

Issue Two | Autumn 2022

ASHES®

The Transglobal Magazine for By-Product Logistics & Trading

| Building The Future | Ash In Asia |
| Worldwide Fleet Growth | Ashes Goes To WOCA |
| Global Raw Materials | The Long View To Success |

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GLOBAL RAW MATERIALS

A large yellow excavator is shown in the process of loading a massive yellow dump truck with red rocks at a mining site. The excavator's arm is extended, and its bucket is positioned over the truck's bed. The truck is a large, heavy-duty vehicle with multiple axles and large tires. The background shows a steep, rocky hillside under a clear blue sky.

Whether shipping fly ash from India to Panama, copper slag from Japan to the U.S., or bauxite from Guyana to Colombia, Charah Solutions is the partner of choice.

The growing connectivity of global markets and the efficient pricing and supply of Global Raw Materials are more complex and essential than ever.

CHARAH SOLUTIONS GLOBAL RAW MATERIALS

ASHES looks at the US-based Charah Solutions.

The Global Raw Materials market is very dynamic and influenced significantly by world events. Supply chain risk fluctuates rapidly as global drivers affect product availability, price and transportation alternatives. In addition, indirect impacts such as weather, geopolitical events or the recent COVID-19 pandemic can significantly alter market territories, material availability, pricing and supply chain risk profiles. Domestically, demand across commercial construction markets as well as evolving government regulations have acute and long-lasting effects on the market. As a result, the growing connectivity of global markets and the efficient pricing and supply of Global Raw Materials are more complex and essential than ever.

With dedicated international resources, Charah Solutions is recognised as a leading Global Raw Materials Sales and Services partner with sourcing, logistics and infrastructure capabilities to procure, transport, manage and facilitate quality cement manufacturing raw materials and supplementary cementitious

materials (SCMs) sales transactions worldwide. Charah Solutions provides an international network of reliably sourced materials as well as the technical expertise and shipping, when and where global customers need it. This includes a broad portfolio of materials, backed by strong sales support, efficient inventory management, with customised options for door-to-door logistics covering every point on the globe.

Charah Solutions' product portfolio of Cement Manufacturing Raw Materials and SCMs include fly ash, bottom ash and alumina sources such as bauxite, clay and various slag options, as well as silica fume and pozzolan for cement and concrete manufacturing on a global basis. In addition, Charah Solutions offers a variety of iron sources including copper and zinc slags, iron rich materials (IRM), mill scale, steel slag and iron ore. Other offerings include various abrasives and natural and synthetic gypsum.

The strength of Charah Solutions' proven network provides a consistent and reliable sup-

ply of these globally sourced materials which manufacturers need to optimise their production processes and meet customer demand.

Charah Solutions not only provides these raw materials but also the complete logistics capabilities needed to manage every phase of product transportation and inventory management to materials handling, all while ensuring on-time delivery.

Logistics & Transportation Management

Our team provides complete logistics capabilities to manage every phase of raw materials transportation, from sourcing location to the end-user, whether by ocean-going bulk carriers, river barges, railcars or trucks plus on-site support, including the supervision of the loading and unloading of products at the port, terminal or rail siding in any location.

Inventory Management

Charah Solutions provides customised inventory management services to meet our customers' needs, so required inventory levels of all raw materials are maintained and ready to fulfil production and manufacturing schedules. This includes fore-



SUSTAINABLE FLY ASH SUPPLY. ENVIROSOURCE™ FLY ASH BENEFICIATION AND MULTISOURCE™ DELIVER.

Charah Solutions is a leader in delivering a responsive, consistent and reliable supply of fly ash and cement raw materials to producers for the production of green concrete products across the globe. Our proven EnviroSource™ fly ash beneficiation technology reduces carbon and other contaminants from harvested fly ash making it immediately available to market while reducing CO₂ and landfill waste. And the Charah Solutions global MultiSource™ materials network delivers a continuous supply of fly ash and cement raw materials to concrete producers playing a vital role in meeting their commitment of carbon neutral concrete. Step up to superior service and sustainable solutions. **Contact us today or visit charah.com for more information.**

Your Global Supply Solution For:

- Class C fly ash
- Class F fly ash
- Bottom ash
- Cement raw feed materials
- Integrated Gasification Combined Cycle (IGCC) slag
- MultiPozz™ pozzolan
- Gypsum



casting and planning, logistics, operations and warehouse/storage management with every unit of inventory tracked and monitored in real time for total management control to reduce transportation costs while increasing product performance and waste reduction.

Materials Handling – Effective storage and handling of raw materials have a direct impact on the quality of the products customers produce. Charah Solutions custom designs for material input and handling equipment to increase productivity including dewatering, excavating, stockpiling, screening and loading.

Charah Solutions' Global Raw Materials Sales experience ensures customers have the products they need to meet demand at the right price. Whether shipping fly ash from India to Panama, copper slag from Japan to the U.S., or bauxite from Guyana to Colombia, Charah Solutions is the partner of choice.

Charah Solutions utilises its unique Multi-Source® materials network to procure and supply all materials from both international and US sources, and regularly works with associations and customers to analyse data sources and assess forecasted changes in market size as well as potential risks to specific material sales. This type of analysis provides a long-term view of the markets to aid in identifying opportunities for customers. More acute market views are appropriately determined through continuous customer engagement and communications regarding the demand in the global marketplace.

Charah Solutions continually engages each customer to understand their need for products as well as the individual volumes required throughout the year. Through these ongoing communications, Charah Solutions is able to monitor key indicators to assess the market

and make applicable changes to ensure efficient pricing and delivery. This experience in international materials trading provides a direct view into current and future shipping rates as well as the impact these can have on global markets. A broad portfolio of products also allows Charah Solutions to offer cement and industrial producers options in the types of materials they use in their mix designs, ensuring they have the best possible raw material product at the right price to meet demands.

With the constant change of market dynamics, the ability to optimise per customer needs and market demand is an integral part of the supply chain analysis and procurement process. These factors combined with a broad materials portfolio, experienced sales support, logistics management and a global network are what make Charah Solutions a leader in the global raw materials industry. ●



Charah Solutions also provides the complete logistics capabilities needed to manage every phase of product transportation

NEWS IN BRIEF

From both sides of The Atlantic.

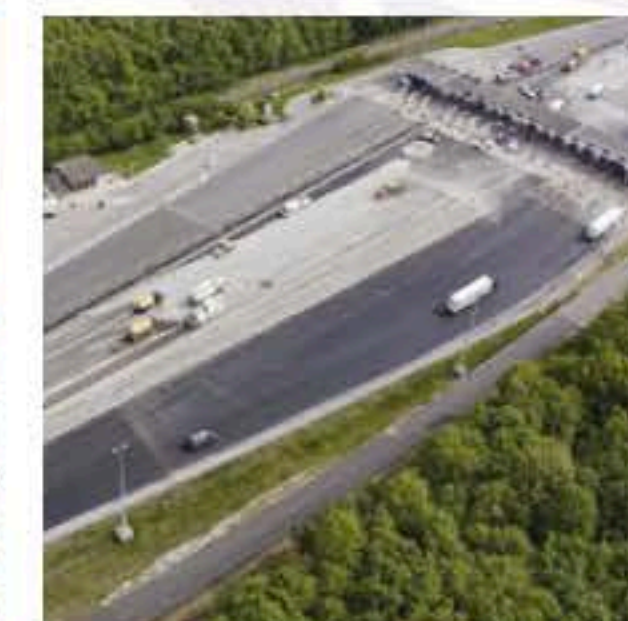


USA: Eco Material Technologies has announced an agreement with Georgia Power to harvest millions of tons of landfilled ash from Plant Bowen, one of the largest coal-fired power plants in North America.

Under the agreement, Eco Material will harvest 600,000 tons of landfilled ash per year from the plant in Cartersville, Ga. The effort will remove and beneficially use more than 9 million tons. There is also the potential to expand operations to a second location and double annual production to over 1 million tons.

The ash from Plant Bowen will be used in concrete blends to repair and construct bridges, roads, and buildings in Georgia as well as throughout the Southeast.

The material Eco Material is harvesting from Plant Bowen has been proven to enhance the strength, impermeability, and durability of concrete. The material will replace approximately 20 percent of carbon intensive Portland cement in concrete mixes. Portland cement accounts for approximately 8 percent of global carbon emissions. ●



France: At the beginning of May 2022, Eiffage Route tested its low-carbon Bio-Ertalh® process on the motorway network, on behalf of ATMB and under the aegis of the Comité Innovation Routes et Rues (CIRR) with Cerema.

Bio-Ertalh® is an exclusive Eiffage Route process for in-place cold recycling of pavements, implemented using the ARC® 1000 pavement recycling plant. It is a recycled asphalt mix treated with a hydraulic binder (ERTALH®) using a low-carbon hydraulic binder that mainly uses ash from biomass instead of clinker, developed in partnership with the company Surschiste at the Provence 4 Biomasse (P4B) plant in Meyreuil (13).

The work was carried out on the A40, on either side of the Viry toll barrier (74) in the Macon-Geneva direction, over a thickness of 20 cm and 10,000 m². The traffic on the platform is around 15,000 vehicles/day, 10% of which are heavy goods vehicles. No external materials were added and the use of ARC® 1000 limited the duration of the recycling to three days. ●

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