IMPROVEMENT OF THE GTS CODE: DAILY BALANCING IMPLEMENTATION

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PJSC UKRTANSGAZ

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1. REGULATORY FRAMEWORK

- Gas Law aligned with the 3rd Energy Package: DONE
- Creation of the entry/exit system and VTP: DONE
- Introduction of GTS Code (CAM, CMP codes): DONE
- Adoption of Independent Regulator Law: DONE
- Daily balancing (BAL Code): IN PROGRESS
- Improved interconnectivity:
  - New interconnection points for gas flow to Ukraine (PL, SK, HU): DONE
  - Implementation of INT Code at the existing points (PL, SK, HU, RO): BLOCKED BY GAZPROM
  - Unbundling of the TSO: IN PROGRESS
2. MAIN PRINCIPLES OF DAILY BALANCING

- Balancing zone: single zone for Ukraine that comprises national GTS and all DSO systems
- Balancing period: gas day as provided by NC BAL
- The Network User is a holder of the balancing portfolio and is the ‘balance responsible party’ (holds responsibilities towards UTG for any imbalance of the balancing portfolio)
- Any input into and any off-take from the balancing zone needs to be allocated into a ‘balancing portfolio’
- Daily balancing with full cash-out and application of tolerances for penalties
- No within-day obligations
- No mandatory balanced nominations and self-balancing after the end of the day
- No end-consumer nominations but Supply register
- Information provision model: base case
- DSOs as forecasting parties
### 3. BALANCING PORTFOLIO

<table>
<thead>
<tr>
<th>Input</th>
<th>Off-take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input at VTP</td>
<td>Off-take at VTP</td>
</tr>
<tr>
<td>Input at IP</td>
<td>Off-take at IP</td>
</tr>
<tr>
<td>Input at storage</td>
<td>Off-take at storage</td>
</tr>
<tr>
<td>Input from production</td>
<td>—</td>
</tr>
</tbody>
</table>

Balancing Portfolio Imbalance = Inputs – Off-takes
4. NOMINATION, RENOMINATION, ALLOCATION: TIME FRAMES

Renomination
- renomination cycle every hour within the re-nomination period

Confirmed quantity
- within two hours from the start of each re-nomination cycle

Nomination

1. Update of forecast of NDM off-takes
2. IDM measured flows

Initial allocation for IDM, DM and NDM off-takes

Confirmed quantity
- within two hours from the start of each re-nomination cycle

Final allocation
- Final imbalance charge: D+9 M+1
- Invoicing (imbalance charge): D+14 M+1
- Financial settlement: D+20 M+1
- Invoicing (neutrality charge): D+23 M+1
- Financial settlement: D+30 M+1
SUPPLY REGISTER is the centralized information exchange system that contains data of effective Points of Delivery (all end-consumers EIC’s) and provides to Network User metering point information, profiles and forecasts.

Functions:
• metering data collection and reporting;
• profiling;
• forecasting;
• support of supplier switching;
• determination of the non-supplied end-consumer to be disconnected.

Main aim – to provide transparent data access to Network User.

SUPPLY REGISTER speeds up, simplifies and clears complex market processes like supplier switching or preparing settlement.

No end-consumer nominations but aggregated nomination for exit points to gas distribution systems.
6. INFORMATION PROVISION MODEL

- **DSO**
  - **D-1**: Forecast of NDM off-takes
  - **D**: Update of forecast of NDM off-takes, IDM measured flows
  - **D+1**: Initial allocation for NDM off-takes, Initial allocation for IDM and DM
  - **M+x**: Final allocation for NDM off-takes, Final allocation for IDM and DM

- **TSO**
  - Forecast of required inputs to cover off-takes on D
  - Forwarding
  - Calculation of initial imbalance and daily cash-out
  - Calculation of final imbalance and invoicing

- **Network user**
  - Forecast of required inputs to cover off-takes on D
  - Forwarding
  - Financial planning and securities
  - Financial settlement
## 7. ALLOCATIONS TO BALANCING PORTFOLIO

### D-1/D

<table>
<thead>
<tr>
<th>Balancing Portfolio</th>
<th>Input</th>
<th>Off-take</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTP</td>
<td>Notifications D</td>
<td>Notifications D</td>
</tr>
<tr>
<td>IP</td>
<td>(Re) Nominations D</td>
<td>(Re) Nominations D</td>
</tr>
<tr>
<td>Stor.</td>
<td>(Re) Nominations D</td>
<td>(Re) Nominations D</td>
</tr>
<tr>
<td>Prod.</td>
<td>(Re) Nominations D</td>
<td>—</td>
</tr>
<tr>
<td>IDM</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>NDM</td>
<td>—</td>
<td>Forecast</td>
</tr>
</tbody>
</table>

### D+1

<table>
<thead>
<tr>
<th>Balancing Portfolio</th>
<th>Input</th>
<th>Off-take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirmed quantity D</td>
<td>Confirmed quantity D</td>
<td></td>
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<tr>
<td>Confirmed quantity D</td>
<td>Confirmed quantity D</td>
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<td>Confirmed quantity D</td>
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</tr>
<tr>
<td>Initial allocation D</td>
<td>Initial allocation D</td>
<td></td>
</tr>
</tbody>
</table>

### M+x

<table>
<thead>
<tr>
<th>Balancing Portfolio</th>
<th>Input</th>
<th>Off-take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirmed quantity D</td>
<td>Confirmed quantity D</td>
<td></td>
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<tr>
<td>Confirmed quantity D</td>
<td>Confirmed quantity D</td>
<td></td>
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<tr>
<td>Confirmed quantity D</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>—</td>
<td>Final allocation D</td>
<td></td>
</tr>
</tbody>
</table>

Remark: for simplicity trade notifications are also referred to as (re-)nominations
8. IMBALANCE QUANTITY, IMBALANCE CHARGE, APPLICABLE PRICE

Daily Imbalance Quantity

Daily Imbalance Quantity shall be calculated as the difference between its Inputs to and Offtakes for each Gas Day:
• Inputs = Entry Allocations + VTP Buy Allocations
• Offtakes = Exit Allocations + VTP Sell Allocations

Daily Imbalance Charge

Daily Imbalance Charge shall be calculated by the TSO for each Network User for each Gas Day:
• Daily Imbalance Charge = Negative Daily Imbalance Quantity x Marginal Buy Price, or
• Daily Imbalance Charge = Positive Daily Imbalance Quantity x Marginal Sell Price.

Marginal Buy Price and a Marginal Sell Price

Marginal Sell Price is calculated as the lower of:
• the lowest price of any gas balancing trade to which the TSO is a party in respect of a balancing period, or
• the weighted average price of gas traded in respect of that day, minus Small Adjustment.

Marginal Buy Price is calculated as the higher of:
• the highest price of any gas balancing trade to which the TSO is a party in respect of a balancing period, or
• the weighted average price of gas traded in respect of that day, plus Small Adjustment.

Small Adjustment shall be equal to 10% for determination of applicable Marginal Sell Price or Marginal Buy Price.

Tolerance Limit is calculated for each Gas Day and equals 5% of Offtakes.

Daily Imbalance Charge shall not include Small Adjustment if Daily Imbalance Quantity does not exceed Tolerance Limit.
9. DAILY BALANCING REGIME WITHIN THE PSO’ FRAMEWORK

1. PSO supplier’s nomination
2. Consumer’s consumption report
3. DSO transfers consumption data to TSO
4. Allocation
5. PSO supplier imbalance report (in case of supplying gas to PSO consumers with different fixed prices)
6. TSO request to the PSO balance responsible party to sell/buy gas at the fixed price
7. PSO balance responsible party to sell/buy gas to/from TSO
8. Invoicing for gas and for the daily imbalance charge within PSO framework
9. Payment for gas within the PSO framework
10. Payment for the daily imbalance charge within the PSO framework
## 10. NEUTRALITY MECHANISM

<table>
<thead>
<tr>
<th>Cash inflow</th>
<th>Cash outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selling of gas on balancing platform</strong></td>
<td><strong>Purchase of gas on balancing platform</strong></td>
</tr>
<tr>
<td><strong>Selling of imbalance quantities beyond tolerance</strong></td>
<td><strong>Purchase of imbalance quantities beyond tolerance</strong></td>
</tr>
<tr>
<td><strong>Selling of imbalance quantities within tolerance</strong></td>
<td><strong>Purchase of imbalance quantities within tolerance</strong></td>
</tr>
<tr>
<td><strong>Interest gains</strong></td>
<td><strong>Interest payments</strong></td>
</tr>
<tr>
<td><strong>Neutrality charge</strong></td>
<td><strong>Other costs of balancing</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Liquidity reserve</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neutrality account balance</th>
<th><strong>Commodity prices of gas bought/sold on balancing platform</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Settlement of quantities which exceed tolerance level based on marginal</strong></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Settlement of quantities within tolerance level with ‘neutral gas price’</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Interest paid/received for account balance</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Transaction fees, financing costs, compensation of payment defaults and income neutrality charge</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Cash reserve to compensate for plan-actual deviations, payment delays, etc. and to ensure sufficient account balance</strong></td>
</tr>
</tbody>
</table>
Thank you for your attention!

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1. INFORMATION PROVISION MODEL
   1.1. DAILY BALANCING CYCLE: M-x
   1.2. DAILY BALANCING CYCLE: D-1
   1.3. DAILY BALANCING CYCLE: D
   1.4. DAILY BALANCING CYCLE: D+1
   1.5. DAILY BALANCING CYCLE: M+x

2. SUPPLIER SWITCHING PROCESS
1.1. DAILY BALANCING CYCLE: M-x

1. Register of EICs
2. Check suppliers registration and supplies switching (if applicable)
3. Registration of supplied EICs
4. Register of supplied EICs
5. Disconnection of non-supplied EICs (direct consumers)

Network user

TSO
- GTS operator
- Balancing entity / Supplier register
- VTP operator

DSO
- Forecasting party
- Distribution system operator

SSO

PSO

Consumer

Disconnected non-supplied EICs
1.2. DAILY BALANCING CYCLE: D-1

- **Network user**: Forecasting of necessary input to balance portfolio
  - Entry/exit nomination
  - Forecast for NDM off-takes
- **TSO**:
  - GTS operator
  - Balancing entity / Supplier register
- **VTP operator**
- **SSO**
- **PSO**
- **DSO**:
  - Forecasts for NDM off-takes
  - Distribution system operator
- **Matching**
- **Confirmed quantity**

1.3. DAILY BALANCING CYCLE: D

- Network user
  - Update of forecast of necessary input to balance portfolio
  - Confirmed quantity
  - Entry/exit renomination

- TSO
  - GTS operator
  - Balancing entity / Supplier register
  - VTP operator

- SSO

- PSO

- DSO
  - Forecasting party
  - Distribution system operator
  - Information on IDM off-takes
  - Forecasts update for NDM off-takes

- Entry/exit renomination
- Matching
1.4. DAILY BALANCING CYCLE: D+1

- **Network user**
  - Calculation of initial imbalance quantity and imbalance charges for D

- **TSO**
  - Initial allocations, initial imbalance quantity and imbalance charges for D
  - Allocations of confirmed quantities and Initial allocations of IDM/DM off-takes

- **GTS operator**

- **Balancing entity / Supplier register**
  - Allocations of confirmed trade notifications

- **VTP operator**
  - Initial allocations of NDM off-takes

- **DSO**
  - Forecasting party
  - Distribution system operator
  - Initial allocations of IDM/DM off-takes

- **SSO**

- **PSO**
1.5. DAILY BALANCING CYCLE: M+x

Network user

Calculation of final imbalance quantity and imbalance charges for each D of M

Final allocations, final imbalance quantity and imbalance charges for each D of M

TSO

Final allocations of IDM/DM off-takes

GTS operator

VTP operator

Balancing entity / Supplier register

Final allocations of NDM off-takes

SSO

PSO

DSO

Forecasting party

Distribution system operator

Final allocations of IDM/DM off-takes
2. SUPPLIER SWITCHING PROCESS

- Regulator
- Old Supplier
- Consumer
- New Supplier
- TSO
- DSO

- Information on change of supplier
- 1) confirmation of change of supplier
- 2) rejection of change of supplier
- Meter value on date of switch
- Refusal from customer: 1) with disconnection; 2) without disconnection
- Disconnection
- Meter value on date of switch
- Signs contract with new supplier
- Information on change of supplier
- Confirmation of registration
- Rejection of registration
- Appeal
- Execution of decision
- Refusal from customer
- Register of non-supplied EICs
- Order to disconnect
- Receives meter value on date of switch
- Meter value on date of switch
- 1) confirmation of registration
- 2) rejection of registration
- Meter value on date of switch
- Meter value on date of switch
- Meter value on date of switch
- Meter value on date of switch