The Brattle Group

Market Analysis

Secondary and short term natural gas markets in Colombia – Proposed Reform

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Presented by:

David Robinson
Senior Advisor
The Brattle Group

Contents

Scope of work stream: Secondary and short term natural gas markets

- *Market Analysis* and *The Brattle Group* commissioned to advise on design and implementation of short-term and secondary markets for trading of gas and gas transport capacity in Colombia.
- First report introduced the relevant analytical framework and international experience.
- Second report described different options for developing secondary and short term market for gas and transport capacity in Colombia. It did not select a preferred alternative.
- Our latest report and this presentation focus on the reform proposal chosen by CREG, going into more detail about the main features.
- Our last report (later this year) will provide final recommendations, including details on the institutional organization required for the operation of the new markets.

Background (1): Alternatives considered

- Our Task 4 report described several approaches to developing more transparent and liquid short-term and secondary markets for gas and transport capacity.

- Presented as a number of 'nested' reform options, or policy packages, involving increasing degrees of regulatory intervention, organization and changes to the status quo.

  Option 1: *Gradual Market Evolution.*
  Option 2: *OTC Trading and Development of Trading Points*
  Option 3: *A Gas Exchange*
  Option 4: *A Single Trading Point or Physical "Hub"*
  Option 5: *Entry-Exit Charges and a Virtual Trading Point*

- 'Nested' means that the options could be adopted progressively over time.

Background (2): Nested Alternatives

Option 1: Contract standardization; MO established, post-trade transparency; facilitate transport trading

Option 2: OTC trading platform; limited delivery points; capacity trading platform; market maker

Option 3: Reduced counter party risk through exchange trading;

Option 4a: Single delivery point, backhaul product.

Option 4b: No delivery point specified ex ante; average transport costs calculated ex post.

Option 5: Entry-exit system; virtual trading point.

Increasing Liquidity

Increasing Cost

Background (3): Industry comments

General support for the following – addressed in the proposed model:

1. Options 1-2 as a first phase of the reform process, with other phases of reform later.
2. Creation of Market Operator with roles related to information and creation/management of OTC platform.
3. Creation of "market maker" to provide liquidity.
4. Voluntary participation of most agents in the secondary market.
5. Control of market power: limits on gas producers participating in the secondary market
6. Avoid situations where it is possible to buy gas, but not transport, or vice versa.

Other issues – still open questions

1. Concerns about transport restrictions and whether the model would resolve them.
2. Gencos insist on the importance of coordinating despatch of gas and power.
3. Some suggest that MO should take over the nomination role for gas and transport and that MO should help detect abuse by producers and transporters.
4. Some requests for more clarity about how the proposed model will fit into existing legislation.

Proposed Model: Key Features

Following our last report, the CREG requested us to develop the details for Option 2, which includes Option 1. It has the following features

- **Standardized set of contracts for OTC trading of gas and transport**:
  - within-day, daily, weekly, monthly etc.
  - Contract delivery points partially standardized.

- **Create a Market Operator**
  - to collect and publish aggregate data on volumes and prices of all secondary market trades in gas and transport.
  - to establish and manage electronic trading (OTC) platforms created where traders can make bids and offers for standardized gas contracts and transport capacity.

- **Create Market Maker to stimulate liquidity by creating a "market maker" (MM)**

- **Rules to free up unused gas or transport capacity**

Key Features (1): Standardization of contracts

Gas supply and transport contracts will be standardized to make OTC trading more practical and allow fast, low-cost bilateral trades to take place.

- Standardized products:
  - a within-day gas product,
  - daily, weekly and monthly products
  - longer-term contracts (quarterly or yearly)
  - to be specified following consultation with industry, with preference for more products, even if they are not initially in demand:

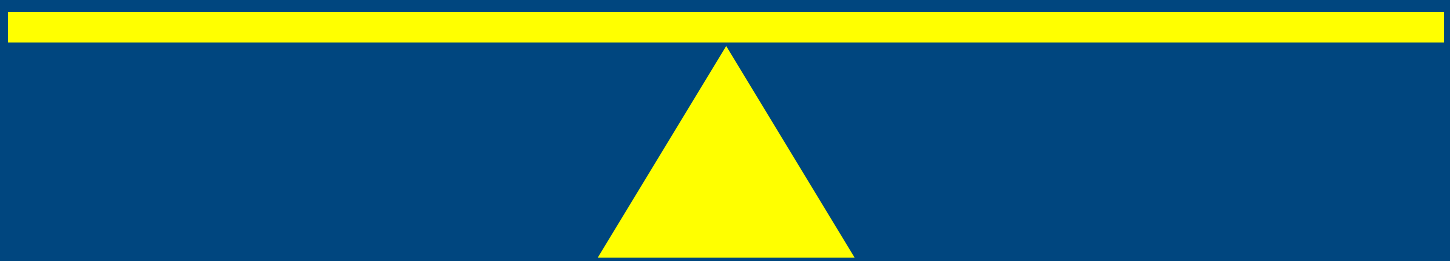
- Standardized contract types:
  - Firm, Interruptible and Conditional Firm contracts for physical delivery of the gas. Details will be determined by the results of the companion study on standardizing contracts by Auctionomics and FTI Consulting.
  - financial contracts are not practical in the early stages of the market because they require an underlying liquid physical market against which they can be valued

- Traders in secondary markets should hold gas or transport contracts to cover their positions.

Key Features (2): Standardised delivery points

Few enough trading points so as to concentrate liquidity

Enough trading points so that most traders can access at least one of them



- Based on conversations with market participants, delivery points at Ballena (E&W), Cusiana, La Creciente, Vasconia would likely best balance the objectives above.

Key Features (3): The Market Operator collects and publishes all secondary market data

- *All traders will be required to report to the MO* on a daily basis details of secondary market transactions, including:
  - ♦ Volume of each trade
  - ♦ Product traded
  - ♦ Price for the trade
  - ♦ Delivery point for the trade
  - ♦ Counter-party for the trade

- *What the MO will publish.* MO will publish aggregate data on the volumes and prices for each type of standarized contract (gas and transport), but not identify individual transactions.

- *Timely publication of information.* We recommend that the MO publish information related to at least the previous gas day and preferably the same gas day.

- *Procedure to verify the reported information*. Our initial proposal on this is to require market participants to send copies of their contracts to the MO on a daily basis.

Key Features (3.1): The Market Operator collects and publishes all secondary market data

Here is an example of time line for reporting to the MO and for publishing results:

- Assuming gas day starts at 00:00
- Traders would report all trades for the gas day by 08:00 the following day and the MO would publish results by 09:00.
- To facilitate this, the trades should be reported electronically in a format that facilitates aggregation.

Specifically, the MO would publish the following information

- Aggregate volume traded for each product at each delivery point
- The average price of each product
- For instance, MO could report that 100 GBTUDs of firm day-ahead gas was sold at Ballena at an average price of US$10/MBTU.
- We see no objection to publishing some other information, e.g. minimum and maximum prices and number of trades.

We recommend a minimum reporting threshold, below which market participants do not need to report trades.

Key Features (4): The MO creates and operates the OTC trading platform

MO will create and operate electronic trading platforms for gas and transport OTC products to facilitate trading. This is the OTC trading platform and will be on the MO's website.

- It will allow traders to make continuous bids and offers for standardized gas products
- Traders can see the identity of the party offering to sell or bidding to buy gas
- Traders can see the volumes, delivery points, duration and the price bid or offered
- Secondary transport capacity will be sold on the same or a complementary bulletin board and traders will see the same sort of information as for gas trades
- TSOs should post information on unsold capacity on the MO's platform and offers to sell it at regulated prices. Otherwise, the TSO's continue to provide the same information as now on their BOE.

Traders will need to register with the MO for an account to access the platform.

- The process should be free and as simple as possible
- The applicants should prove that they are authorized to represent their firm, which has a registered office, is required to pay taxes, etc.

The MO should be responsible for ensuring that all market trades are backed by primary or secondary contracts.

Key Features (5): The Role the Market Maker (MM)

- We recommend that liquidity be stimulated by mandating a major market player (like Ecopetrol) to act as a “market maker” (MM) and/or by mandating the sale of specific volumes of gas, e.g. ‘royalty' gas, on the OTC platform
- MM would be obliged to offer to sell a minimum volume of gas at an advertised price while simultaneously bidding to buy gas at a lower price
- MM's bid-ask spread could be capped to provide incentives to “bracket” the “real” market price (i.e. to control market power).
- There are many precedents for the role of MM, in particular in GB and other EU gas and electricity markets.

Key Features (6): Establishing the Market Maker

Choosing the MM

- CREG or MO could select the MM or hold a tender for the role of MM
- If the latter, pre-qualified firms would submit offers to be a MM in one of more of the standard products. The offer would consist of the spread required, and awarded to the bidder with the lowest spread.

The bid-offer spread

- The spread would be set through regulation or through competitive tender.
- If through competition, the party offering the lowest spread would become the MM.
- In both cases, the CREG could set a maximum acceptable spread (i.e. reserve price).

Volumes

- CREG or MO should specify the volume of each product to be quoted, the minimum daily volumes to be bought/sold and the percentage of time these quotations must be made in the market.

Products covered

- MM role would probably be confined to specific products, for instance short-term standardized contracts.

Key Feature (7): Should use of the OTC trading platform be mandatory or voluntary?

- If trading on the OTC platform is mandatory, then Subastagas and other bilateral trading would not be permitted.
- The potential benefit of a mandatory market is liquidity and transparency.
- However, we favour voluntary market participation for four reasons:
  - The OTC trading platform should be attractive in its own right – no need to force people to use it.
  - A platform monopoly might stifle innovation and service quality improvements
  - A mandatory OTC platform will make it difficult to detect problems – people have to use it anyway.
  - International experience suggests that the main boost to liquidity comes from the standardization of contracts and delivery points. Bilateral trading outside the OTC platform should not harm liquidity.

Key Features (8): The role of producers in the secondary markets

- Some participants are concerned about producer participation in secondary gas markets
  - Might reduce sales in primary auctions
  - Might buy in secondary markets and raise prices in short term markets (which may influence prices in long term contracts)
- But producers have legitimate reasons to sell in secondary markets, for instance:
  - To replace lost production
  - To dispose of any production not sold under longer-term contracts
- We recommend that producers be limited to trading only on the OTC platform and only in shorter term products (e.g. contracts of less than three months). This provides greater transparency and should help to prevent any abuse.

Key Features (9): Use-it-or-lose-it

- Industry participants have expressed concerns over the availability of access to transport and the effect will have on trading in secondary markets and in auctions. One approach is to use Use it or Lose it (UIOLI) rules. We are consulting on the details.

- Short-term UIOLI
  - At end of the nomination period, the MO would hold a daily auction of un-nominated capacity.
  - Capacity holders would be free to sell unwanted capacity before the UIOLI mechanisms comes into effect, and absent market power they have good incentives to do so.
  - There could be an exception for power producers, who may need to change nominations within day.
  - An alternative to the auction mechanism is for the TSO's to offer interruptible contracts and then allocate un-nominated capacity to contract holders, who would pay the commodity charge.
  - For either of these approaches, since un-nominated gas is in effect 'lost' (100% Take or pay), it makes sense to also offer un-nominated gas via similar mechanisms.

- Long-term UIOLI
  - Main idea is that the holdings of transport capacity should match the gas volumes bought in the primary auctions.
  - Market players who bought less gas than they hold transport capacity contracts for should sell the excess transport capacity – if necessary via a UIOLI mechanism.

Questions (1): Balancing

- Our initial recommendation is that the arrangements for balancing continue as far as possible.
- However, if the MO takes over responsibility for the management of trade (including nominations), we understand that this may require some changes to the information flows required for balancing.

Questions (2): Additional roles for the MO

Managing Trade

- There is a case for the MO to manage trade over interconnected pipelines.
- Would it be desirable to have the MO manage all trading? Or is it better to let the TSO's continue managing trading points that lie on their pipelines?

Market Monitoring

- The MO might be made responsible for monitoring trading for signs of market abuse or manipulation. It might report any evidence or suspicion of abuse to the CREG and the relevant competition authorities, who would prosecute any offences with the MO providing technical input.
- The MO is the logical monitor since it would have access to all the contract information that is required to carry out this task.
- Is there another body that could carry out this task more effiicently?

Questions (3): Coordination of electricity and gas

- Generators have expressed the view that renominations for gas supply and transport need to be better coordinated with electricity renominations.

- This seems like a relevant issue, and we invite views on how best to resolve it.

Conclusions and next steps

- The proposed model was chosen because it offers good prospects to improve liquidity and facilitate secondary market trading in gas and transport in Colombia, quickly and at relatively low cost.
- We have identified the main features of the model, we welcome comments on the proposals.
- In our final report we will make recommendations on all the issues discussed in this presentation, and will also identify the institutional organization required to implement the recommendations.
- Our recommendations could be seen as a first step in the development of these secondary markets. We recommend that the CREG set up an industry group to consider more fundamental reforms, such as those described in Option 5 (Entry-Exit), over a longer time horizon.