

Summary: Coal Combustion Residuals Recycling/Beneficial Use Assessment Business Plan

The Coal Combustion Residuals Recycling/Beneficial Use Assessment Business Plan was prepared AECOM on behalf of Dominion Energy Virginia and mandated by legislation that passed out of the General Assembly in 2018.

Ahead of the Assessment, Dominion Energy requested proposals from a number of qualified bidders. The proposals were to encompass beneficial use projects for CCR facilities throughout Virginia and in the Chesapeake Bay watershed. The Request for Proposals (RFP) sought to determine the following:

- Options for recycling of currently ponded ash
- The quantity of CCR that may be eligible for recycling or beneficial use
- The potential costs of recycling and beneficial use
- The probable market demand for recycled materials

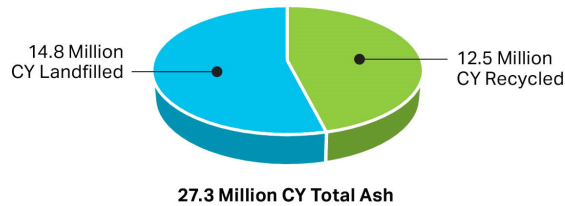
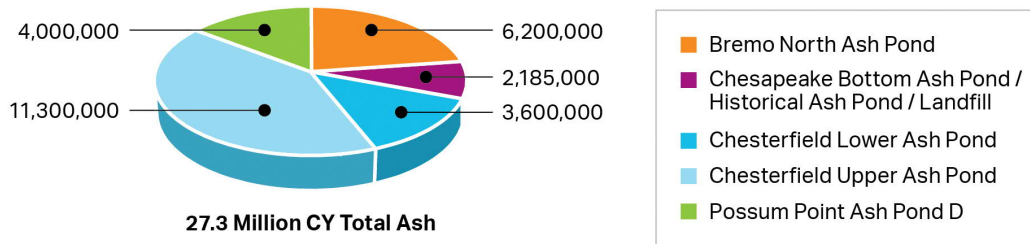
Five ash ponds at various Dominion power stations were considered in the RFP. The amount of CCR at these locations totaled 27.3 million cubic yards. Bidders assessed viable options for recycling in compliance with the CCR rule. Other requirements included meeting the CCR guidelines for encapsulated materials and closure of facilities within the CCR allotted time. Bidders considered recycling options along with closure and removal by landfilling. They also considered stakeholders, time to closure, compliance, risk, cost, and feasibility. Bidder proposals found the following:











- Of the 27.3 million cubic yards, 12.5 M CY (45%) can be recycled within the 15-year timeline
- 14.8 M CY can be landfilled within the 15-year timeframe
- Cost estimates range from \$2.8 billion to \$5.7 billion
- The Chesterfield Power Station project duration will likely take the full 15 years
- Given the timeline, further delay on action is not an option

Closure of the Chesapeake Energy Center was presented as most feasible in AECOM's report. Use of 124-161 trucks per day would take between 10 and 11 years while 270 railcars per year would take approximately 14 years. The report painted closure of the Chesterfield Power Station – our state's largest fossil fuel-fired power plant – as the least feasible, with project durations between 13 and 15 years by 278-300 trucks per day or 2,500-3750 railcars per year, respectively.

Proposals included a number of potential recycling technologies for each of the facilities with a preference for encapsulated and beneficial use products. The RFP requested beneficial use of CCR in encapsulated forms due to the environmental benefit.

Bidders also included market considerations in their proposals. These considerations included maximum local and regional market for recycled product, competing markets, and cost to transport recycled materials. Costs of recycling were inclusive of ash excavation, preparation for recycling, and cost to distribute final products to the market. Bidders generally avoided the North and South Carolina markets in an effort to avoid saturating the market. Bidders determined a local (within 200 miles) demand for 300,000 CY/year and a regional (1,000 miles) demand for 700,000 CY/year.



Power Station	Transportation Options	Vehicle Volume	Project Duration (Years)
Bremo Power Station		124 to 161 Trucks/day	10 to 11
		270 Railcars/year	14
Chesapeake Energy Center		65 to 143 Trucks/day	5 to 11
		20 Trucks/day + 67 Railcars/year	11
		Up to 5 Barges/year	10
Chesterfield Power Station		278 to 300 Trucks/day	15
		34 Trucks/day + 260 Railcars/year	13
		2,500 to 3,750 Railcars/year	15
Possum Point Power Station		105 to 114 Trucks/day	7 to 11
		232 Railcars/year	10