

Electric and Natural Gas
Energy Aggregation

2011 Growing the North Conference

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CHYMKO

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Discussion Topics

- About Chymko
- Utility Bill Elements
- Load Shape
- Energy Prices
- Corporate Needs
 - Aggregation
- Summary
- Actions

Chymko's Primary Areas of Practice

Market Research and Resource Planning

- Energy procurement and portfolio management
- Contract assessment and negotiations

Commercial and Market Matters

- Development/implementation of competitive procurement processes
- Development/negotiation of commercial arrangements

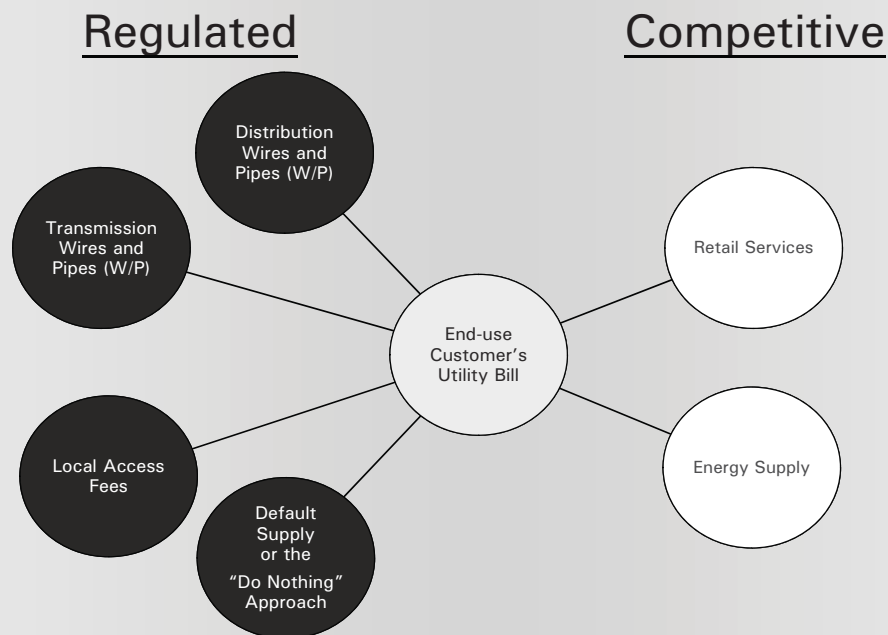
Business Planning and Development

- Corporate and financial restructuring
- Analysis for utility-based pricing to access infrastructure

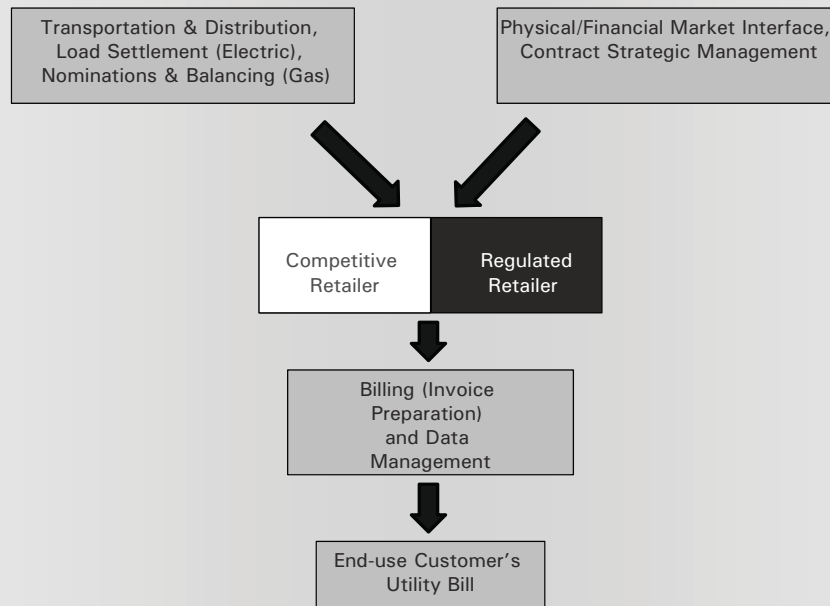
Regulatory and Government Affairs

- Regulatory, cost of service and rate design
- Utility tariff applications

Key Elements of Your Utility Bill



Utility Bill



Regulator

- Role
 - Public interest
 - Just and reasonable rates
- Regulators
 - AUC
 - City Councils
 - Gas Co-ops
 - REAs
- AUC Approves:
 - Tariffs
 - Terms and Conditions
 - Need for Transmission facilities
 - Siting of Generation and Transmission facilities

Regulated Components

Components

Wires and Pipes

Local Access Fee

Default Supply

- Customer has no choice in utility its connected to
- Customer can participate in regulatory hearings
- Costs, Tariffs and T&Cs become fixed
- Site specific
- Blended price for default supply
- Metering (Smart Grid)
- $> 2/3$ of costs for small sites
- $< 1/3$ of costs for large sites

Competitive Components

Components

Retail Services

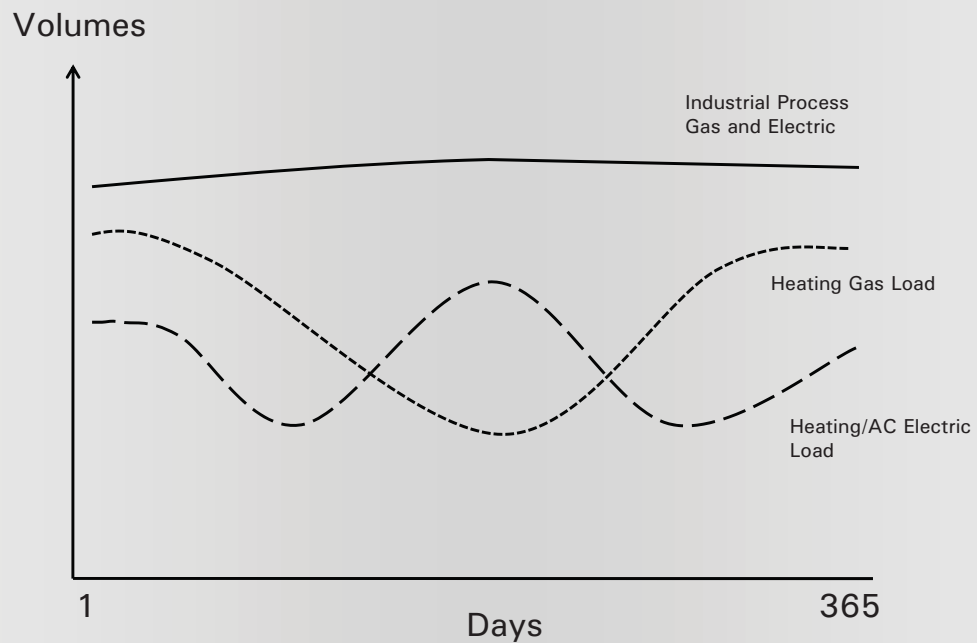
Energy Supply

- Customer has choice
- Customer has some control over costs and terms of service
- Customer specific pricing
- Aggregation of:
 - Sites
 - Load
 - Invoice
 - Commodities
- Retailers are licensed, MSA oversight

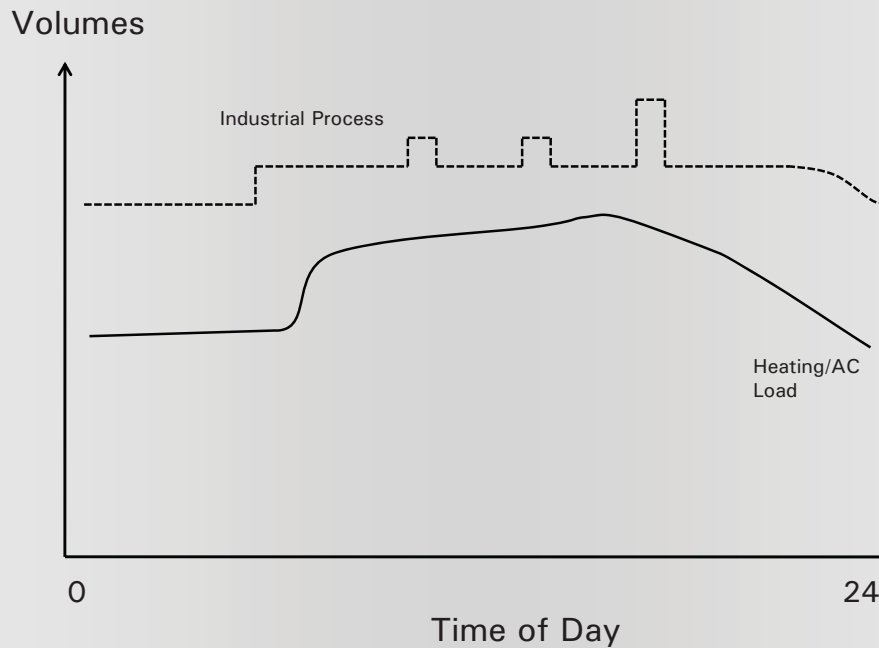
Load Shape

- Load Shape is consumption over time
 - Yearly
 - Monthly
 - Weekly
 - Daily
 - Hourly
 - 15 minutes

Yearly Profile



Daily Profile



Future Load Shape

- Conservation and efficiency
 - Turn off/down
 - New equipment, change processes
- Load management
 - Shift demand
- Own Supply
- Changes
 - New facilities or processes
 - Combining, reducing or shutting down
- Results on Wires and Pipes
 - Lower variable charges
 - Billing demand
 - Contract penalties

Alberta Energy Markets

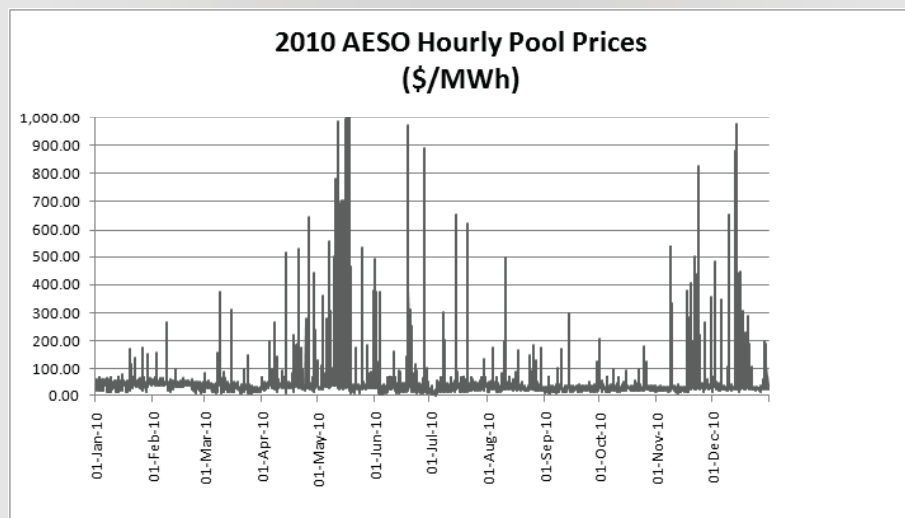
Electricity

- Power Pool of Alberta
- **Hourly** Market and Price
- Hourly prices volatile
- Less liquid market
- Forward prices ≤ 5 years

Natural Gas

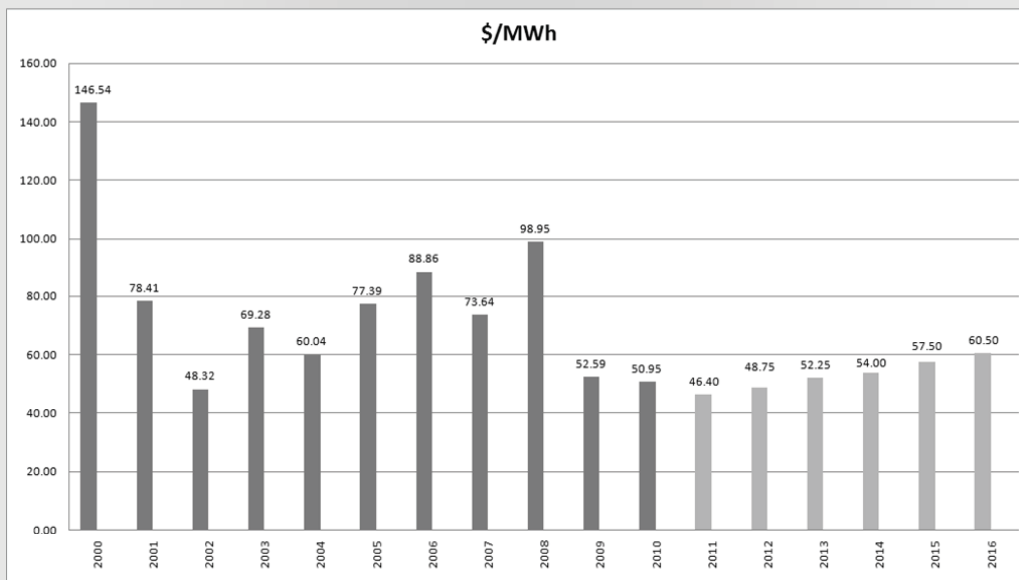
- Intra-AB
- **Daily** Market and Price
- Daily prices less volatile
- Liquid market
- Forward prices ≥ 5 years

Hourly Electricity Prices



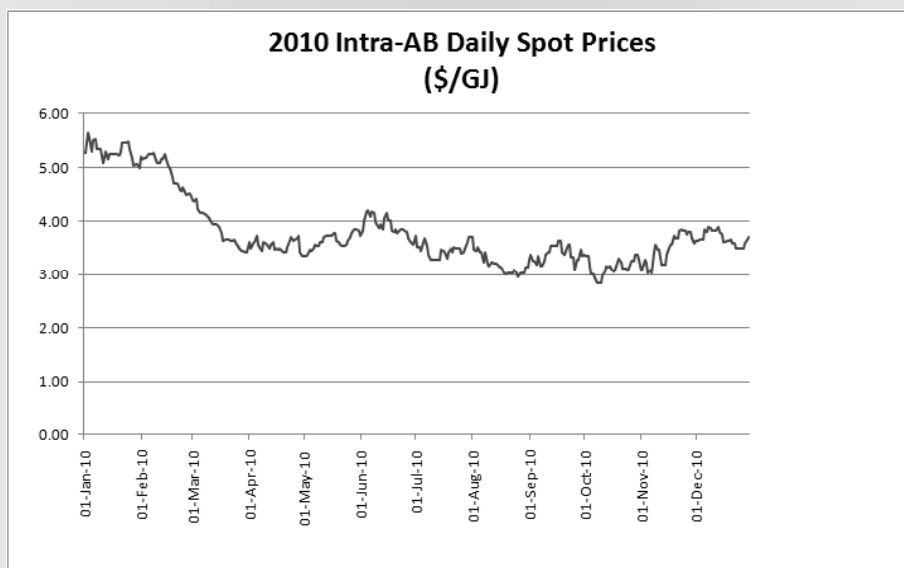
*Prices shown are Wholesale

Annual Average and Forward Electric Prices



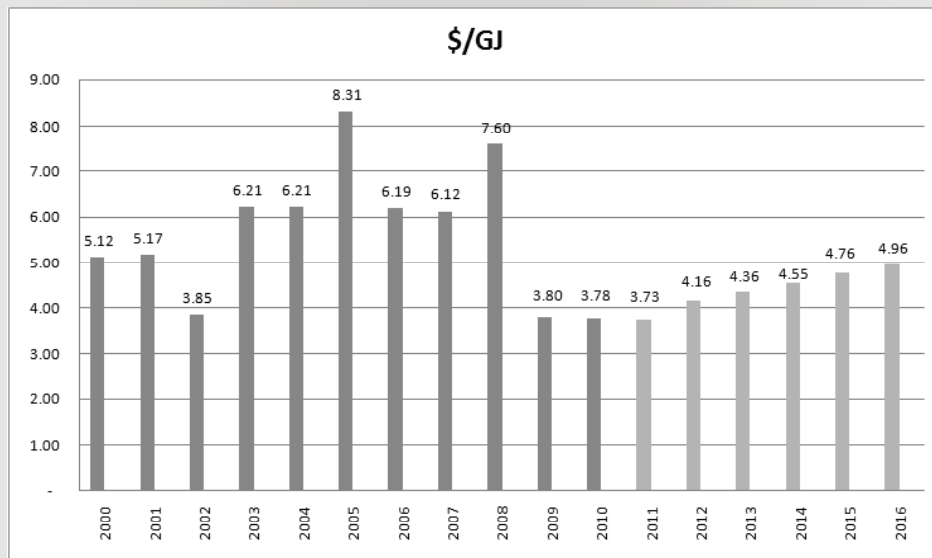
*Prices shown are Wholesale

Daily Natural Gas Prices



*Prices shown are Wholesale

Annual Average And Forward Natural Gas Prices



*Prices shown are Wholesale

Corporate Needs

- Aggregation
 - Sites
 - Load
 - Company specific or a group of companies
 - Electricity and/or natural gas
- Budget stability and risk tolerance
- Term of Service
- One or two retailers
- Change in operations
 - Add/delete sites
 - Volume changes

Corporate Needs

- Invoices and data requirements
 - Aggregated total only, total and each site
 - Data formatted for upload into financial/energy management systems
 - Access data online
- Credit Requirements
 - Rating/strength
 - Letter of credit
 - Deposit
 - Prepayment
 - Prudentials

Corporate Needs

- Product
 - Physical Commodity e.g. Full load following requirements
 - Financial Commodity e.g. Derivative, settlement
 - Seasonality
 - Exposure to spot markets
 - Renewable energy
- Pricing
 - Term average
 - Annual
 - Seasonal
 - Site specific

Summary

- Align
 - Corporate needs
 - Contract requirements
- Pricing
 - Company specific
 - Supplier blended price
- Level of service
 - Basic
 - Customized
- Aggregation
 - Sites
 - Load
 - Invoice
 - Commodities

Actions

Taking Regulated Default Supply is a choice, and it might be the correct choice but...

- Doing nothing without understanding your options is ill-advised
- Likely a buyer's market
- Procurement processes take time
 - Start early
 - Do not wait until your current contract nears expiration
 - If you don't have a contract, now may be an opportune time

Questions?