| | | | | Notes/Explanations | | |
|---|---|---|---|---|---|---|
| | **Gas Network Balancing** | | | | Legend | |
| | Country | | Hungary | | Name of the country | |
| | Date of the survey, validity af data | | 31.12.2006 | | Please indicate the relevant date regarding the said data. Example: 31.12.2004. If any data concerns for an other date, please indicate the relevant date. | |
| 1.0 | **Market partcipants:** | | | | These questions refer to the number of market participants. | |
| 1.1 | Number of integrated companies | pieces | 0 | | | |
| 1.2 | Number of wholesalers | pieces | 1 | | Number of public suppliers | |
| 1.3 | Number of active gastraders | pieces | 6 | | Number of traders supplying the eligible consumers | |
| 1.4 | Number of transmission co.(TSO) | pieces | 1 | | Please distinguish the domestic and transit transmission, if the transportation is accomplished via different system. | |
| 1.5 | Number of distribution company | pieces | 11 | | | |
| 1.6 | Number of direct customers who connect to the transmission system | pieces | 26 | | Industrial, powerplant consumers, or eligible consumers. | |
| 1.7 | Number of producers | pieces | 2 | | | |
| 1.8 | Number of eligible consumers connected to the transmission system, who supplied by themself or a Trader | pieces | 6 | | Number of those kind of consumers who has the right to choose their gastrader according to the market opening. | |
| 1.9 | Number of eligible consumers connected to the distribution system | pieces | 174 | | | |
| 1.9 | Task of the System Operator | | MOL Natural Gas Tranmission Plc. | | Who is responsible for the process of nomination, controll of transmission and gas accounting? | |
| 1.10 | Which company responsible for supply of household consumers ? | | E.ON Foldgaz Trade Plc. | | | |
| 1.11 | Which company responsible for transmission? | | MOL Natural Gas Tranmission Plc. | | | |
| 1.12 | Which company responsible for storage? | | E.ON Foldgaz Storage Plc. | | | |
| 1.13 | Who carries out the tasks of the System Operator | | | | | |
| 1.14 | What kind of services is ensured by the main companies? | | Single service: trading, transmission, storage | | Example: Integrated servise (Wholesale + transmission + storage) or single service only trading, or transmission, or storage. | |
| 1.15 | Structure of consumers in peak day | % | Households: xx%, commercial yy%, industrial zz%, Electricity&heating:vv% | | Indicate the daily consumption rate in peak day. example: households:50 %, commercial:20 %,industrial:10 %, electricity&heating:20 %. | |
| 1.16 | Structure of consumers in an average summer day | % | Households: xx%, commercial yy%, industrial zz%, Electricity&heating:vv% | | Indicate the daily consumption rate in an average summer day. example: households:20 %, commercial:20 %,industrial:10 %, electricity&heating:20 %, storage 30%. | |
| 2.0 | **Transmission system:** | | | | These questions refer to the gas supply, gas transmission system. | |
| 2.1 | Gas supply system 1 | Attachement 1 | | | A map about gas supply system, which contains the transmission system, underground storage and main intake points. | |
| 2.2 | Length of transmission system | km | 5278 | | | |
| 2.3 | Average distance of transmission | km | 180 | | What is the estimated average distance of consumers from the intake points? Example: about 250km | |
| 2.4 | Number of gas delivery stations/exit points | pieces | 395 | | Number of gas delivery stations, which supply the medium or low pressure distribution systems? | |
| 2.5 | Number of compressor stations, and built in power | pieces, MW | 5 stations, 140MW | | Example 5 compressor station, 110 MW | |
| 2.6 | What is the usual number of compressor units | pieces | 3-4 | | Example 3 (2 operating and 1 standby) | |
| 2.7 | Typical pressure range along the pipeline system | barg | 30-60 | | Example: 40-63 barg | |
| 2.8 | Typical outlet pressure | barg | 6, 8 or 20 barg and some cases pipeline pressure 20..50 barg | | What is the typical outlet pressure of gas delivery station? Example: 6, 8 or 20 barg and some cases pipeline pressure 20..50 barg | |
| 2.9 | What are the main technological functions of gas delivery station? | | Filtration, gas heating, pressure control, flow measurement for gas accounting, odorization. No upper flow limit control. | | Example: filtration, gas heating, pressure control or flow control, flow measurement for clearing or gas accounting, odorization. If is there flow control or upper flow limit control is characteristic please indicate. | |
| 2.10 | Number of domestic production supply points | pieces | 11 | | | |
| 2.11 | Number of storage supply points | pieces | 5 | There are only combined type UGS facilities. | | |
| | Maximum mobile volume of UGS terminals (2.11) | Bm3 | 3.36 | | | |
| | Maximum daily withdrawal capacity of UGS terminals (2.11) | MMm3/day | 47.5 | | | |
| | Maximum injection capacity of peak storage terminals (2.11) | MMm3/day | 11-23 | | | |
| 2.12 | Number of basic seasonal underground storage terminals, which are continuously operated during the whole withdrawal period | pieces | - | | | |
| 2.13 | Number of peak storage terminals used for hourly, daily, weekly peak shaving | pieces | - | | | |
| 2.14 | Maximum mobile volume of basic seasonal underground storage terminals (2.12) | Bm3 | - | | | |
| 2.15 | Maximum mobile volume of peak storage terminals (2.13) | Bm3 | - | | | |
| 2.16 | Maximum daily capacity of basic seasonal underground storage terminals (2.12) | MMm3/day | - | | | |
| 2.17 | Maximum daily capacity of peak storage terminals (2.13) | MMm3/day | - | | | |
| 2.18 | Maximum injection capacity of basic seasonal underground storage terminals (2.12) | MMm3/day | - | | | |
| 2.19 | Maximum injection capacity of peak storage terminals (2.13) | MMm3/day | - | | | |
| 2.20 | Number of import supply points | pieces | 2 | | | |
| 2.21 | Number of LNG Terminals | pieces | - | | | |
| 2.22 | Maximum volume of LNG Terminals | Bm3 | - | | | |
| 2.23 | Maximum daily injection capacity of LNG terminal to transmission system | MMm3/day | - | | | |
| 2.24 | Number of injection points of LNG terminal to transmission sysytem | pieces | - | | | |
| 2.25 | Who is the operator of flow measurement system between producer and transporter? | | MOL Transmission Co. | | Example: transmission company | |
| 2.26 | Who is the operator of flow measurement system between storage and transporter? | | MOL Transmission Co. | | Example: transmission company | |
| 2.27 | Who is the operator of flow measurement system between distributor co and transporter? | | MOL Transmission Co. | | Example: transmission company | |
| 2.28 | In case of crossborder measuring station are there measuring station in both side and data of measurment are sent mutual between transmission companies? | | In a typical cross border point, there are measuring systems on both sides, but the “upstream” company is appointed for accounting measurement. Data are exchanged mutually | | Example: in a typical crossborder point, there are measuring system both side, but one is appointed for accounting measurement. Data are sent mutual. | |
| 2.29 | Who is responsible for gas quality parameters? | | Trading companies | | Example: producers or trading companies | |
| 2.30 | Where can be found chromatographs in the system? | | Entry points, some special pipeline nods and some special exit points | | Example: intake points, special nodes, some special outlet points | |
| 2.31 | What is the general odorization method in transmission system? Central or individual odorization? | | Both exist, but the transit pipelines are not odorized. | | Example:It is used mainly central odorization, but the transit pipelines are not odorized. | |
| 2.32 | Number of odorizing units? | pieces | 9 central odorizing station, 90 individual od.units | | | |
| 2.33 | What kind of SCADA softwares are used? | | Hungarian made special SCADA software based on OpenVMS and ORACLE 9i database | | Example: it is used a special software, which developed for the transmission company or general SCADA software program package. | |
| 2.34 | Is it approved for purpose of gas accounting, measuring data transmission through SCADA system? | | Data via SCADA system are accepted for daly gas accounting, accordinng our network code at the end of gas month on site meter reading are taken place. | | It is used the data through SCADA system for pre-invoicing, but the end-invoice is based on local reading of flow computer. | |
| 2.35 | Is it used a general database which ensures the background for different applications (contract management module, nomination, accounting module) | | Yes, We apply gas management system to receive and confirm daly nominations, to arrange the allocation procedure between shippers. | | Example: we apply Oracle database and Internet Explorer (xml) viewer, with different modules:nomination and contract management module from one supplier. | |
| | Total gas consumption | Bcm | Billion cubic meter (15C, 101325Pa) | | Billion cubicmeter ( reference temperature for example 15 C) | |
| | | MMcm | Million cubic meter (15C, 101325Pa) | | Million cubicmeter ( reference temperature for example 15 C) | |
| | | Gas year | 01.07.2006.- 30.06.2007. | | Begins: 01.July, Ends: 30.June | |
| | | Gas day | from 6:00 to 6:00 | | Begins: 06:00 hour, Ends: next day 06:00 | |
| 3.0 | **Transmission task:** | | | | These questions refer to the gas supply, gas transmission data. | |
| | | | | | Last year (fact) data | |
| 3.1 | Gas consumption | Bcm/y | 13.8 | | | |
| 3.2 | Domestic production | Bcm/y | 2.8 | | | |
| 3.3 | Import | Bcm/y | 11.4 | | | |
| 3.4 | Supplied from Undergrond storage (UGS) | Bcm/y | 2.7 | | | |
| 3-5 | Supplied from LNG Terminals | Bcm/y | - | | | |
| 3.6 | Date and time of peak day | | 09.02.2005 | | Example:09.02.2005. | |
| 3.7 | Daily average temperature on peak day | | -15.0 | | Example: Tdaily_average= -15,0 C | |
| 3.8 | Peak consumption | MMcm/d | 89.4 | | What was the consumtion on the peak day ? | |
| | Supply data | | | | Used supply max. | Forecasted/Target supply max. |
| 3.9 | Domestic production | MMcm/d | 11.2 | | | |
| 3.10 | Import | MMcm/d | 37.4 | | | |
| 3.11 | Local UGS | MMcm/d | 40.8 | | | |
| 3.12 | UGS Service imported | MMcm/d | 0 | | | |
| 3.13 | LNG | MMcm/d | 0 | | | |
| 3.12 | Peak consumption | MMcm/h | 3.7 | | | |
| | Supply data | | | | Used supply max. | Forecasted/Target supply max. |
| 3.13 | Domestic production | MMcm/h | 0.47 | | | |
| 3.14 | Import | MMcm/h | 1.7 | | | |
| 3.15 | Local UGS | MMcm/h | 1.7 | | | |
| 3.16 | UGS Service imported | MMcm/h | 0.0 | | | |
| 3.17 | LNG | MMcm/h | 0 | | | |
| 3.18 | Profile of yearly transmission | Attachement 2 | attached diagram 1 ( daily gas volume for 356 days) | | It shows the seasonal characteristic of aggregate consumption. | |
| 3.19 | Peak day profile | Attachement 3 | attached diagram 2 ( hourly gas volume for 24 hours) | | It shows the daily characteristic of aggregate (all kind of consumers) consumption in peak day. | |
| 3.20 | Average peak usage hours (peak day Q/ peak hour q) | | 23.0 | | Index number, which shows the relation between the daily and hourly data in peak day. | |
| 3.21 | Average peak usage days (Q annual / peak day Q) | | 154.4 | | Index number, which shows the relation between the yearly and peak day data. | |
| 3.22 | Dependence from temperature | Attachement 4 | | | It is a diagram, it shows the daily consumtion temperature dependence. | |
| 3.23 | Heating limit temperature | C | +15 | | What is the daily average temperature above that a consumption will be independent from temperature. | |
| 3.24 | Effects of wrong temperature forecast | | 4 Mcm/d / celsius centigrade | | The meteorology forecasted the next day average temperature max. +/- 4 C mistake, this resulted max. +/- 8,0 Mcm/d supply surplus or shortness. | |
| 3.25 | What is the characteristic low heating value of gas? | MJ/cm | 34.0 | | Example: 34 MJ/cm | |
| | reference conditions/temperature | C | 15 | | | |
| | reference conditions/pressure | Pa | 101325 | | | |
| 4.0 | **Future transmission task** | | | | | |
| 4.1 | Supply obligation, target demand | | 17.3 bcm/y | | What is the maximum consumption, that trading co. and transmission co. have to be ensure without restriction? Example: Demand at -8 C or Estimated demand the coldest winter in the past 20 years. | |
| 4.2 | Target daily capacity | | 100 Mcm/d | | | |
| 4.3 | Who decides the target peak demand and when? | | TSO by involvement of all market participants, 3 months before next gas year the shippers have to submit demand and supply data for transmission system and storage system. | | Distribution co + Wholesaler+Transmission co.jointly, 3 months before the next gas year. | |
| 4.4 | What is the tipical time period for demand and supply forecast? | years | 1 year for contracting, and up to 10 years for system development. | | Every gas year the market participants have to forecast the demand and supply data in a certain future period. Example: for the following years next year (n), n+1, n+2, n+3, n+4, n+9, n+14 for every intake and outlet points. | |
| 4.5 | What is the tipical forecasted data? | | see explanation | | Yearly, peak day, peak hour consumtion, Summer average peak day, mimimum consumption, outlet pressure demand. | |
| 5.0 | **Nomination for the gas day** | | | | | |
| | Gas day | | | | | |
| 5.0 | Rules of outlet (demand) and intake (supply) nomination | | It must be given nominations for every entry and exit points until 12:00 AM before gasday | | Daily nomination for every intake and outlet points before the gas day untill 11:00. | |
| 5.1 | Confirmation message | | Until 16:00 PM | | Before the gas day untill 16:00 | |
| 5.2 | Renomination before gasday | | Untill 4:00 AM | | | |
| 5.3 | Confimation of renominated gasvolume | | Untill 6:00 AM | | | |
| 5.2 | Renomination on gasday | | Only request of TSO | | | |
| 5.3 | Source of the next gas day predicted average daily temperature | | Hungarian Meteorology Institute | | Example: National Meteorology Institute. | |
| 5.4 | Software forecast demand | | Forecasted data originated from eligible customer and traders. | | Which market participant uses forecast software? ( estimate the next day consumption with help the expected temperature and historical consumption data) | |
| 5.5 | Software for the nomination | | Yes, It is operated by TSO. Customers need only a WEB browser, with personal security ID card. | | What kind of software used for receiving and confirmation of nominations? | |
| 5.6 | Nomination in WEB | | Yes. | | Possibility of nomination through WEB pages | |
| 5.7 | Usage of Hydraulic symulation to check whether it can be fulfill the nominated transmission task or not. | | Yes we use the SIMONE software package, and on the gas day we apply online simulation to follow the transmission task. | | Example: Before confirmation of nominations we do transient hydraulic simulation of 24 hours of the next gas day with help of historic daily profile. | |
| 5.8 | Renomination on gas day | | Only request of TSO | | | |
| 6.0 | **Balancing features and measures:** | | | | What kind of balancing measures to be taken harmonizing demand and supply | |
| 6.1 | Balancing period | | Daily | | Daily: Consumption and supply must be equal in a gas day. | |
| 6.2 | Capacity booking | | cm/day for public service obligation, and cm/h eligible customer for every exit points | | It has to be bought peak day capacity from the transmission co. for inlet and outlet points before the gas year. This is the firm capacity, which is not interruptible. | |
| 6.3 | Domestic production flexibility | MMcm/h/h | +/- 0,05 | | What is maximum changing rate of domestic production? Example: 0,1Mcm/h increase or decrease hourly. | |
| 6.4 | Import flexibility accordind to daily nomination | % | +/- 5 | | What is maximum flexibility in case of import? Example: +/- 5% compare to the nominated quantity. | |
| 6.5 | Storage flexibility | MMcm/h/h | +/- 0,15 | 1 | What is maximum changing rate of in case of main storage facility? Example:0,3Mcm/h increase or decrease hourly. | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6.6 | Interruptible consumers (power stations, industrial customers) | MMcm/d | na. (the rights of interruption in hands of shippers) | | What are the aggregate direct interruptible consumtion connected to the transportation system? Example: 6 MMcm/d. | |
| | | | | | | |
| 6.7 | Interruptible shipper on transmission system | MMcm/d | 5,5 (the rights of interruption in hands of TSO) | | | |
| | | | | | | |
| 6.8 | Distribution Companies total storage capacity | MMcm/d | 0 | | If there is any? | |
| 6.9 | Distribution Companies total interruptible consumers | MMcm/d | about 3,0 | | What are the aggregate interruptible consumtion connected to the distribution system? Example: 1,0 MMcm/d. | |
| | | | | | | |
| 6.10 | Capacity/flow restriction | | Only few special cases | | There are only in case of a few gas delivery station, which equipped with flow controll system. | |
| 6.11 | Temporary capacity restriction | | According to preliminary order approved by Energy Office. It is applicable in case of permanent shortage of supply. | | The wholesaler in agreement with transmisson system operator should order temporary capacity restriction towards the consumers in case of supply shortage. The schedule is approved by Energy Office before the gas year. | |
| | | | | | | |
| 6.12 | Normal linepack | Mcm | 48 | | Linepack of transmission system in normal operating condition. Example: 48Mcm. | |
| 6.13 | Linepack flexibility | Mcm | +/- 3 | | Deviation +/- from the normal condition. Example: +/- 3 Mcm. | |
| | | | | | | |
| | | | | | | |
| 7.0 | **What happens if the shippers use the transmission network not according to the contracts?** | | | | | |
| | | | | | | |
| 7.1 | Monitoring capacity overrun at gas delivery station | | Yes, hourly and daily gas volume metered at the gas delivery station, information stored by local flowcomputer until 50 days, the SCADA system reads the data regularly in serial communication line and stored also in the SCADA central computer. | | Yes, through the SCADA system. It is carried out by transmission system operator. It is measured by flow computer. It is stored by flow computer in a limited time period. It is archiving by SCADA. | |
| 7.2 | Monitoring capacity overrun behind the gas delivery station in case of eligible customer. | | The connecting system operator ( distributing co) gives the data related to the eligible customers for the TSO. | | | |
| 7.3 | Capacity ovverrun penalty | | Yes, the system users have to be pay penalty in case of capacity overrun bigger, than 1%. In every month has to be defined the biggest ovverrun. The penalty = 1,5 x yearly capacity fee | | | |
| 7.4 | Yearly Entry capacity fee in case of cm/day | HUF/cm/d/year | 319.2 | | | |
| 7.4.1 | Yearly Exit capacity fee in case of cm/day | HUF/cm/d/year | 97.43 | | | |
| 7.5 | Yearly Entry capacity fee in case of cm/hour | HUF/cm/h/year | 7,518 | | | |
| 7.5.1 | Yearly Exit capacity fee in case of cm/hour | HUF/cm/h/year | 2,291 | | | |
| | | | | | | |
| 7.6 | Volume fee | HUF/cm | 0.865 | | | |
| | | | | | | |
| 8.0 | **Special features of balancing** | | | | | |
| 8.1 | Balancing gas of a shipper | MJ | The difference between supplied gas and taken off (used) gas. The TSO registers every day this difference/this imbalance and summarizes them end of the gas months. TSO buys from the shipper this balancing gas if the shipper has plus gas in | | | |
| | | | | | | |
| 8.2 | Option gas | | A shipper could offer for the TSO an extra balancing gas volume at any entry points. TSO is able to use this gas in case of imbalance situation. | | | |
| 8.3 | Balancing cost | HUF/cm | 1.92 | | Describe your | |
| 8.4 | In case of shipper offered option gas | | **Rules: suspensed** (No extra balancing fee if : IΣQconsumption – ΣQsupplyI less, than ΣQoption and less,than ΣQsupply * 8%) | | | |
| 8.5 | In case of shipper offered option gas, but he caused bigger imbalance | | **Rules: suspensed** (0,1 HUF/MJ if : IΣQconsumption – ΣQsupplyI bigger, than ΣQoption or bigger,than ΣQsupply * 8%) | | | |
| | | | | | | |
| 8.6 | In case of shipper not offered option gas | | **Rules: suspensed** (No extra balancing fee if : IΣQconsumption – ΣQsupplyI less, than ΣQsupply * 2%) | | | |
| 8.7 | In case of shipper not offered option gas, but he caused bigger imbalance | | **Rules: suspensed** (0,1 HUF/MJ if : IΣQconsumption – ΣQsupplyI bigger, than ΣQsupply * 2%) | | | |
| | | | | | | |
| 8.8 | Extra flexibility service | | Not available | | If, any please describe | |