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Guest column

Making Retail Gas Competition Work in Ontario:  
A Proposed Gas Independent System Operator

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With this week's release of the "10 Year Market Review" report, initiated by the Ontario Energy Board (OEB) and prepared by all major Ontario gas industry stakeholders, the province is poised for a broad discussion on the implementation of retail competition in gas. Enhancing the efficiency of Ontario's gas system will benefit consumers and, given natural gas's environmental advantages relative to most competing fuels, will improve air quality. The "10 Year Market Review" introduces Energy Probe's proposal for a gas Independent System Operator (ISO) while acknowledging that some stakeholders have concerns with the proposal. For retail competition and customer choice to be effective and efficient, a gas ISO will be required.

Energy Probe's proposal for a gas ISO in Ontario attempts to address and recommend solutions for some of the most challenging aspects of implementing retail competition in gas: how to maintain a high technical standard of gas control in a market environment; how to create rules and procedures to make custody and title transaction points function efficiently; how to facilitate load balancing and backstopping in ways that do not discriminate against non-diversified but otherwise efficient suppliers; and how to serve customers now on utility-owned "system gas".

This gas ISO proposal was inspired by the Independent System Operator concept widely accepted as vital to competition-oriented integrated electric power systems. The proposal for an Independent System Operator for Ontario's future electricity system was one of the central features of the Advisory Committee Report on Competition in Ontario's Electricity Sector, published in May 1996. As advocates of competition in electricity have generally recognized, for competition to be efficient and successful much more is required than simply terminating the utility "merchant function".

Integrated gas systems, like their electricity counterparts, operate on networks where the actions of each individual user almost immediately affect all other system users, necessitating some form of system management function. While the physics of maintaining gas networks within acceptable engineering parameters is less demanding than it is for electricity, a central gas system operator can provide many of the same benefits that it can in electricity.



Gas ISOs can facilitate retail competition in gas in Ontario by helping all parties meet their short-run commodity trading requirements while managing system constraints (e.g. storage bottlenecks and transmission congestion). The ISO should oversee injections and withdrawals, and should set operational priorities when the physical supply network is unconstrained, when ordinarily anticipated constrained conditions prevail (e.g. seasonal usage peaks), and when emergency conditions prevail. The ISO should also coordinate closely with operators of interconnected transmission and distribution systems.

Two weeks ago the government of the State of Victoria in Australia committed to developing a gas ISO in its ongoing industry restructuring. The Australian gas ISO concept, developed by Dr. Larry Ruff, was adopted by the state government following endorsement by industrial energy interests including cogenerators, gas producers, and gas marketers. Victoria's natural gas system is being comprehensively restructured to create an open, competitive system which includes retail access.

An open-access spot market would be the primary mechanism the ISO uses to achieve its reliability and efficiency objectives. Through the spot market parties could trade gas at particular points in Ontario, near-term transmission capacity rights into and within Ontario, and near-term downstream storage rights. Spot market pricing would guide the ISO's short run operational decisions. All transactions in this ISO-coordinated market should be voluntary. Monopoly mechanisms, such as performance requirements and penalties, may also be imposed on users by the ISO if market mechanisms do not meet reliability requirements. Most commercial outcomes of gas trading other than very short run trading will be determined by long-term contracts and risk-management instruments that should remain totally outside the control and function of the ISO.

Operational decisions made without spot market information could make load balancing and backstopping difficult for small, non-diversified market participants. For example, a small marketer might have a less diversified portfolio than a large marketer, and would therefore be less likely to have some deliveries ahead of schedule and some behind, creating special balancing problems for small players. If market participants were concerned that long-term contracts could not be reliably managed with short-term transactions in cases where true-ups of injections and withdrawals were required, the cost of long-term deals would rise unnecessarily. If storage and transmission constraints are managed without the system operator having access to ranked offers to adjust ongoing storage demands, efficiency will suffer and user costs will be unnecessarily high. Users will ultimately benefit if all traders, large and small, diversified and undiversified, have access to efficiently priced spot gas. The interests of small traders should not be advanced by cross-subsidies, but by fair rules and carefully designed institutions and processes that encourage efficiency.

More importantly, without a system operator using market mechanisms to incorporate the preferences and values of users, the development of retail access could become stalled at the wholesale level. Without a gas ISO, it appears likely that all but the largest users of gas will have to rely on large, diversified middlemen to manage their supplies, even when the user would



otherwise be content with spot market supplies.

A key reason to develop a gas ISO is to conserve, and to expand, existing diversity benefits of the local distribution companies (LDCs), and this can be done by ensuring both low transaction costs and high information availability for users interested in gas trading. The ISO can optimize trading, helping users meet load balancing or backstopping needs by inviting all users to post incremental injection and withdrawal prices and volumes, ranking the bids, clearing the market as frequently as required, notifying the affected parties as to the physical actions required, and sorting out the financial settlements. Without having access to an economic ranking of participants' willingness to supply and a ranking of the value users associate with demand, the operational actions of the gas system operator will be arbitrary and likely inefficient.

The availability of LDC-owned "system gas" in the current market provides (1) a no-effort supply source for customers, (2) a mechanism to deal with supply defaults by marketers, (3) a mechanism for dealing with customer failures to renew supply arrangements, (4) a supplier of last resort for customers, and (5) a load balancing buffer for the system. If LDCs no longer own gas for resale, the desirable efficiencies and customer service capabilities now provided by "system gas" must be replaced, ideally with an alternative that provides superior efficiency and customer service capabilities. System gas, now owned by the LDCs, could be replaced by landed spot gas. The LDC and the ISO could be responsible for providing accounting and other transactional services allowing gas traders and users of all sizes, including small customers such as homeowners, to utilize the spot market as they require.

Customers might use spot gas because they were either indifferent to price volatility, they had not yet contracted with a marketer (perhaps a new customer just attached to the distribution system), an existing contract had expired, or if they had overrun requirements.

Although not requiring extensive capital assets to perform its function, the gas ISO will have operational costs, which should be recovered from users. If the ISO bears costs to remedy system problems caused by user defaults, these costs should be recovered from those that default, and if this is not possible, all users of the system should reimburse the ISO.

Gas ISOs would be initially created by restructuring the relevant functions of the major LDCs, particularly their gas supply departments. In the beginning, it might be appropriate to have a separate gas ISO for each utility, although eventually the separate gas ISOs might merge (even merge with an electricity ISO). Ultimately, the gas ISO should become independent of all industry participants including the LDCs.

Since the ISO will play a key role in managing system constraints, it will influence the commercial outcomes for parties actively involved in gas storage and transmission. The independence of the ISO may become a significant concern for non-affiliated parties competing in these markets, if competition develops in storage and transmission with the LDCs or their affiliates participating in these markets.



Public interest justifies regulatory oversight of the ISO, to ensure fairness and efficiency. The gas ISO should be specifically mandated to facilitate a competitive market and should be responsible for demonstrating that its processes and actions effectively achieve this goal. The gas ISO should be publicly regulated and should operate under "goldfish bowl" transparency rules. Once the spot market is in place, neither the LDC or the ISO need to, or ought to, take commodity positions in the market.

In other jurisdictions where ISOs are in place or under development for electricity, the rules administered by the ISO are subject to direct stakeholder input. In Ontario, all affected stakeholders should have an opportunity to contribute to the development of the ISO's rules, procedures, and capabilities, and should have the right to directly observe the ISO's operations.

Under this proposal for an ISO, the OEB would guide a gentle transition away from system gas by directing the development of a spot market, observing that market's activity, and only removing system gas when the spot market demonstrates sufficient liquidity to support the needs of system gas customers.

The gas ISO is an evolutionary--not revolutionary--proposal. The concept builds on existing and maturing markets both upstream of Ontario in the supply basins (e.g. Empress) and within Ontario (e.g. Dawn and Parkway). The gas ISO is a natural progression from the traditional LDC gas control function which has historically managed load balancing and transmission congestion. Real-time physical operations of Ontario's gas network require such complex and rapid adjustments that it would be imprudent to assume without prior demonstration or evolution that laissez faire, decentralized markets will be able to handle these adjustments effectively or efficiently.