

Connection charges in natural gas sector of the Republic of Serbia

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1

CONTENTS

I INTRODUCTION

II METHODOLOGY FOR COSTS OF CONNECTION

III PRACTICAL EXAMPLE

2

I/a INTRODUCTION

Natural gas sector in the Republic of Serbia – basic data:

- The annual consumption: 2,3 billion m³ (92% import from Russian Federation and 8% domestic production)
- The number of transport companies: 2
- The number of distribution companies: 35
- The number of customers: 230.000 (97% households)
- The potential number of new customers: > 500.000
- The annual consumption of the average household, that uses G-4 measure device (with maximum installed capacity ≤ 6 m³/h), amounts to 1.200 m³

3

I/b INTRODUCTION

- May 2008: The Energy Agency of the Republic of Serbia determined and published the Methodology for setting criteria for setting costs of connection to the transportation and distribution system for natural gas.
- Methodology came into force as of 1 July 2008.
- Pursuant to the Energy Law, the Agency:
 - 1) shall determine the Methodology and monitor its application (analyse and control the costs of connection),
 - 2) however, shall not approve the costs of connection set by energy entities in accordance with the Methodology,
 - 3) in case of users' complaints, the Agency shall decide on the costs of connection set by the decision that approves the connection, and that is issued by the energy entities to whose gas pipe network connection shall be carried out.

4

I/c INTRODUCTION

- Pursuant to the Methodology the energy entities:
 - 1) shall determine the costs of connection annually,
 - 2) are obliged to provide the Agency with the Act on the costs of connection along with the comprehensive calculation of the standards and costs divided accordingly to each element determined by Methodology (i.e. with respect to the type of the devices, equipment, materials, works, projects and so on),
 - 3) are obliged to enable all interested users to have an insight into the Act on the costs of connection.
- The customers shall pay for the connection to the energy entities whose network they are to connect in accordance with the terms in the contract signed by them (terms of payment are different, but one-off up-front one is the most common case).

5

II/a METHODOLOGY FOR COSTS OF CONNECTION

- Prior to determining Methodology, the “deep” type connection charge was traditionally dominant (due to undeveloped gas pipe network and low use of system prices which was not enough to ensure the development of the network).
- The Methodology is primarily based on “shallow” type connection charge increased by the part of system costs incurred by connecting the facility to the specific network - that serves for developing the basic network (something between “shallow” and “deep” type connection charge).
- In the future, the Agency is going to modify the Methodology and move to “shallow” type of connection charge entirely.

6

II/b METHODOLOGY FOR COSTS OF CONNECTION

➤ Pertaining to the Methodology the costs of connection comprise:

- 1) the costs of construction planning,
- 2) the costs of equipment, devices and materials,
- 3) the costs of carrying out the works,
- 4) the costs of professional and operational works required to connect the facility to the system,
- 5) the part of system costs

➤ Depending on the network pressure, number and maximum installed capacity of metering devices at the point of connection to the network, the connections are divided into three types:

- 1) standard connection: G-2,5 measure device (with maximum installed capacity $\leq 4 \text{ m}^3/\text{h}$), G-4 ($\leq 6 \text{ m}^3/\text{h}$) and G-6 ($\leq 10 \text{ m}^3/\text{h}$), connected on network pressure $< 6 \text{ bar}$
- 2) individual connection (is each connection with maximum installed capacity exceeding $10 \text{ m}^3/\text{h}$)
- 3) group connection (collectively residence with ≥ 2 measure devices)

7

II/c METHODOLOGY FOR COSTS OF CONNECTION

➤ Costs of individual connection and group connection are determined as a set of total actual costs of connection building.

➤ Costs of standard connection are divided into fixed (for standard distance of the facility from the system – max. 12 m) and variable (for distance $> 20 \text{ m}$, and they are calculated per meter of length).

➤ The part of system costs (PSC) for a specific standard user:

$$\text{PSC} = \text{MICC} \times \text{UCC} \times ((\text{MNC} - \text{ENC}) / \text{MNC})$$

MICC – Maximum installed capacity of standard connection (in m^3/h),

UCC – Unit capacity cost (3.000 dinars per m^3/h),

MNC – Maximum network capacity (in m^3/h),

ENC – Employed network capacity (in m^3/h).

8

III/a PRACTICAL EXAMPLE:

Standard connection: Household, G-4 ($\leq 6 \text{ m}^3/\text{h}$), in US\$, without VAT

O/N	Description	Unit number	Quantity	Unit price (\$)	Total amount (\$)
1.	The costs of construction planning	Piece	1	135	135
2.	The costs of equipment, devices and materials				300
2.1.	Fixed costs of equipment, devices and materials				290
a.	Household measurable-regulative set (G-4)	Piece	1	185	185
b.	'Saddle' or T-part	Piece	1	22	22
c.	Clutch	Piece	2	3	6
d.	Intermediate part	Piece	1	15	15
e.	Protected polyethylene pipe	m	5	5	25
f.	...	...	...	...	...
2.2.	Variable costs of equipment, devices and materials				10
a.	Polyethylene pipe	m	12	0,7	8,5
b.	...	...	...	...	...

9

III/b PRACTICAL EXAMPLE:

Standard connection: Household, G-4 ($\leq 6 \text{ m}^3/\text{h}$), in US\$, without VAT

O/N	Description	Employees' qualification / Unit number	Working hours (h) / Quantity	Value of working hour (\$/h) / Unit price (\$)	Total amount (\$)
3.	The costs of carrying out the works				470
3.1.	Fixed costs of carrying out the works				380
a.	'Saddle' or T-part	Secondary	0,25	10	4
b.	Household measurable-regulative set (G-4)	Secondary	1	10	10
c.	Bitumen	m2	2,25	65	146
d.	Concrete	m3	0,225	190	43
e.	Use of vehicles, equipment and devices	1 of gasoline	35	2	70
f.	...	...	...	...	...
3.2.	Variable costs of carrying out the works				90
a.	Digging of ditch	Elementary	7	6	42
b.	...	...	...	...	...

10

III/c PRACTICAL EXAMPLE:

Standard connection: Household, G-4 ($\leq 6 \text{ m}^3/\text{h}$), in US\$, without VAT

O/N	Description	Employees' qualification	Working hours (h)	Value of working hour (\$/h)	Total amount (\$)
4.	The costs of professional and operational work				124
a.	Snapshot of facility location	Highly	0,75	16	12
b.	Construction monitoring	Highly	7	16	112
5.	Total costs (1+2+3+4)				1.029
6.	The part of system costs (PSC)				183
7.	TOTAL CONNECTION CHARGE (5+6)				1.212

11



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12