Annex 2 - Quality and Pressure Specifications

Pressure

„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 non-physical transportation services.

Entry Point Überackern ABG

Normal cubic meter (Nm^3)

Normal cubic meter (Nm^3) is a cubic meter of natural gas at 273.15 K (= 0°C) and 101,325 kPa (=1.01325 bara).

Quality specifications

The natural gas delivered by the System User at the Entry Point Überackern ABG 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_2S)	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 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

Pressure
The System user is not entitled to deliver natural gas to Gas Connect Austria at the Entry Point Überackern ABG at a pressure of below 64 bar.

Entry Point Überackern Sudal

Normal cubic meter (Nm^3)
Normal cubic meter (Nm^3) is a cubic meter of natural gas at 273.15 K (= 0°C) and 101,325 kPa (=1.01325 bara).

Quality specifications
The natural gas delivered by the System User at the Entry Point Überackern Sudal 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 %
Ethane (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_2S)	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 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

Pressure
The System user is not entitled to deliver natural gas to Gas Connect Austria at the Entry Point Überackern Sudal at a pressure of below 64 bar.

Entry Point Überackern 7-fields

Normal cubic meter (Nm³)
Normal cubic meter (Nm³) is a cubic meter of natural gas at 273.15 K (= 0°C) and 101,325 kPa (=1.01325 bara).

Quality specifications
The natural gas delivered by the System User at the Entry Point Überackern 7-fields 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 %
Ethane (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_2S)	Maximum	6.8 mg/Nm³
Mercaptan sulfur (RSH)	Maximum	16.9 mgS/Nm³
Total sulfur	Maximum	120.0 mgS/Nm³

c) Gross calorific value:	Minimum	10.7 kWh/Nm³
	Maximum	12.8 kWh/Nm³
d) Wobbe-Index:	Minimum	13.5 kWh/Nm³
	Maximum	15.5 kWh/Nm³

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

Pressure
The System user is not entitled to deliver natural gas to Gas Connect Austria at the Entry Point Überackern 7-fields at a pressure of below 64 bar.

Entry Point Baumgarten GCA

Normal cubic meter (Nm³)
Normal cubic meter (Nm³) is a cubic meter of natural gas at 273.15 K (= 0°C) and 101,325 kPa (=1.01325 bara).

Quality specifications
The natural gas delivered by the System User at the Entry Point Baumgarten for transportation must be in line with the following chemical and physical specifications:

a) Chemical composition (in mol percent):

Methane (C1)	Minimum	89.7 %
Ethane (C2)	Maximum	6.3 %
Propane, Butane and Pentane and higher	Maximum	2.1 %
Nitrogen (N2)	Maximum	2.1 %
Carbon dioxide (CO2)	Maximum	1.575 %
Oxygen (O2)	no oxygen content	

b)

Carbon oxysulfide (COS)		Maximum	5.0 mg/Nm³
Hydrogen sulfid (H_2S)		Maximum	5.0 mg/Nm³
Mercaptan sulfur (RSH)		Maximum	6.0 mgS/Nm³
Total sulfur	in case of incidences	Maximum	105.0 mgS/Nm³
	yearly average	Maximum	30.0 mgS/Nm³
	continuously	Maximum	10.0 mgS/Nm³

c) Gross calorific value:	Minimum	10.7 kWh/Nm³
	Maximum	12.8 kWh/Nm³
d) Wobbe-Index	Minimum	13.3 kWh/Nm³
	Maximum	15.7 kWh/Nm³

e) 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.

f) Water dew point:

At a pressure of 40.0 bar, the water dew point must not be higher than minus 8 degrees 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 42°C

Pressure

The System user is not entitled to deliver natural gas to Gas Connect Austria at the Entry Point Baumgarten at a pressure of below 64 bar.

Entry Point Baumgarten WAG

Normal cubic meter (Nm³)

Normal cubic meter (Nm³) is a cubic meter of natural gas at 273.15 K (= 0°C) and 101,325 kPa (=1.01325 bara).

Quality specifications

The natural gas delivered by the System User at the Entry Point Baumgarten WAG for transportation must be in line with the following chemical and physical specifications:

a) Chemical composition (in mol percent):

Methane (C1)	Minimum	85.0 %
Ethane (C2)	Maximum	7.0 %
Propane (C3)	Maximum	3.0 %
Butane (C4)	Maximum	2.0 %
Pentane and higher (C5+)	Maximum	1,0 %
Nitrogen (N2)	Maximum	5.0 %
Carbon dioxide (CO2)	Maximum	2.0 %
Oxygen (O2)	Mximum	0.02 %

b) Hydrogen sulfid (H_2S)		Maximum	6.8 mg/Nm³
Mercaptan sulfur (RSH)		Maximum	16.9 mgS/Nm³
Total sulfur		Maximum	120.0 mgS/Nm³
	for short term	Maximum	150.0 mgS/Nm³
c) Gross calorific value:		Minimum	10.7 kWh/Nm³
		Maximum	12.8 kWh/Nm³
d) Wobbe-Index		Minimum	13.5 kWh/Nm³
		Maximum	15.5 kWh/Nm³

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 degrees 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

Pressure
The System user is not entitled to deliver natural gas to Gas Connect Austria at the Entry Point Baumgarten WAG at a pressure of below 49 bar.

Entry Point Oberkappel

Normal cubic meter (Nm³)
Normal cubic meter (Nm³) is a cubic meter of natural gas at 273.15 K (= 0°C) and 101,325 kPa (=1.01325 bara).

Quality specifications
The natural gas delivered by the System User at the Entry Point Baumgarten WAG for transportation must be in line with the following chemical and physical specifications:

c) Chemical composition (in mol percent):

Methane (C1)		Minimum	85.0 %
Ethane (C2)		Maximum	7.0 %
Propane (C3)		Maximum	3.0 %
Butane (C4)		Maximum	2.0 %
Pentane and higher (C5+)		Maximum	1,0 %
Nitrogen (N2)		Maximum	5.0 %
Carbon dioxide (CO2)		Maximum	2.0 %
Oxygen (O2)		Mximum	0.02 %
d) Hydrogen sulfid (H_2S)		Maximum	6.8 mg/Nm³
Mercaptan sulfur (RSH)		Maximum	16.9 mgS/Nm³
Total sulfur		Maximum	120.0 mgS/Nm³
	for short term	Maximum	150.0 mgS/Nm³
c) Gross calorific value:		Minimum	10.7 kWh/Nm³
		Maximum	12.8 kWh/Nm³
d) Wobbe-Index		Minimum	13.5 kWh/Nm³
		Maximum	15.5 kWh/Nm³

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 degrees 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

Pressure

The System user is not entitled to deliver natural gas to Gas Connect Austria at the Entry Point Baumgarten WAG at a pressure of below 49 bar.

Exit Point Murfeld

Quality specifications
At the Exit Point Murfeld the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver natural gas at the Exit Point Murfeld with a minimum pressure of 37 bar.

Exit Point Mosonmagyarovar

Quality specifications
At the Exit Point Mosonmagyarovar the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver natural gas at the Exit Point Mosonmagyarovar with a minimum pressure of 38 bar.

Exit Point Überackern ABG

Quality specifications
At the Exit Point Überackern ABG the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver natural gas at the Exit Point Überackern ABG with a minimum pressure of 45 bar.

Exit Point Überackern Sudal

Quality specifications
At the Exit Point Überackern Sudal the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver natural gas at the Exit Point Überackern Sudal with a minimum pressure of 45 bar.

Exit Point Überackern 7-fields

Quality specifications
At the Exit Point Überackern 7-fields the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver natural gas at the Exit Point Überackern 7-fields with a minimum pressure of 45 bar.

Exit Point Petrzalka

Quality specifications
At the Exit Point Petrzalka the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver natural gas at the Exit Point Petrzalka with a minimum pressure of 27 bar.

Exit Point Baumgarten WAG

Quality specifications
At the Exit Point Baumgarten WAG the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver the natural gas at the exit point at a Pressure according to the actual hydraulic condition in the WAG System but not higher than 70 bar gauge.

Exit Point Oberkappel

Quality specifications
At the Exit Point Oberkappel the quality specifications of the downstream operator shall apply.

Pressure
Gas Connect Austria shall deliver the natural gas at the exit point at a Pressure according to the actual hydraulic condition in the WAG System but not higher than 70 bar gauge.