, metal slurry, and any other ash, sand, contaminated soil, contaminated granular material, or combinations thereof.

“One important feature of the process is the extraction of rare earth elements from coal fly ash,” says Dr. Barry Scheetz, Principal Scientist for the Elixsys Group. “The REEs in the ash are incredibly valuable, and currently the US relies mainly on foreign sources for these elements. The process requires water, and we discovered that the technology allows for the use of acid mine drainage (AMD) as the water source in the process. Since AMD water is full of heavy metal components, REEs, etc., those components are removed by the process, and recycled into the commodities market. We will not only solve the fly ash storage problem, but can minimally help with remediating vast quantities of acid mine drainage water. Both sources of waste contain industrial quantities of marketable material.”

Leonard Passmore, Principal Engineer of the Elixsys Group, said, “Our methods are safe, leave no carbon footprint, will not generate additional waste streams, and all byproducts involved in the process are recycled.” Passmore further stated, “There are over 500 coal-electric facilities in the U.S. alone. To oversimplify it, an Elixsys Process plant can essentially be bolted on to an existing coal-electric facility, and begin to process the massive ash containment areas that have been accumulating for decades, as well as processing fresh ash in near-real-time as it is produced. The process is well suited to meet federal and state environmental guidelines, and can reduce overall ash disposal costs and litigation risks for coal-electric plants.”

Dan Preston, CEO of ClaroVia Technologies, stated, “The team has been in development on this concept since 2010, with the final roll-out occurring this summer. Along with the actual processing technology,

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we have developed an input-output modeling tool for use by individual coal-electric facilities. We've used the tool to evaluate several coal generation plants in Pennsylvania that operate in the non-regulated marketplace. In each case the potential revenue from the Elixsys-processed ash significantly exceeded the revenues available from the sale of electricity produced by the facility." Preston continued, "We've met with representatives from the DOE, and their modeling shows that the Elixsys Process has potential to be a player in the \$329 billion a year industry that is responsible for 618,000 American jobs." (As defined by DEO REE Workshop, Morgantown, PA, 2016).

## **About Elixsys Group**

Elixsys Group LLC is a waste remediation company now based in Pennsylvania. The company has developed a safe, completely scalable hydrometallurgical process utilizing a chloride leach solution for beneficiation of metal bearing waste streams. Developed in-house, the technology is currently supported by pending US patent application serial numbers 62/361,895, 62/373,839 and 62/362,880. The Elixsys Group offers confidential modeling of site-specific coal fly ash waste. Further details are available at [Info@elixsysgrp.com](mailto:Info@elixsysgrp.com) and [www.elixsysgrp.com](http://www.elixsysgrp.com).

## **About ClaroVia Technologies**

ClaroVia Technologies, LLC (CVT) is a specialized intellectual property services & technology development company, located on Bainbridge Island, WA. The company assists clients across a broad range of industry segments, including sensor fusion, nuclear waste remediation, automotive infotainment, augmented reality, mobile device connectivity, fiber optic acoustics, medical devices, distributed stock trading platforms, the list goes on. More information at [www.clarovia.com](http://www.clarovia.com)