



# The Storage Market in Ontario: Issues, Challenges & Solutions

Conference Board of Canada  
April 3, 2008

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# Agenda

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- Corporate Introduction
- Storage Issues, Challenges & Solutions
  1. Changing Regulatory Environment in Ontario (Storage Forbearance)
  2. Changing Market Dynamics (New Challenges)
  3. How Union is meeting these Challenges
  4. Opportunities & Challenges for New Storage Development
- Summary

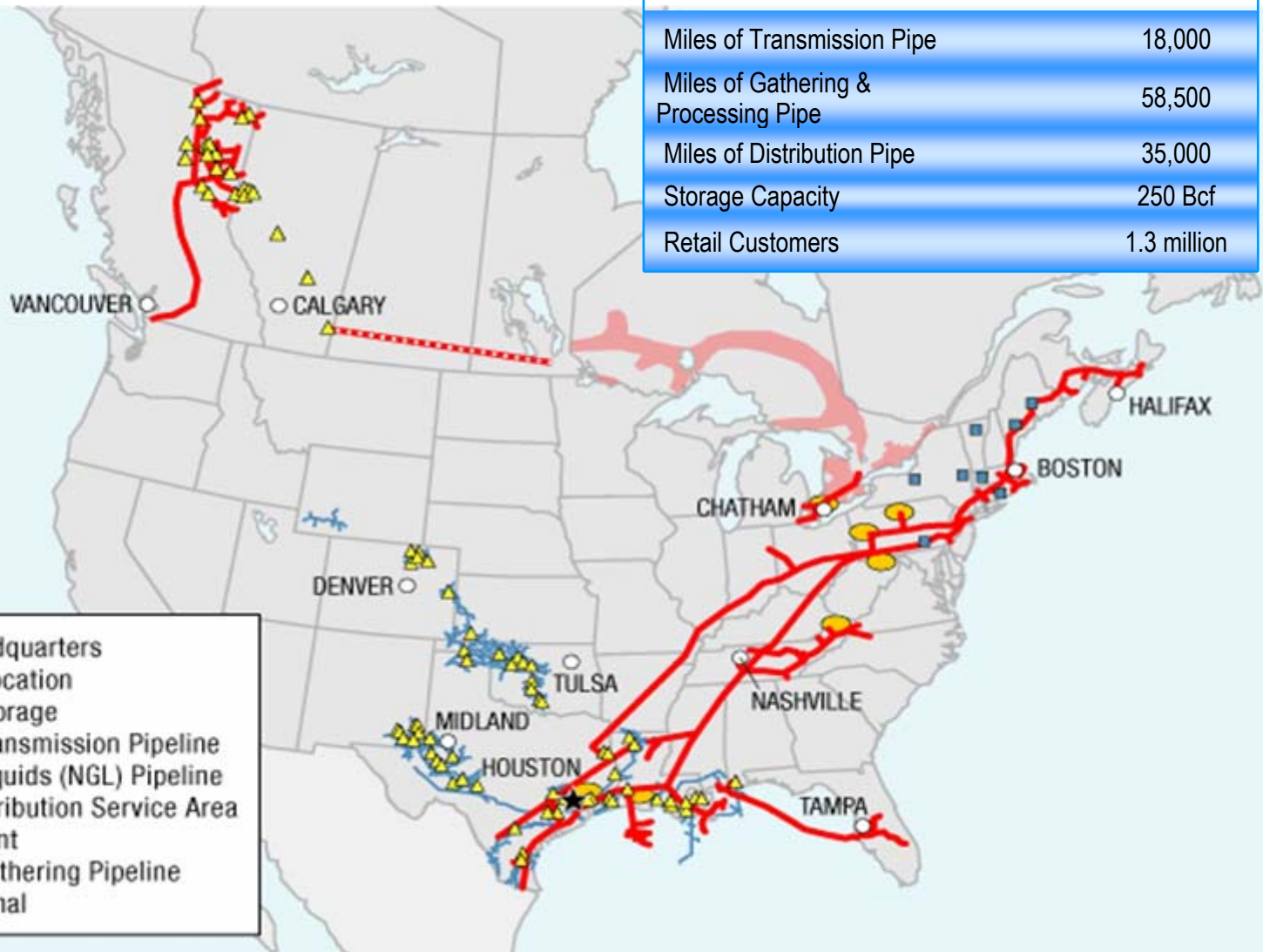
# Spectra Energy Gas Transmission System



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A Spectra Energy Company

Natural Gas Throughput	2.9 Tcf
Miles of Transmission Pipe	18,000
Miles of Gathering & Processing Pipe	58,500
Miles of Distribution Pipe	35,000
Storage Capacity	250 Bcf
Retail Customers	1.3 million



- ★ Corporate Headquarters
- Major Office Location
- Natural Gas Storage
- Natural Gas Transmission Pipeline
- - - Natural Gas Liquids (NGL) Pipeline
- Union Gas Distribution Service Area
- ▲ Processing Plant
- Natural Gas Gathering Pipeline
- Propane Terminal

# Corporate Introduction

## - Spectra Energy / Union Gas (2007)



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A Spectra Energy Company

	<u>Spectra Energy</u>	<u>Union Gas</u>
Assets	\$23.0 billion	\$4.6 billion
Revenue	\$4.7 billion	\$1.9 billion
EBIT	\$2.1 billion	\$322 million
Employees	8,340	2,200
Distribution Customers		1.3 million



# Union Gas Operations

**Transmission**  
 Capacity: ~6.4 Bcf/d  
 Annual Throughput: ~776 Bcf  
 Miles of Pipe: ~2,800

**Distribution**  
 Retail Customers: ~1.3 MM  
 Annual Throughput: ~497 Bcf  
 Miles of Distribution Pipe: ~22,000

**LEGEND**

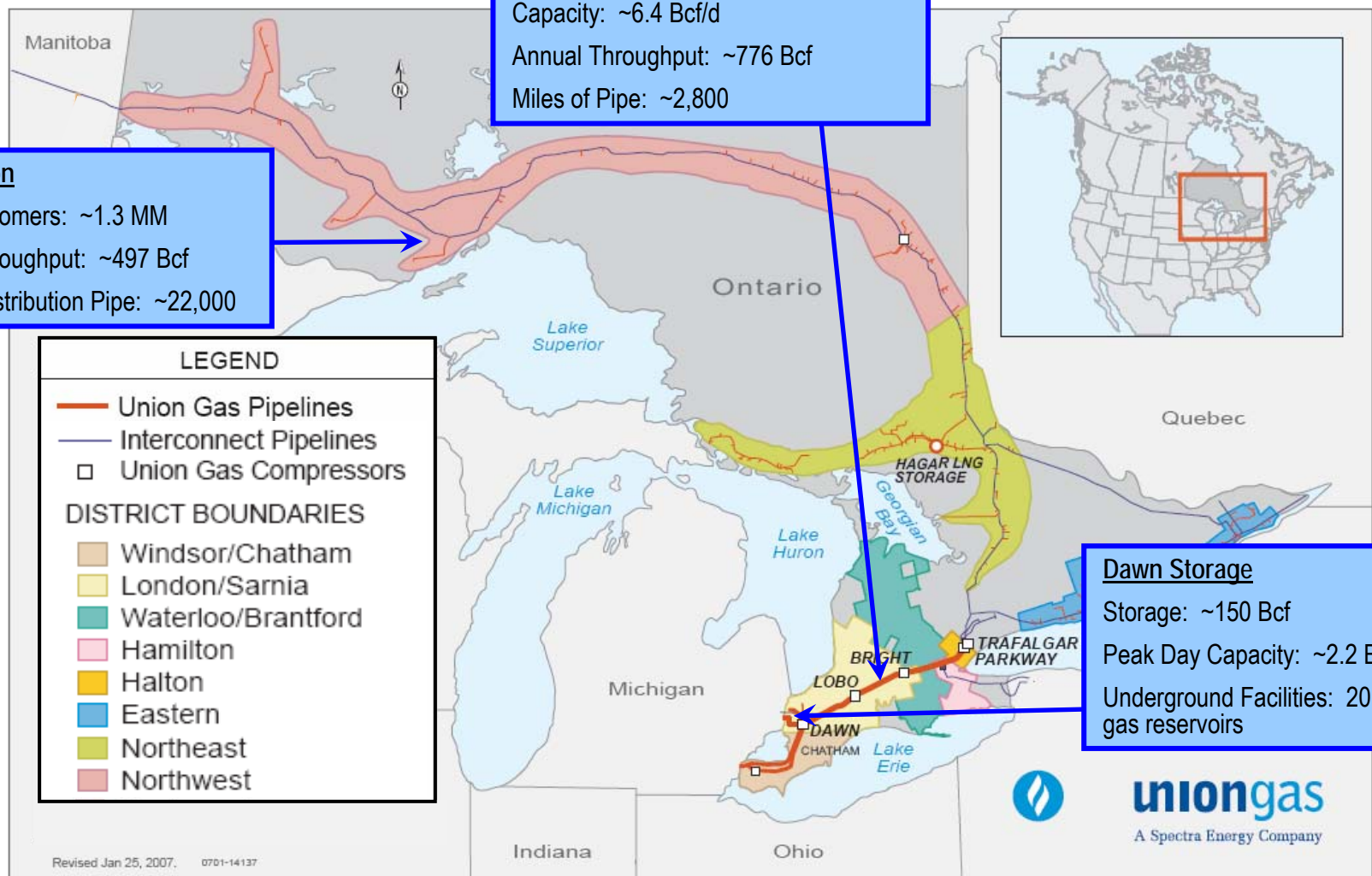
- Union Gas Pipelines
- Interconnect Pipelines
- Union Gas Compressors

**DISTRICT BOUNDARIES**

- Windsor/Chatham
- London/Sarnia
- Waterloo/Brantford
- Hamilton
- Halton
- Eastern
- Northeast
- Northwest



**Dawn Storage**  
 Storage: ~150 Bcf  
 Peak Day Capacity: ~2.2 Bcf/d  
 Underground Facilities: 20 depleted gas reservoirs



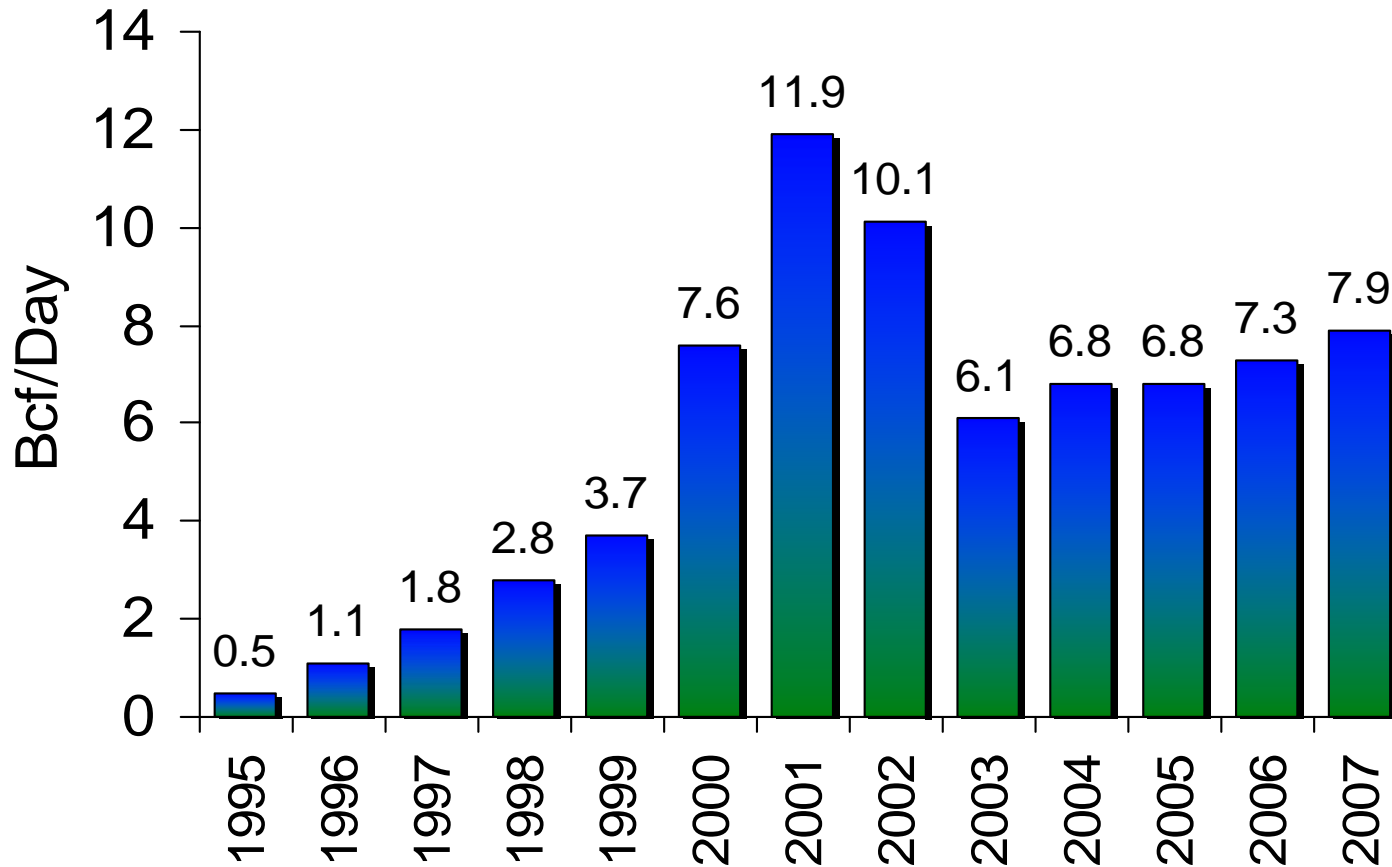
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# Dawn - Strategic Market Hub

Average title transfer quantity (Bcf/day)



**Dawn has over 7.9 Bcf/d of trading activity by over 100 parties**



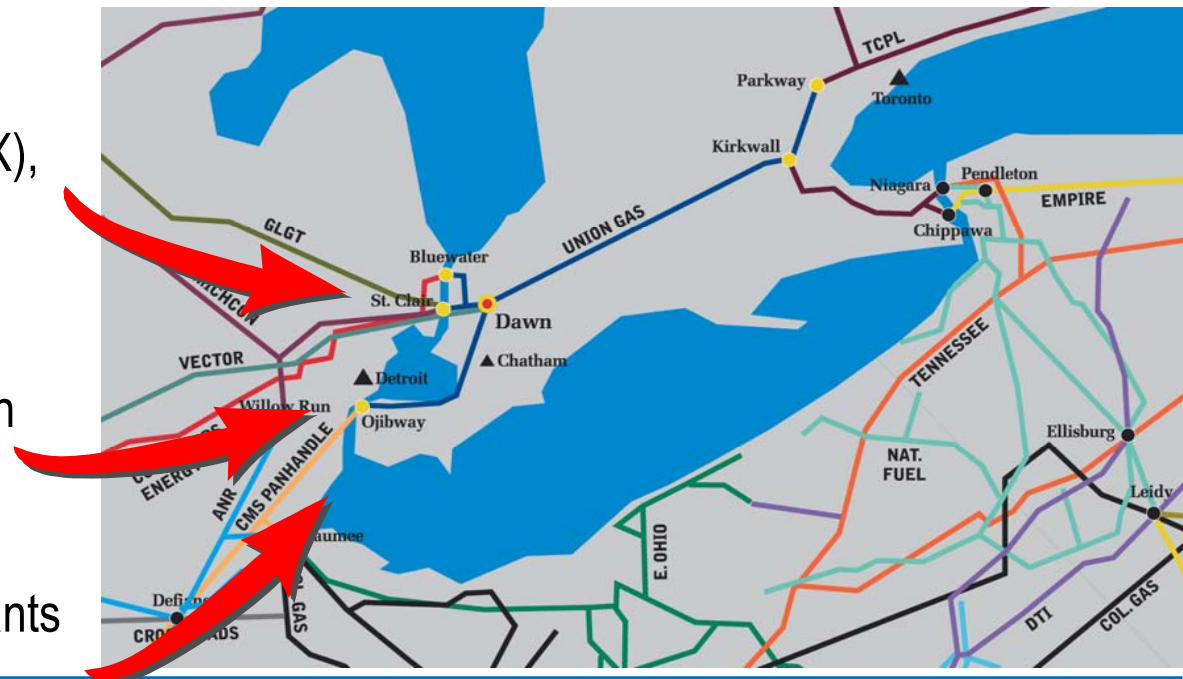
# The Dawn HUB

Many market participants – including eastern Canadian and US end users and utilities purchase gas supplies at Dawn.

In addition, Ontario power generators will be purchasing their gas supplies at Dawn – as directed by the Ontario Power Authority.

Why is this a good choice?

- Access to storage - 250+ Bcf at Dawn, 600+ Bcf in Michigan
  - 7 Storage providers
- Access to diversity of supply sources – WCSB, Rockies (REX), Gulf of Mexico, LNG
  - 6 interconnecting pipelines
- Dawn is one of the most liquid natural gas trading hubs in North America
  - 7+ Bcf traded daily
  - 100+ active market participants





# Changing Regulatory Environment in Ontario (NGEIR)



# Changing Regulatory Environment (NGEIR)

In 2005 and 2006, the Ontario Energy Board held a policy review regarding the interface between gas and electricity (NGEIR)

Policy review consisted of two main components:

1. Review of new short notice storage and balancing services for power generators
  - Negotiated settlement reached in June 2006
2. Review of storage regulation in Ontario
  - Board decision received in November 2006



# Review of Storage Regulation in Ontario

Key Questions Addressed by Regulator	OEB Decision
Is the Ontario storage market competitive?	<p style="text-align: center;"><i>Yes</i></p> <ul style="list-style-type: none"><li>• current storage providers do not have market power; storage prices are determined by reference to competitive commodity markets</li><li>• Ontario competes with greater regional market including Michigan, Illinois, Pennsylvania, New York</li></ul>
Should storage for non-utility customers continue to be regulated?	<p style="text-align: center;"><i>No</i></p> <ul style="list-style-type: none"><li>• storage services for ex-franchise non-utility customers will not be regulated</li><li>• storage services for Union Gas in-franchise distribution customers will continue to be regulated</li></ul>
Should new storage services (i.e. high deliverability) be regulated? Should new storage operators/facilities be regulated?	<p style="text-align: center;"><i>No</i></p> <ul style="list-style-type: none"><li>• new storage services <u>and</u> new storage operators will not be regulated</li><li>• OEB still approves facilities</li></ul>



# Review of Storage Regulation In Ontario

## Storage regulation in Ontario after the Nov 2006 Natural Gas Electricity Interface Review (NGEIR)

- OEB to cease to regulate and allow for market pricing on:
  - Exfranchise storage services
  - New storage services offered to infranchise customers
  - All storage services offered by other operators
- Existing cross subsidy of infranchise rates from exfranchise storage sales to be eliminated over 4 years
- OEB no longer to approve storage contracts between customer and Union
- Storage for in-franchise customers to remain at cost of service rates
- OEB must still approve new facilities
- OEB to define storage and transportation access rules
  - Includes; operating requirements, reporting requirements & dispute resolution mechanism.



# Review of Storage Regulation

## Impact of NGEIR Change

1. New framework supports long term investments and expansions in infrastructure
  - Union is undergoing a significant expansion to increase storage deliverability by 500,000 mcf/d for Nov 2008 in-service
  - Union has concluded a Phase II open season for 200,000 mcf/d of new deliverability for Nov 2010 – still evaluating results
  - Union has purchased 75% of the 3 Bcf Tribute Pool (currently under development) and the storage rights to a new 1 Bcf reservoir near Dawn (to be developed for 2009 in-service)
  - Enbridge is undergoing expansion to add 2 Bcf of high deliverability storage, to be completed by late 2008
2. Allows for new creative market priced services to meet changing customer requirements



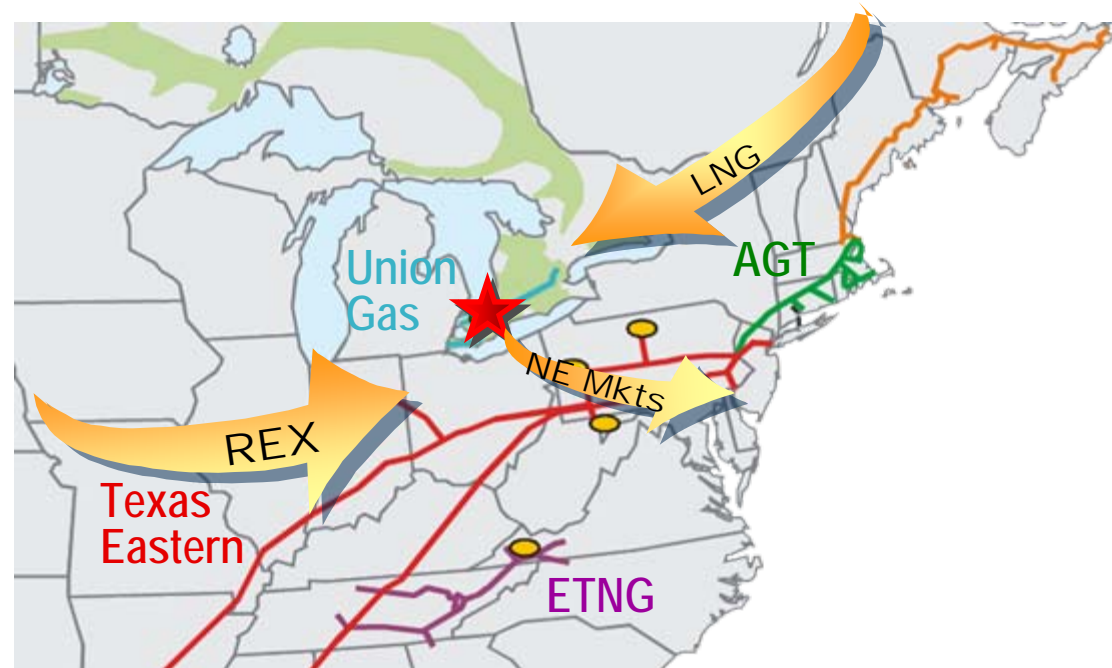
# Changing Market Dynamics (New Challenges)



# Changing North American Market Dynamics

## 1. Supply Changes

- Reduction in gas flows from traditional basins (WCSB)
- Increase from Rockies (REX), Gulf Coast Shale and LNG
- Seasonality of LNG deliveries to North America

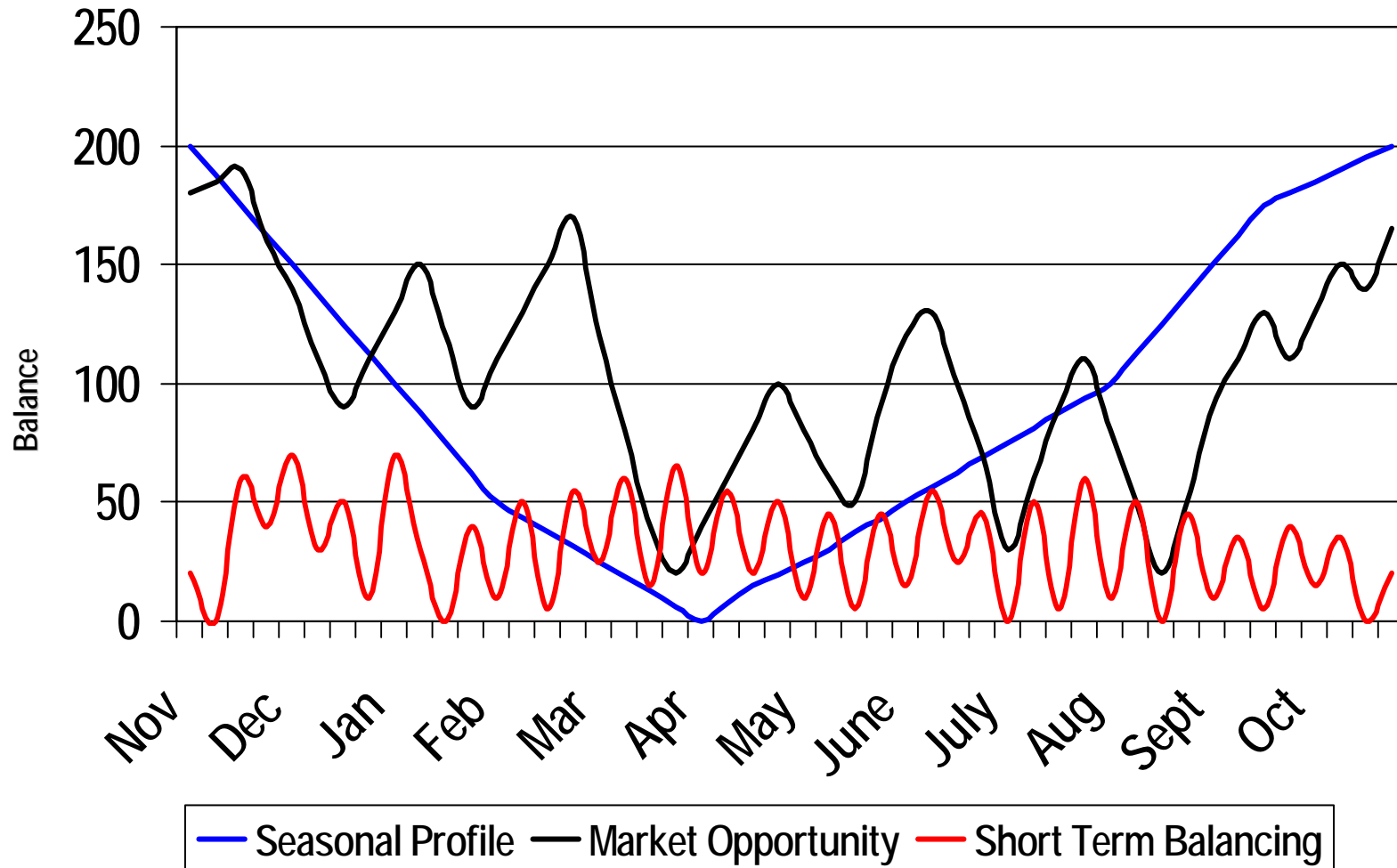


## 2. Market Changes

- Residential/commercial market average use is trending down, peak use continues to increase
- Increased natural gas fired power generation, higher summer and winter demands



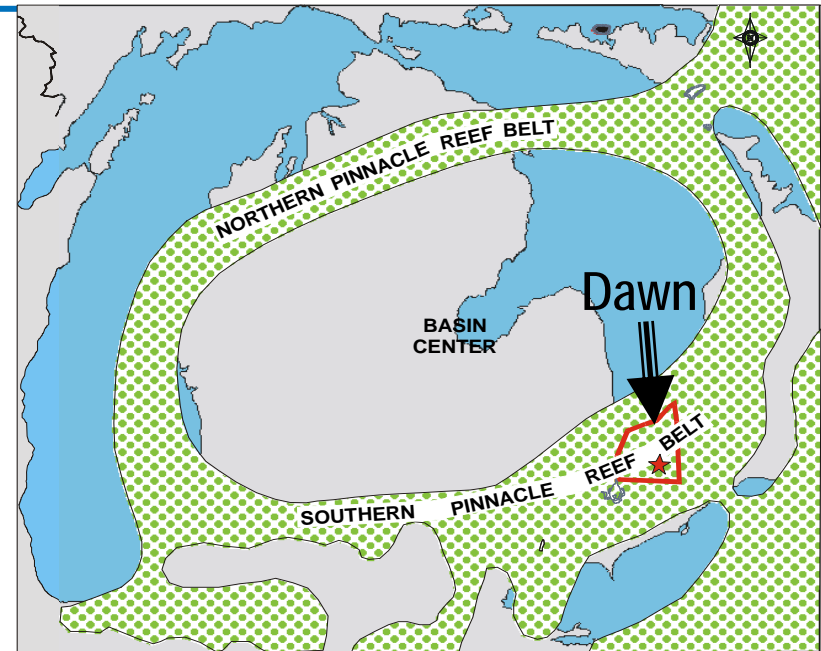
# Typical Storage Profile – Seasonal Balance





# Competitive Market – Storage Providers

- Since November 2006, storage providers have added significant facilities to meet increased natural gas demands
- Union competes with these and many other storage providers to meet the needs of customers



Storage Impacting Ontario	Oct 31/06		Nov 1/08		% Growth
	Space	Del.	Space	Del.	
Union – Dawn deliverability (Bcfd)		2.2		2.7	23%
Enbridge –deliverability (Bcfd)		2.0		2.2	11%
DTE – space (Bcf)	75		88		17%
Bluewater – space (Bcf)	26		29		10%
ANR – space (Bcf)	200		217		9%
Union / Market Hub Partners– space (Bcf)	150		153		3%



# Alternatives to Storage - Competition

There are many alternatives to physical storage, including;

- Storage purchased from other Ontario and/or Michigan Storage Providers
- Storage purchased from the Secondary Market /3<sup>rd</sup> Party providers
- Holding upstream pipeline capacity
- Gas Purchases – Winter Spot/Winter Peaking service
- Financial options to hedge winter deliveries
- Synthetic storage

Union's physical storage offerings must compete with each of these alternatives on an ongoing basis



# How Union is meeting these Challenges



# Recent Storage Asset Expansions

## Storage Space

- Union Gas
  - Tipperary: 3 Bcf, in-service 2008 (75% ownership)
  - Heritage: 1 Bcf, in-service 2009
- Market Hub Partners (a Spectra Energy Company)
  - St.Clair: 1 Bcf, in-service 2007
  - Sarnia Airport: 5.5 Bcf, in-service 2009

## Storage Deliverability

- Union's Dawn Deliverability Expansion 2008
  - 500,000 mcf/day, in-service 2008, fully contracted
- Union's recent Dawn Deliverability 2010 Open Season
  - 200,000 mcf/day deliverability, in-service 2010, contracts not yet awarded

### Total – to be added between 2007 and 2010

→ 10.5 Bcf of space by Union and its affiliates

→ 700,000 mcf/day of deliverability incl. expected 200,000 mcf/day from the 2010 Open Season



# New Storage Services

In response to the requirements of the changing storage market and storage forbearance, Union developed and is now offering a suite of new storage services (Power Producers / Marketers)

- **High Deliverability Storage (10 or 20% deliverability)**
  - Current open season underway for Phase II expansion – Nov 1, 2010
- **F24-T - Firm all day transportation**
  - 13 nomination windows available, firm all day (industry standard = 4, firm for 1<sup>st</sup> window only)
- **F24-S – Firm all day storage injections/withdrawals / 13 windows**
- **Upstream Pipeline Balancing Service (UPBS)**
  - Load shaping service – allows for uneven flows across day
- **Downstream Pipeline Balancing Service (DPBS)**
  - Short notice balancing with 15 minute notice, in market area (Parkway)
  - Aligns with TCPL's FT-SN service



# Opportunities & Challenges for Storage Development



# Support for Future of Storage Development

- Increased market demand
  - Storage is in high demand for all market segments (Ontario, U.S. Northeast)
- De-regulation of storage in Ontario
  - Competitive market which supports new physical storage expansion
  - Market will signal need for new capacity
- Growing need for new and innovative storage services to reflect changing need of storage customers
- Continued growth in liquidity at the Dawn HUB

# Challenges for Market Driven Storage Development



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- New storage development more expensive
  - Construction costs increasing
  - More competition
  - New storage developments further away from market centers
- Long term commitment to support capital vs. shorter term market needs
- Competition for Capital
  - Project returns for storage developments must compete against other North American energy projects (LNG, pipeline development, oil sands, etc)
- Economic Viability
  - Long term storage valuations need to support project expansion
- Timing of Expansions
  - Minimum 2-year lead time required to complete facility expansions
- Alignment with customer demands
  - Projects come on-line in large “lumpy” increments

# Challenges for Market Driven Storage Development

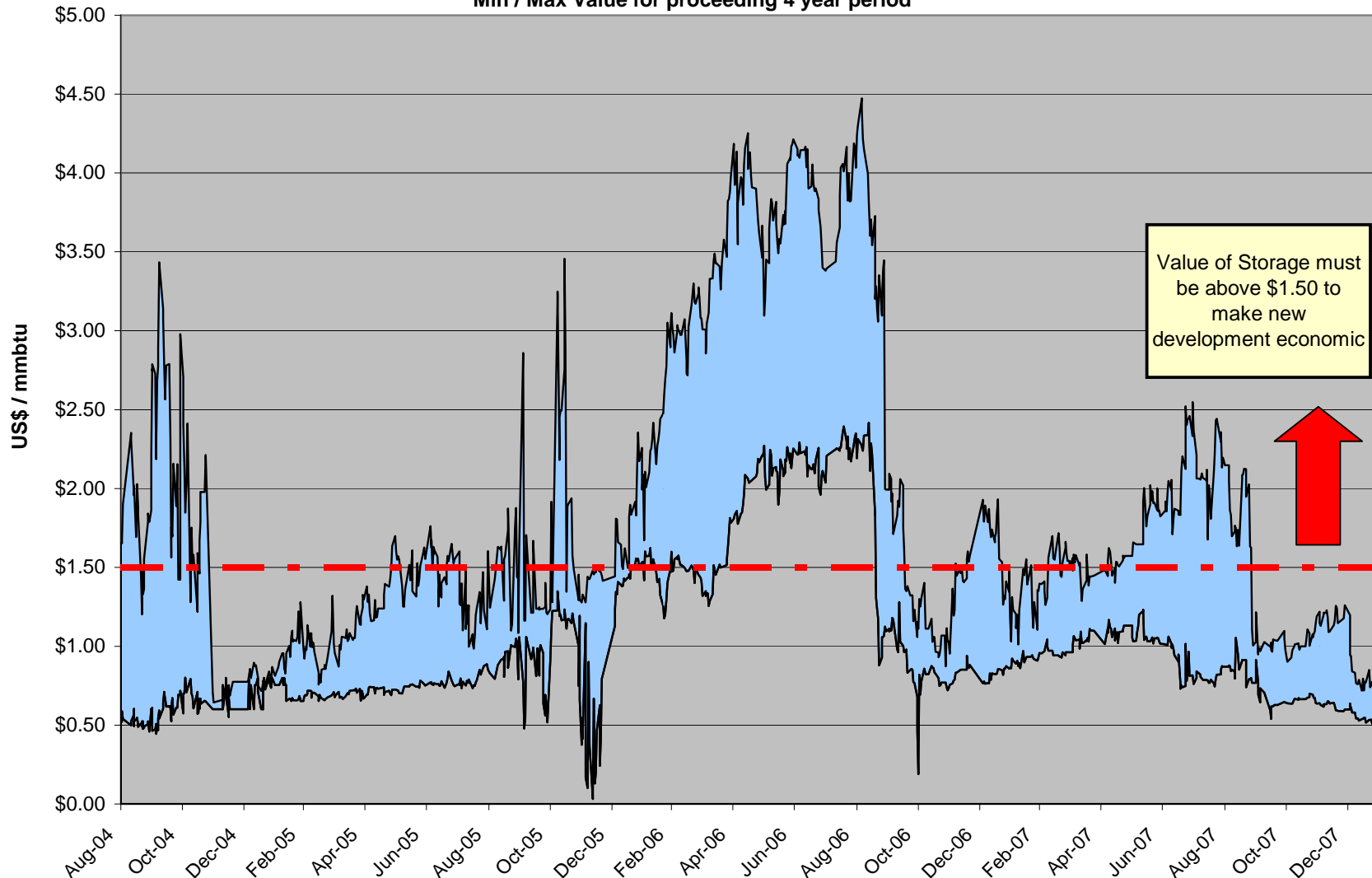


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## Storage Value (90 Day Service)

Min / Max Value for preceding 4 year period





# Summary

- Storage forbearance decision has changed the Regulatory framework under which storage is operated and developed in Ontario. New framework supports investment in storage that will benefit all marketplace participants in Ontario.
- New storage services are being developed to meet demands of a changing market
- Union has and will continue to lead the way in the development of services for the power generation market and other interested parties
- Union's Dawn storage operations and Dawn to Parkway Transportation system are a key linkage to all new supplies to access storage and key growing eastern Canadian and U.S. northeast markets