

Annex 3 – Quality and Pressure Specification

1. SOL

1.1. Quality Specifications

The natural gas delivered by Shipper at the Inlet Point for transportation must be in line with the following chemical and physical specifications:

a) Chemical composition (in mol percent):

Methane (C ₁)	minimum	89.7 %
Ethan (C ₂)	maximum	6.3 %
Propane (C ₃), Butane (C ₄), Pentane and higher (C ₅ +)	maximum	2.1 %
Nitrogen (N ₂)	maximum	2.1 %
Carbon dioxide (CO ₂)	maximum	1.575 %
Oxygen (O ₂)	no oxygen content	

b) Sulfur content

Hydrogen sulfide (H ₂ S)	maximum	6.8 mg/Nm ³
Mercaptan sulfur (RSH)	maximum	16.9 mgS/Nm ³
Total sulfur content	maximum	112.7 mgS/Nm ³

c) Net calorific value

minimum	9.9 kWh/Nm ³
maximum	10.7 kWh/Nm ³

d) Hydrocarbon dew point

At pressures of between 39 and 69 bar, the hydrocarbon dew point must not be higher than minus 5 degree centigrade.

e) Water dew point

At a pressure of 39.0 bar, the water dew point must not be higher than minus 7 degree centigrade.

f) Impurities

The natural gas must be technically free of dust, iron oxide, sludge, solid bodies, liquid hydrocarbons and must not be odorized.

g) Temperature:

Maximum: 42°C

1.2. Pressure

1.2.1 "Pressure", expressed in bar (the equivalent of one hundred thousand pascals), indicates gauge pressure, i.e. the difference between the absolute pressure of the natural gas and the atmospheric pressure. The pressure specifications apply only to physical, but not to virtual transportation services.

1.2.2 Inlet Point

Shipper is not entitled to deliver natural gas to Gas Connect Austria at a pressure of below 53 bar and above 70 bar.

At discretion, Gas Connect Austria, however, may take over natural gas at a pressure of below 53 bar if, e.g., operation at lower pressure does not affect transportation through the pipeline system for other shippers and if no additional costs accrue.

1.2.3 Outlet Point

At the Outlet Point, Gas Connect Austria shall not deliver natural gas at a pressure of below 37 bar and above 70 bar.

In case gas is received at the Inlet Point at a pressure of below 53 bar, Gas Connect Austria is entitled to deliver natural gas at the Outlet Point at a pressure of below the minimum pressure of 37 bar.

2. HAG

2.1 Quality specifications

The natural gas delivered by Shipper at the Inlet Point for transportation must be in line with the following chemical and physical specifications:

a) Chemical composition (in mol percent):

Methane (C ₁)	minimum	89.7 %
Ethan (C ₂)	maximum	6.3 %
Propane, Butane, Pentane and higher	maximum	2.1 %
Nitrogen (N ₂)	maximum	2.1 %
Carbon dioxide (CO ₂)	maximum	1.575 %
Oxygen (O ₂)	no oxygen content	

b) Sulfur content

Hydrogen sulfide (H ₂ S)	maximum	6.3 mg/Nm ³
Mercaptan sulfur (RSH)	maximum	15.75 mgS/Nm ³
Total sulfur	maximum	105.0 mgS/Nm ³

c) Gross calorific value:

minimum	10.7 kWh/Nm ³
maximum	12.8 kWh/Nm ³

d) Hydrocarbon dew point

At pressures of between 40.0 and 70.0 bar, the hydrocarbon dew point must not be higher than 0 degree centigrade.

e) Water dew point

At a pressure of 40.2 bar, the water dew point must not be higher than minus 7 degree centigrade.

f) Impurities

The natural gas must be practically free of dust, iron oxide, sludge, solid bodies, liquid hydrocarbons and must not be odorized.

g) Temperature:

Maximum: plus 42°C

2.2. Pressure

2.2.1 "Pressure", expressed in bar (the equivalent of one hundred thousand pascals), indicates gauge pressure, i.e. the difference between the absolute pressure of the natural gas and the atmospheric pressure. The pressure specifications apply only to physical, but not to virtual transportation services.

2.2.2 Inlet Point Baumgarten a. d. March

Shipper is not entitled to deliver natural gas to Gas Connect Austria at a pressure of below 48 bar and above 70 bar.

At discretion, Gas Connect Austria, however, may take over natural gas at a pressure of below 48 bar if, e.g., operation at lower pressure does not affect transportation through the pipeline system for other shippers and if no additional costs accrue.

2.2.3 Outlet Point Kittsee

At the Outlet Point Kittsee, Gas Connect Austria shall not deliver natural gas at a pressure of below 38 bar and above 70 bar.

In case gas is received at the Inlet Point at a pressure of below 48 bar, Gas Connect Austria is entitled to deliver natural gas at the Outlet Point at a pressure of below the minimum pressure of 38 bar.

2.2.4 Outlet Point Mosonmagyaróvár

At the Outlet Point Mosonmagyaróvár, Gas Connect Austria shall not deliver natural gas at a pressure of below 38 bar and above 70 bar.

In case gas is received at the Inlet Point at a pressure of below 48 bar, Gas Connect Austria is entitled to deliver natural gas at the Outlet Point at a pressure of below the minimum pressure of 38 bar.

3. Penta West

3.1 Quality specifications

The natural gas delivered by Shipper at the Inlet Point for transportation must be in line with the following chemical and physical specifications:

a) Chemical composition (in mol percent):

Methane (C ₁)	minimum	85.0 %
Ethan (C ₂)	maximum	7.0 %
Propane (C ₃)	maximum	3.0 %
Butane (C ₄)	maximum	2.0 %
Pentane and higher (C ₅ +)	maximum	1.0 %
Nitrogen (N ₂)	maximum	5.0 %
Carbon dioxide (CO ₂)	maximum	2.0 %
Oxygen (O ₂)	maximum	0.02 %

b) Sulfur content

Hydrogen sulfide (H ₂ S)	maximum	6.8 mg/Nm ³
Mercaptan sulfur (RSH)	maximum	16.9 mgS/Nm ³
Total sulfur	maximum	120.0 mgS/Nm ³

c) Gross calorific value

minimum	10.7 kWh/Nm ³
maximum	12.8 kWh/Nm ³

d) Wobbe Index:

minimum	13.5 kWh/Nm ³
maximum	15.5 kWh/Nm ³

e) Hydrocarbon dew point

At pressures of between 1.0 and 70.0 bar, the hydrocarbon dew point must not be higher than 0 degree centigrade.

f) Water dew point

At a pressure of 64.0 bar, the water dew point must not be higher than minus 8 degree centigrade.

g) Impurities

The natural gas must be technically free of dust, iron oxide, sludge, solid bodies, liquid hydrocarbons and must not be odorized.

h) Temperature:

Maximum: plus 50°C

3.2. Pressure

3.2.1 "Pressure", expressed in bar (the equivalent of one hundred thousand pascals), indicates gauge pressure, i.e. the difference between the absolute pressure of the natural gas and the atmospheric pressure. The pressure specifications apply only to physical, but not to virtual transportation services.

3.2.2 Inlet Point

Shipper is not entitled to deliver natural gas to Gas Connect Austria at a pressure of below 64 bar and above 84 bar.

At discretion, Gas Connect Austria, however, may take over natural gas at a pressure of below 64 bar if, e.g., operation at lower pressure does not affect transportation through the pipeline system for other shippers and if no additional costs accrue.

3.2.3 Outlet Point

At the Outlet Point, Gas Connect Austria shall not deliver natural gas at a pressure of below 45 bar and above 84 bar.

In case gas is received at the Inlet Point at a pressure of below 64 bar, Gas Connect Austria is entitled to deliver natural gas at the Outlet Point at a pressure of below the minimum pressure of 45 bar.

4. MAB

4.1 Quality specifications

The natural gas delivered by Shipper at the Inlet Point for transportation must be in line with the following chemical and physical specifications:

a) Chemical composition (in mol percent):

Methane (C ₁)	minimum	85.0 %
Ethan (C ₂)	maximum	6.0 %
Propane (C ₃)	maximum	3.0 %
Butane (C ₄)	maximum	2.0 %
Pentane and higher (C ₅ +)	maximum	1.0 %
Nitrogen (N ₂)	maximum	5.0 %
Carbon dioxide (CO ₂)	maximum	2.0 %
Oxygen (O ₂)	maximum	0.02 %

b) Sulfur content

Hydrogen sulfide (H ₂ S)	maximum	5.4 mg/Nm ³
Mercaptan sulfur (RSH)	maximum	16.1 mgS/Nm ³
Total sulfur	maximum	107.3 mgS/Nm ³

c) Gross calorific value

minimum	10.9 kWh/Nm ³
maximum	12.3 kWh/Nm ³

d) Wobbe Index:

minimum	14.0 kWh/Nm ³
maximum	15.5 kWh/Nm ³

e) Hydrocarbon dew point

At pressures of between 1.0 and 70.0 bar, the hydrocarbon dew point must not be higher than 0 degree centigrade.

f) Water dew point

At a pressure of 40.0 bar, the water dew point must not be higher than minus 8 degree centigrade.

g) Impurities

The natural gas must be technically free of dust, iron oxide, sludge, solid bodies, liquid hydrocarbons and must not be odorized.

h) Temperature:

Maximum: plus 50°C

4.2. Pressure

4.2.1 "Pressure", expressed in bar (the equivalent of one hundred thousand pascals), indicates gauge pressure, i.e. the difference between the absolute pressure of the natural gas and the atmospheric pressure.

4.2.2 Inlet Point

Shipper is not entitled to deliver natural gas to Gas Connect Austria at a pressure of below 56 bar and above 70 bar.

At discretion, Gas Connect Austria, however, may take over natural gas at a pressure of below 56 bar if, e.g., operation at lower pressure does not affect transportation through the pipeline system for other shippers and if no additional costs accrue.

4.2.3 Outlet Point

At the Outlet Point, Gas Connect Austria shall not deliver natural gas at a pressure of below 51 bar and above 70 bar.

In case gas is received at the Inlet Point at a pressure of below 56 bar, Gas Connect Austria is entitled to deliver natural gas at the Outlet Point at a pressure of below the minimum pressure of 51 bar.

5. KIP

5.1 Quality specifications

The natural gas delivered by Shipper at the Inlet Point for transportation must be in line with the following chemical and physical specifications:

a) Chemical composition (in mol percent):

Methane (C ₁)	minimum	89.7 %
Ethan (C ₂)	maximum	6.3 %
Propane, Butane, Pentane and higher	maximum	2.1 %
Nitrogen (N ₂)	maximum	2.1 %
Carbon dioxide (CO ₂)	maximum	1.575 %
Oxygen (O ₂)	no oxygen content	

b) Sulfur content

Hydrogen sulfide (H ₂ S)	maximum	6.3 mg/Nm ³
Mercaptan sulfur (RSH)	maximum	15.75 mgS/Nm ³
Total sulfur	maximum	105.0 mgS/Nm ³

c) Gross calorific value:

minimum	10.7 kWh/Nm ³
maximum	12.8 kWh/Nm ³

d) Hydrocarbon dew point

At pressures of between 40.0 and 70.0 bar, the hydrocarbon dew point must not be higher than 0 degree centigrade.

e) Water dew point

At a pressure of 40.2 bar, the water dew point must not be higher than minus 7 degree centigrade.

f) Impurities

The natural gas must be practically free of dust, iron oxide, sludge, solid bodies, liquid hydrocarbons and must not be odorized.

g) Temperature:

Maximum: plus 42°C

5.2. Pressure

5.2.1 "Pressure", expressed in bar (the equivalent of one hundred thousand pascals), indicates gauge pressure, i.e. the difference between the absolute pressure of the natural gas and the atmospheric pressure. The pressure specifications apply only to physical, but not to virtual transportation services.

5.2.2 Inlet Point

Shipper is not entitled to deliver natural gas to Gas Connect Austria at a pressure of below 38 bar and above 70 bar.

At discretion, Gas Connect Austria, however, may take over natural gas at a pressure of below 38 bar if, e.g., operation at lower pressure does not affect transportation through the pipeline system for other shippers and if no additional costs accrue.

5.2.3 Outlet Point

At the Outlet Point, Gas Connect Austria shall not deliver natural gas at a pressure of below 35 bar and above 70 bar.

In case gas is received at the Inlet Point at a pressure of below 38 bar, Gas Connect Austria is entitled to deliver natural gas at the Outlet Point at a pressure of below the minimum pressure of 35 bar.