# *PJM Generator Interconnection Request*
# *Queue #M20*
# *Chestnut Valley 25kV*
# *Feasibility / Impact Study Report*

**January 2005**
**DMS# 300326v1**

# Chestnut Valley 25kV Feasibility / Impact Study

## General

G.A.S. Energy Technology, Inc. has proposed installation of a 5 MW biomass generator project consisting of seven (7) reciprocating engines to be constructed in German Township, Fayette County, Pennsylvania. The requested in-service date for the generation is April 30, 2005.

## Direct Connection

The proposed generation project will be connected to the subtransmission system via a new terminal on the Footedale 25kV bus. See Figure No. 1. A new two mile long subtransmission line will need to be built from the generation site to the Footedale substation. The new line is the responsibility of the project developer.

The scope of work and estimated cost by project segment are listed below:

- One 25kV breaker will be purchased and installed to connect the developer's transmission line to the Footedale 25kV bus. Two group operated disconnect switches, lightning protection and bus modifications will be included.

- 25kV metering equipment will be purchased and installed.

- Line relaying for the interconnection line. Relaying additions will be installed in the existing control building.

  Purchase and installation of protective relaying and related communications equipment at the generation site is not included in this scope of work. This is the responsibility of the interconnection customer.

The total cost for the direct connection work is estimated to be $190,000.

- Provide relaying specification requirements to G.A.S. Energy Technology for design and installation of the interconnection relaying to be located at the Chestnut Valley Generation Facility. An engineering review of the relaying design at Chestnut Valley (to coordinate with relaying at Footedale) is also included.

  Estimated Cost $5,000

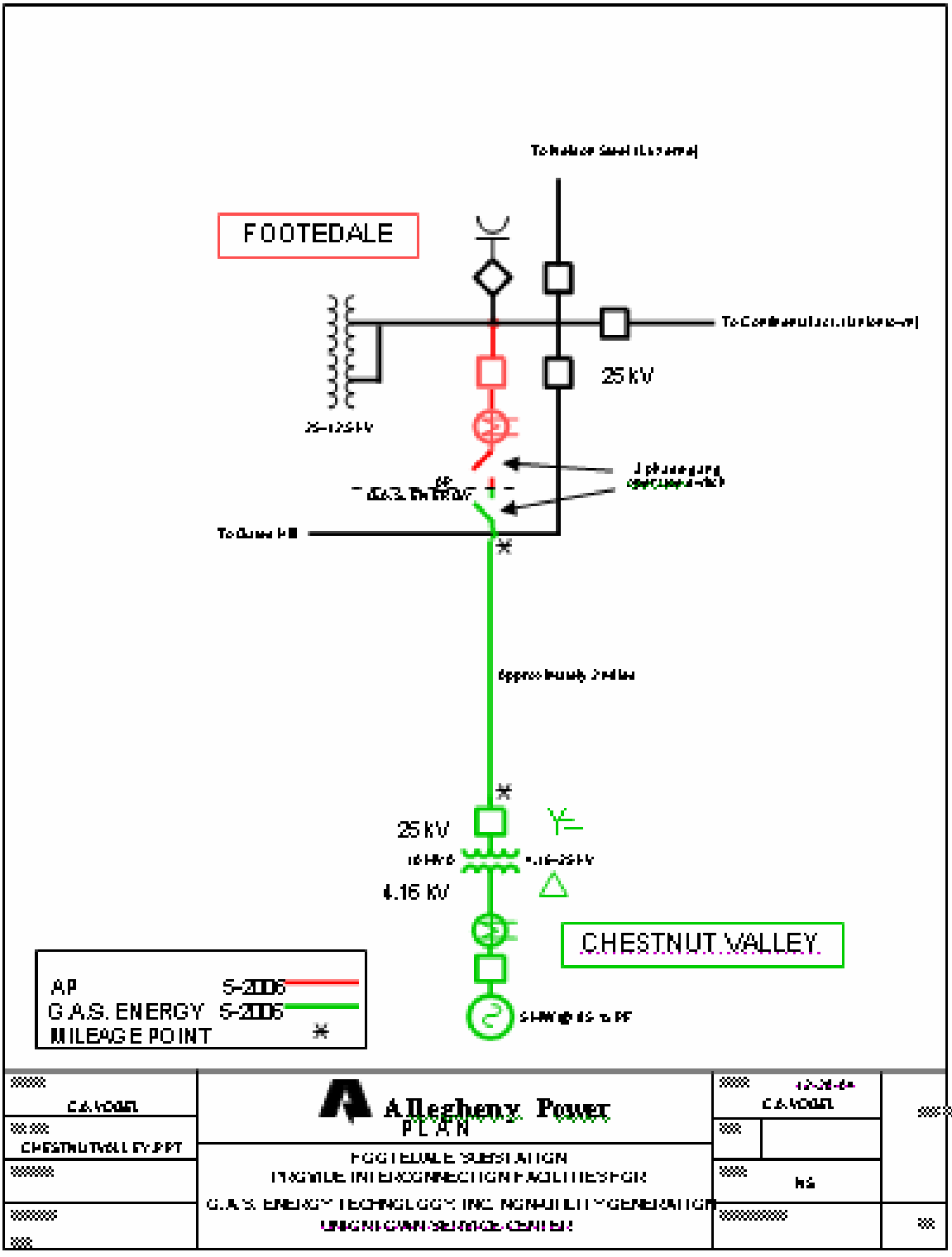
- Adding the proposed new generation will require that protective relaying coordination in the entire area be reviewed and changes will likely be required at one or more area substations.

  Estimated Cost $5,000.

The total estimated cost (not including tax gross-up) to install all of the facilities described individually above is **$200,000**.

These figures do not include construction of the two mile, 25kV line required to interconnect the customer's proposed new generating facilities with the subtransmission system grid at the Footedale substation. Route selection, line design, right of way acquisition and construction of this line will be entirely the responsibility of the customer.

This project will require 14 months to complete from the date of receipt of a signed ISA. PJM, the Transmission Owner, and the Transmission Customer should discuss and resolve the difference in the requested date and the projected in-service date of this interconnection. Delays could be based on weather, equipment lead-time, and availability of outages to perform the work.


FOOTEDALE
25 kV
25 kV
4.16 kV
CHESTNUT VALLEY
A.P S-2006
G.A.S. ENERGY S-2006
MILEAGE POINT
Allegheny Power
PLAN

**Network Impacts**

The **#M20 project was studied as a total injection of 5 MW capacity into the Footedale 25 kV-facility.** Project # M20 was evaluated for compliance with reliability criteria for summer peak conditions in 2009. Potential network impacts were as follows:

**Normal System (ECAR Standard 1)**

No identified problems.

**Single Contingency (ECAR Standard 2)**

No identified problems.

**Second Contingency (ECAR Standard 5)**

Not run.

**Multiple Facility Contingency – Tower Line Outages (ECAR Standard 3)**

Not run.

**Generator Deliverability**

Not run.

**Stability (ECAR Document No. 1)**

Not run.

**Short Circuit**

No problems were identified.

**New System Reinforcements**

No identified problems.

**Contribution to Previously Identified System Reinforcements**

None identified.

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