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Massachusetts Gas Procurement Practices of the Local Distribution Companies

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Objective

- To serve firm customers
 - Safely with firm contracts
 - Reliably by diversifying the sources of supply
 - Least cost basis consistent with demand and supply constraints



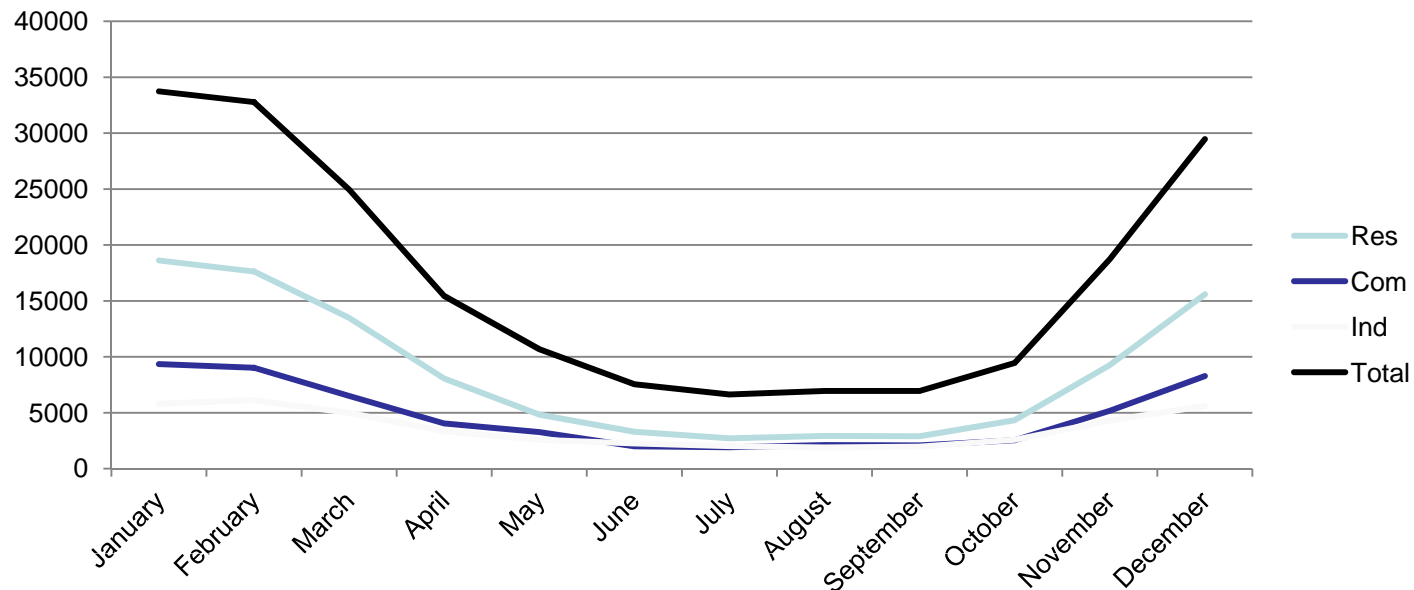
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Load Profile

- To serve its customers reliably, an LDC develops a supply portfolio.
- Mix of the portfolio, depends on the load profile of its customers and availability of resources.





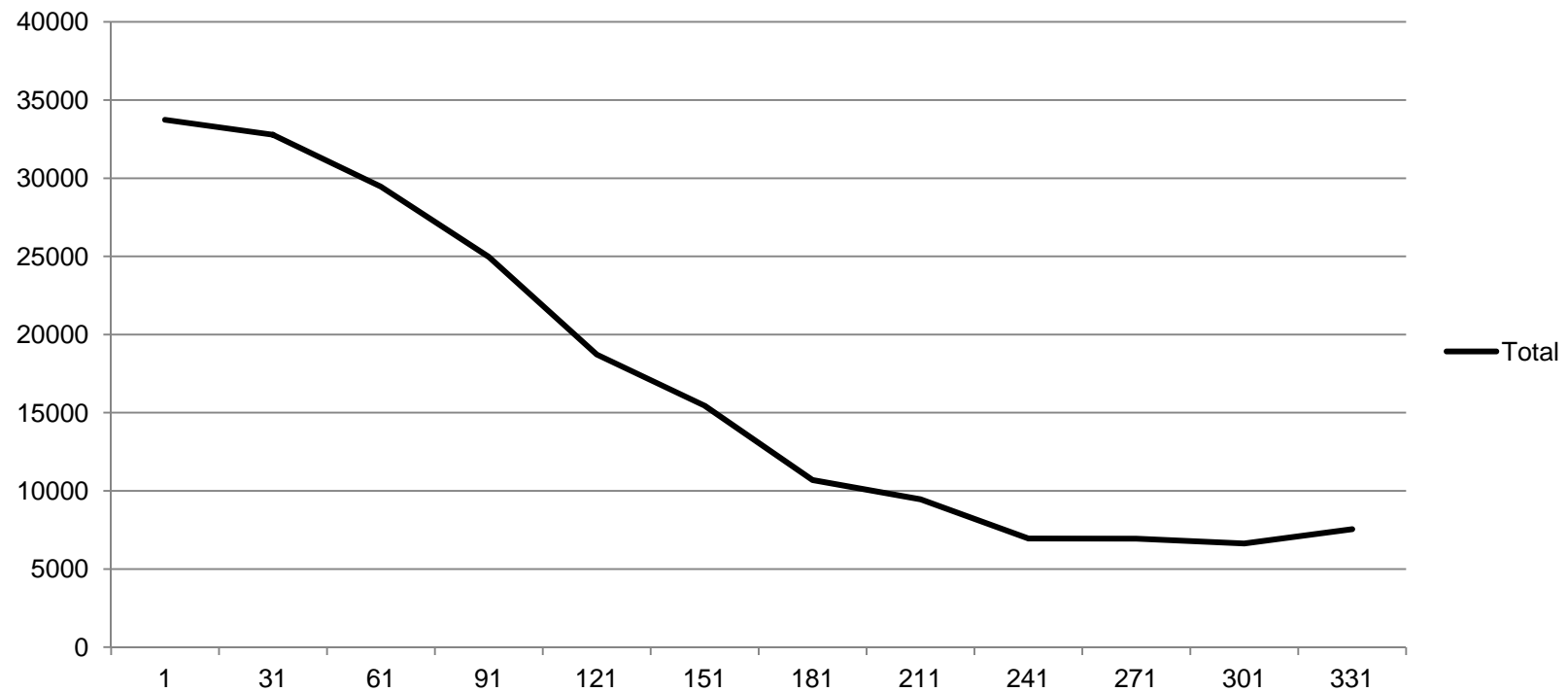
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Load Duration Curve

Total



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Supply Portfolio

- Developed over time consistent with load growth and availability of resources in the market place
- Diversity of supplies to assure reliability
- Pipeline Supplies: Long haul capacity
- Seasonal resources: Underground storage
 - » Volume
 - » short haul transportation capacity
 - » Daily injection withdrawal capacity
 - » # of days of withdrawal capability
- Peaking resources-
 - » On-system LNG
 - » Propane
 - » Power plant peaking



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Q & A

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Availability of Resources

- **Interstate pipelines:**
 - » Tennessee Gas Pipeline
 - » Texas Eastern & Algonquin
 - » IROQUOIS
 - » Portland Natural Gas Transmission System
 - » Maritimes Northeast
- **Underground storage:**
 - » Louisiana,
 - » Mississippi,
 - » W. Virginia,
 - » Pennsylvania,
 - » New York,
 - » Michigan
- **Supply areas:**
 - » Gulf Coast
 - » Western Canada
 - » Eastern Canada
 - » Rockies
 - » Marcellus Shale
 - » Production and market area storage
 - » LNG Import terminals



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Gas Demand

- LDCs acquire sufficient supplies to ensure that customer demand is met even under very extreme conditions (Design Day/Design Year)
- Required to forecast demand for 5 years:
 - Under normal weather conditions
 - Under extreme winter weather conditions (design winter)
 - Extreme peak cold day (design peak day)
 - Possibility of a continuous very cold period(cold snap)
 - Possibility of higher demand due to higher economic growth



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How Much Gas, When & from Where to Buy

- Depends upon the transportation and storage contracts acquired by the Company over time and the availability of new sources
- For storage and LNG liquefaction
 - Buy gas during summer months to match available storage injection capacity or LNG liquefaction capacity
 - Price can be allowed to float each month with forward monthly indices or can be hedged 12-18 months in advance of their requirements for certain volumes.
- For daily flowing gas
 - Base load gas for the month – on a fixed price based on some published price index for the month.
 - “Swing” gas above or below the base gas for daily needs based on daily published spot prices.



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Contracting

- RFP process for seasonal or longer term
- Supplier is selected based on price, resources held by the supplier, financial reliability, past experience with the company, parent company guarantees
- For capacity:
 - Open season
 - Look for excess capacity postings on pipeline Bulletin Boards
 - Term is generally 5-20 years
 - Tariff fixed by regulatory agency like FERC
- For Commodity:
 - Term 1-3 years
 - North American Energy Standards Board (NAESB)
 - Daily or monthly published indices at purchase locations
 - Base load are generally priced on monthly indices
 - Swing supplies are generally priced at daily indices
- For Short Term:
 - Use electronic trading platforms like NYMEX or ICE