



## INTERCONNECT DATA FORM

**Note: Eastern Shore Natural Gas Company is referred to as "ESNG" throughout this form.**

**Return completed form by mail, fax or e-mail to:**

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**Eastern Shore Natural Gas Company**

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### PART 1: CUSTOMER PROFILE

Full Name of Customer:

Customer Contact Name:  Phone:

Address:

Fax:  Cell:  Email:

Engineering/Technical Contact:  Phone:

Address:

Fax:  Cell:  Email:

The deliveries will be for (check all that apply):

- LDC City Gate
- Commercial End User
- Industrial End User
- Electric Power Generation

Specify whether delivery will be:

- Existing Firm Transportation (FT)
- Interruptible Transportation (IT)
- New Firm Transportation
- Released Capacity

### PART 2: CUSTOMERS FACILITY DESCRIPTION

This request is for:  (A) a new interconnect or  (B) expansion/modification to an ex. Interconnect

If (B), what is the name of the ex. Interconnect?

If (B), what is the max. amount of time the station can be out of service?

What time period is best for the outage?

Once the interconnect is installed, can ESNG briefly interrupt service for routine maintenance?  Yes  No

Brief description of Customer's existing System, Proposed facilities and use:

### PART 3: PROPOSED METER STATION LOCATION

Unless otherwise agreed upon by ESNB, the meter station will be located at a site determined by ESNB.

City, County & State:

County road, state or US highway fronting or nearest site:

Approximate dimensions of site and acreage (if known):

Brief description of topography, existing condition and use:

Length of access road to be constructed:

Distance to Nearest Utilities:      Electric:       Telephone:

Distance from ESNB's pipeline to Customer's pipeline, plant or facility:

### PART 4: FLOW AND PRESSURE REQUIREMENTS

Abbreviations and conversion factors:

Mscfh = 1,000 scfh (@14.73 psia pressure base, 60 F temp. base); MMcfd = 1,000,000 scf per day  
 1,000 BTU/scf, i.e. 1.0 MMBTU/hr = 1.0 dt/hr = 1 Mscfh where MMBTU = 1,000,000 BTU and dt = dekatherm  
 Specify TBD for "To Be Determined", N/A for "Not Applicable", NR for "Not Required"

*To ensure that measurement facilities are appropriately designed for the full range of anticipated flow, please provide hourly flow RATES. Where minimum hourly flow rate is requested below, Minimum Flow is the lowest sustained hourly flow rate other than "no flow" or "0", for power generation facilities, it occurs while there is no power generation, yet minimal gas is delivered for plant utilities and for any heaters prior to operating the combustion turbines.*

#### GENERAL

Deliveries will generally be:  Constant year-round     Summer peaking     Winter peaking  
 Standby/alternate delivery point for city gate/LDC     Other (specify)

#### TABLE 1 - FLOW AND PRESSURE INFORMATION FOR COMMERCIAL END USERS

Maximum Hourly Flow (Mscfh):       Minimum Hourly Flow (>0) (Mscfh):   
 Average Daily Flow (Mscfd):       Average Daily Summer Flow (Mscfd):   
 Average Daily Winter Flow (Mscfd):       MAOP of Customer's System (psig):

#### TABLE 2 - FLOW RATE PROFILE FOR LDC / CITY GATE

Peak Season	Exist./Initial Phase 1	Future - Phase 2	Total
1. In-service Date (m/d/yy)			
2. What percentage of incremental flow rates will serve power generation			
3. Annual Peaking occurs from (m/d - m/d)			
4. Peak Days - No. days per year			
5. No. of hours peaking during each peak day			
6. Peak Hourly Flow Qpeak on Peak Day (Mscfh)			
7. Convert Qpeak to Daily Rate (24 x Mscfh/1000 = MMscfd)			
8. Minimum (Nighttime) Hourly flow (>0) QPeakMin on Peak Day			
9. Convert QPeakMin to Daily Rate (24 x Mscfh/1000 = MMscfd)			
<b>Off-Peak Season (Period other than above Peak Season)</b>			
10. Annual Off-Peak Season occurs from (m/d - m/d)			
11. Maximum Hourly Flow Qmax on Non Peak Day (Mscfh)			
12. Convert Qmax to Daily Rate (24 x Mscfh/1000 = MMscfd)			
13. Minimum Hourly Flow (>0) Qmin on Non-Peak Day (Mscfh)			
14. Convert Qmin to Daily Rate (24 x Mscfh/1000 =MMscfd)			

**TABLE 3 - FLOW RATE PROFILE FOR INDUSTRIAL END USERS AND POWER GENERATION PLANTS**

Proposed or Preliminary Name of Facility:

Make/Model-Combustion Turbine (CT)/Combined Cycle (CC):

*Note: Power generation units (CTs, CCs, etc.) referred to as "units" in the table below.*

	Exist./Initial Phase 1	Future Phase 2	Future Phase 3	Total
<b>Combustion Turbines for Power Generation</b>				
1. No. Units Installed				
2. In-service Date - Equipment testing (mm/dd/yy)				
3. In-service Date - Plant (mm/dd/yy)				
4. Annual Peaking occurs from (mm/dd - mm/dd)				
5. Peak Days - Number of days per year				
6. Number of hours peaking during each Peak Day				
7. MW Rating of each unit (MW)				
8. What is the fewest number of units which could be operating for a sustained period of several hours?				
<b>Fuel Rate During Peak Unit Operation</b>				
9. Hourly Fuel Rate per Unit @ Min. Ambient Temperature and 100% load (dt/hr = MMBTU/hr)				
10. Peak Fuel Rate Q <sub>peak</sub> - all units @ 100% Load (Mscfh)				
<b>Fuel Rate During Off-Peak or Baseload CT Operation</b>				
11. No. of units on-line during off-peak or baseload period				
12. Hourly Fuel Rate per unit @ <input type="text"/> % load (dt/hr)				
13. Total Off-Peak Fuel Rate Q <sub>offpeak</sub> - All Heaters (Mscfh)				
<b>Fuel Rate during Start-up of the First Unit</b>				
14. Duration of start-up of first unit to 100% load (minutes)				
15. Initial rate during firing up of unit (the instant when fuel is first introduced into the unit during start up) Q <sub>start</sub> (Mscfh)				
<b>Heaters for Heating Fuel Gas for the Power Generation Units</b>				
16. Will gas fired heaters be used to heat the fuel gas for the units? <input type="checkbox"/> Yes <input type="checkbox"/> No (If YES, complete below)				
<b>Heater Fuel Rate during Peak Unit Operation</b>				
17. Number of Heaters Installed				
18. Maximum Fuel Rate Required per Heater (MMBTU/hr)				
19. Total Heater Fuel Q <sub>trpeak</sub> - All Heaters (Mscfh)				
<b>Heater Fuel Rate during Off-Peak/Baseload CT Operation</b>				
20. During non-peaking hours, will heaters operate at less than 100% ("standby") load? <input type="checkbox"/> Yes <input type="checkbox"/> No				
21. If yes, how many heaters?				
22. Heater Fuel Rate during Standby per Heater (MMBTU/hr)				
23. Total Heater Fuel Rate Q <sub>troffpeak</sub> during Stanby (Mscfh)				

**Utility and Other Fuel Gas Consumption (i.e. space heating for building, water heater, etc.)**

24. Are there "utility gas" requirements other than the units and Heaters?  Yes  No (If YES, complete below)

25. Utility gas will be required:  Year round, 24 hr/d  Year round, daytime only  
 During Peaking Season (#4 specified above), daytime only  Other (specify):

	Exist./Initial Phase 1	Future Phase 2	Future Phase 3	Total
26. Minimum Utility Fuel rate Qminutl (Mscfh)				
27. Maximum Utility Fuel Rate Qmaxutl (Mscfh)				
<b>TOTAL GAS FLOW RATE SUMMARY</b>				
28. Total Peak Hourly Rate Qtotpeak = Qpeak + Qhtpeak + Qhtroffpeak + Qminutl (Mscfh)				
29. Convert Qtotpeak to Daily Rate (MMscfd)				
30. Total Non-Peak Hourly Rate Qtotoffpeak = Qoffpeak + Qhtroffpeak + Qminutl (Mscfh)				
31. Convert Qtotoffpeak to Daily Rate (MMscfd)				
32. Total Hourly Rate During Start-up, Including utilities Qtotstart = Qstart + Qhtroffpeak + Qmaxutl (Mscfh)				
33. Convert Qtotstart to Daily Rate (MMscfd)				
34. Total Hourly Rate during Unit Shutdown - Utility Only Qtotshutdown = Qminutl (Mscfh)				
35. Convert Qtotshutdown to Daily Rate (MMscfd)				

**PART 5: DESIGNATION OF RESPONSIBILITIES**

*As a general rule, ESNG recommends that each party design and construct those facilities which it proposes to own, operate and maintain, as indicated in the table below. In all instances, ESNG shall design, construct, own, operate and maintain the tap valve(s) to their pipeline(s). In addition, ESNG shall design, construct, own, and operate all custody transfer measurement equipment as indicated below. If otherwise, please designate a 'C' for Customer responsibility or 'ESNG' for ESNG responsibility, 'NR' for Not Required or 'NA' for Not Applicable.*

*Customer-owned and operated facilities installed in ESNG yard may be subject to limited review by ESNG for (1) compliance with federal codes and industry standard, (2) compliance with ESNG's own design and operation requirements (3) compatibility with ESNG's equipment and system operation and (4) adequate work space and safety for ESNG field operation personnel. Such review does not constitute that ESNG has verified and approved Customer's design calculations for MSOP, wall thickness and yield of materials, pressure drop, gas velocity, sizing of control valves, relief valve sizing, suitability of materials and coating, pipe stress and supports, compliance with all jurisdictional agency directives, regulations and limitations, and the like.*

Description	Design, Procure, Materials, Permits	Construct	Own	Operate and Maintain
Acquire land for the meter station facility				
Obtain clearances for cultural resource, threatened and endangered species, wetlands delineation, etc. for Prior Notice				
Obtain state and local approvals, variances and building permits for zoning, subdivision, conditional use and site plan				
Survey, topography, boundaries/easements, geotechnical				
Site development, clearing, grading, access road, parking, fencing, gravel, landscaping, soil erosion control				
Pipeline from ESNG's custody transfer point to Customer's plant site				
Tap valve(s) and manifold	ESNG	ESNG	ESNG	ESNG
Water bath gas heater, if applicable (see Part 7)				

Description	Design, Procure, Materials, Permits	Construct	Own	Operate and Maintain
Meter(s), isolation valves, custody transfer flow computer/RTU, transmitters, etc.	ESNG	ESNG	ESNG	ESNG
Meter Station headers, yard piping, building and foundation				
Phone line, radio or other data communications				
Furnish electric power to site, if required				
Pressure regulation and overpressure monitoring (see part 7)				
Odorization system (not currently applicable as all gas odorized)	N/A	N/A	N/A	N/A

Other:

## PART 6: CONTINUITY OF SERVICE AND POINT OF OWNERSHIP CHANGE

Does Customer want the meter station and tap designed for:

- (A) initial flow rate only (i.e. piping and equipment not sized to facilitate future incremental capacity expansion nor space provided for future meter tubes), i.e. not expandable
- (B) initial flow rate for the meters only; ultimate flow rate for yard piping, taps & headers (phased expansion)
- (C) ultimate flow rate for all facilities designed and installed during initial phase.

The tie-in and point of ownership change between ESNG and Customer facilities shall be located downstream of ESNG's meter station at the isolating flange set or joint installed by ESNG. What is Customer's proposed line size, wall thickness and yield strength at the tie-in?

	Yes	No
Occasionally, ESNG will temporarily remove a section of the pipeline from service for maintenance, repairs, smart pigging, upgrade and modification, or emergencies. If ESNG has more than one pipeline available, does Customer want a second tap on the second line to minimize service interruptions?	<input type="checkbox"/>	<input type="checkbox"/>
Does customer desire to have block and bypass valves installed in the meter station yard piping (i.e. station bypass) to continue service if the meter station is temporarily shut in? (This can also facilitate future expansion of the meter station while gas flows through the bypass.)	<input type="checkbox"/>	<input type="checkbox"/>

## PART 7: PRESSURE REGULATION, OVERPRESSURE PROTECTION AND GAS HEATING

Customer may be responsible for designing, constructing, owning and operating pressure reduction and overpressure protection facilities capable of receiving gas at ESNG's prevailing pressure, up to the MAOP. ESNG prefers that Customer operate, monitor and control their own system pressure, using their own design criteria and material specifications. Will Customer:

- (A) Design its pipeline downstream of the meter station at or above ESNG's pipeline pressure OR
- (B) Install, operate, and maintain (or request that ESNG provide) pressure regulation immediately downstream of (and adjacent to) the meter station and before their pipeline?

If (B), what will the reduced or outlet pressure be?  psig. Design pressure:  psig.

With regard to gas heating, will Customer:

- (A) Waive requirement for a gas heater (typical when no pressure control is required) OR
- (B) Request ESNG to install provisions for a future heater connection (facilitates future heater installation when necessary) OR
- (C) Install, operate, and maintain (or request that ESNG provide) gas heating equipment at the meter station?

## PART 8: ELECTRONIC FLOW MEASUREMENT

Will Customer want to:

- (A) connect transducers directly onto ESNG meter(s)/piping and feed the inputs to their own flow computer
- (B) install their own check meter, instruments and flow computer downstream of ESNG's meter station in the same yard
- (C) receive an instantaneous 4-20mA flow "rate" signal (corrected for temperature and pressure only, but not for BTU or specific gravity) directly from ESNG's flow computer
- (D) other - please specify / describe below:

## PART 9: OTHER REMARKS OR SPECIAL REQUIREMENTS

Prepared By:

Date: