Feasibility Transportation Study
Coal to Liquid (CTL) and Coal to Gas (CTG)-Equipment

Presented to:	Prepared by:
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Site Locations:

- Big Shoals Site, Pikeville, KY
- Perry County Coal, Hazard, KY
- South Shores, KY- Former Eastern Terminal

Equipment List:

Equipment list	Weight	Length	Width	Height
Syngas Cooler	500-800Tons	140-160 ft	15.5 ft	15.5
Quench Gasifier	270-290 Tons	63 ft	13’-2”	13’-2”
Air Separation Cold boxes		160-200 ft	10-12 ft	10-12 ft
Cylinder	200-400 tons	100 ft.		

Scope of Work:

EMR was contracted by SMG on June 3rd representing other investing interests of several identities to investigate the feasibility of moving several large pieces from the closest barge and possible rail sidings to selected sites in the Commonwealth of Kentucky.

The goal of this report to evaluate the following:

- Route Possibilities: encompassing the Dimensions and Weights of each piece, Grade issues, and overhead issues.
- Community Impacts
- Restrictions/Issues
- Preliminary Cost Analyze

- General Permit Requirements
- Agency Coordination
- Site Requirements

EMR has also included a summary and explanation of the EMR equipment that will be utilized in moving these pieces. The actually size and type of trailer, configurations equipment cannot not be determined until final weights and dimensions, permits, final site review, and final schedules are confirmed and set.

Disclaimer:
EMR has visited each selected site, ran several route possibilities, examined possible barge landing facilities under the time allowed and the information provide. This by no means is to be considered an exhaustive study, there are multiple unknown variables the will need to re-examined when final confirmation on the size of the pieces has been determined. EMR was told that the larger pieces would be broken into 3-4 smaller pieces but this information was not available prior to the deadline of his report. Due to sheer size of pieces and the topography of the site locations there are formidable restrictions and limitations.

Edwards Moving and Rigging (EMR): Methodology and Rigging Examples

EMR specializes in large equipment moving and has a full arsenal of equipment to find solutions to any project no matter how great or small. Each project is carefully examined and engineered to make sure the safest and most efficient method in utilized.

As mentioned in the disclaimer, the size of the pieces as listed are very large but are well within the capabilities EMR has to move. We have trailer configurations that are capable of lifting up to 1800 Tons. The loading, moving, and offloading of the listed CTG/CTL equipment, though complex, is well within EMR's realm of past and present work.

The real issue with moving pieces of these sizes is the path from point "A" to point "B". Land movement really depends on the road specification which includes but not limited to: width, grade, supers (pitch of road in width), turns, overhead obstacles, and most importantly the feasibility of bridges that will need to be crossed. EMR can be utilize different trailers configurations as well as other equipment to accommodate these challenges while working with the KYDOT to obtain the necessary permits needed.

EMR uses primarily a combination of a modular hydraulic platform trailer call "Goldhofer" trailer. This trailer can be into multiple configurations to accommodate various loads for specific needs.

The Goldhofer trailer uses hydraulic stabilization so to keep the load level in all types of terrain and also can be set up to be pulled by prime movers(large tractors) or self-propelled units(SPT) to use for steep grades or tight environments. The combinations

for this trailer are unlimited and width/length can be increased to spread the weight as needed.

This picture illustrates moving a large piece of duct work. The hydraulic trailer ensures stability and allows for self loading operations without the need for a crane.

The Goldhofer in the picture above is a dual file (side by side trailers attached) with 24 axles containing a total of 194 tires. This 500 ton load was an onsite move at a power plant change out of one of their GSU transformers.
Offloading Barges is another facet of EMR that includes roll on and roll off capabilities. EMR has provided customers a complete turnkey by:

- Provide barge fleet to transport equipment on the interstate navigable waterway system
- Provide construction of barge landing site while working with the Corp of Engineers to obtain the necessary permit approvals.
- Provide Marine and project engineering for roll-on and roll-off projects
- Provide the necessary equipment for offloading and loading such as barge jumpers, portable anchors, tugs, tie-offs, tie-downs, etc….

Above is an example of a dryer being offloaded from a barge on an inland waterway. Note the use of barge jumper to connect barge to the landing to carry the load to its final destination.

EMR oversaw the building of this barge landing to bring a 500T transformer of the Ohio River for an emergency outage.

EMR Versatility

EMR does not only use Goldhofer but utilizes other types of trailers that includes self-propelled dollies, and beam trailers, 13 axle steerable, and drop decks in the Goldhofer.

Each of these trailers were designed based on the dimensions and weight of the piece of equipment

EMR can cross many bridges by laying bridge jumpers which allows the load to cross without jumping the bridge. (see below)

EMR as illustrated that the capabilities to move such pieces is available based on the final confirmation of route and site layout.

At each site offloading from trailer can be done with a variety of methods. Including but not limited to: Crane, Gantry Crane, Hydraulic-Lock Jack and slide. See below examples of each.

In Conclusion, no matter what the move involves EMR has the expertise, experience, and equipment to make the project go as safe and efficient as possible.