QUARTERLY FOCUS:

MARKET PENETRATION OF GAS IMPORTS INTO NEW ENGLAND

- Historically, natural gas use in New England has played a relatively minor role in meeting the region's energy supply needs due to the region's geographical location at the end of the interstate natural gas transmission system. The region's energy supply needs have been largely met by petroleum. As recently as 1987, petroleum use equaled about 63 percent of the total energy consumed in New England while gas use accounted for only 13 percent of its energy use. In comparison, nationwide use of petroleum and natural gas in 1987 equaled 43 percent and 23 percent of total energy consumption, respectively [EIA, *State Energy Data Report 1992* (May 1994)].

- Although New England's past use of natural gas has been relatively minor, natural gas import supplies have been present in the region for 30 years. Since 1966, Vermont Gas Systems, Inc., a local distribution company (LDC) located in northwest Vermont, has been importing Canadian gas from TransCanada PipeLines Ltd., or its marketing affiliate, Western Gas Marketing, Ltd. Due to the LDC's isolated location, there are no interstate pipelines available to transport domestic gas sources to its market area; as a consequence, Vermont Gas is totally reliant on Canadian natural gas for its system's supplies.

- In addition to Canadian natural gas imports into New England, liquefied natural gas (LNG) imports from Algeria have been used since 1968 as a small but important source of gas for the region, particularly as a winter peak-shaving fuel. Boston Gas Company imported the first LNG supplies into the country in November 1968, and Distrigas Corporation, with its LNG import terminal located at Everett, Massachusetts, has been importing Algerian LNG since November 1971. LNG imports were introduced into New England primarily to meet winter demand requirements which exceeded the amount of domestic gas that could be delivered to the region by pipeline or from storage.

- From the late 1960's to late 1984, most of the gas imports into New England were made by either Vermont Gas, or Distrigas. There were some small volumes of Canadian gas imported at the Niagara Falls, New York, entry point that found their way to New England, but the volumes were relatively insignificant.

- Following the oil import supply disruptions of the late 1970's, the New England states took steps in the early 1980's to promote the diversification their energy sources, both in terms of supply mix and source. One of the steps was to advocate increased use of Canadian natural gas.

- **Figure 1** shown on the next page depicts the chronology in the growth of natural gas imports into New England over the last three decades. It lists nine events which facilitated the growth in the use of natural gas imports in the region. From 1966 to the fall of 1984, the use of natural gas imports in New England grew from less than 1 Bcf to over 42 Bcf. As stated earlier, Distrigas and Vermont Gas were the suppliers of virtually all of the imported gas marketed in New England during this time period, with Distrigas importing the majority of the volumes. From 1966 to 1984, imports by Vermont Gas grew from less than 1 Bcf to about 5 Bcf, and Algerian LNG imports, beginning in 1968, grew to over 36 Bcf by 1984. **Figure 1** illustrates that the growth of gas imports during this period was uneven; this was due to the often significant annual fluctuations in the imports of Algerian LNG by Distrigas.

- The 4th event listed in **Figure 1**, the commencement of imports by Boundary, Inc., was a watershed in the utilization of Canadian natural gas in the U.S. Northeast, including New England. Boundary Gas, Inc. was formed in 1980 by 14 natural gas distribution companies in New England, New York, and New Jersey, for the sole purpose of securing long-term firm Canadian gas supplies to supplement traditional sources of supply in the region. The Boundary Gas Project marked the first time a group of local distribution companies (LDC), including nine from New England, directly negotiated long-term pipeline gas supplies to supplement their customary pipeline deliveries. The Project also provided for new pipeline capacity, thereby improving the logistical ability of these LDCs to secure additional foreign and domestic supplies.

- The drop in natural gas imports shown in **Figure 1** during the mid-1980's was due to the suspension of Algerian LNG imports by Distrigas in 1985 due to a price dispute with Sonatrach, the Algerian national oil and gas company. Distrigas did not resume importing from Algeria until 1988.

- The 6th event shown in **Figure 1**, the construction and operation of the Iroquois Gas Transmission System, greatly increased the presence of Canadian natural gas in the U.S. Northeast. Today, approximately half of this system's capacity is dedicated to supplying New England. Under 34 long-term gas supply contracts, almost 123 Bcf of Canadian gas per year flows through this system into New England.

- As indicated in **Figure 1**, New England now receives Canadian natural gas at four international entry points. During 1994, natural gas importers delivered supplies to New England under 43 long-term contracts (longer than 2 years) at these four international entry points. The 43 long-term contracts have an aggregate daily contract demand of 598.9 MMcf, or 218.6 Bcf per year.

- **Figure 2** shows the substantial growth in natural gas use in New England over the past 8 years, as well as the region's increasing reliance on imported gas supplies to meet the incremental growth in demand.

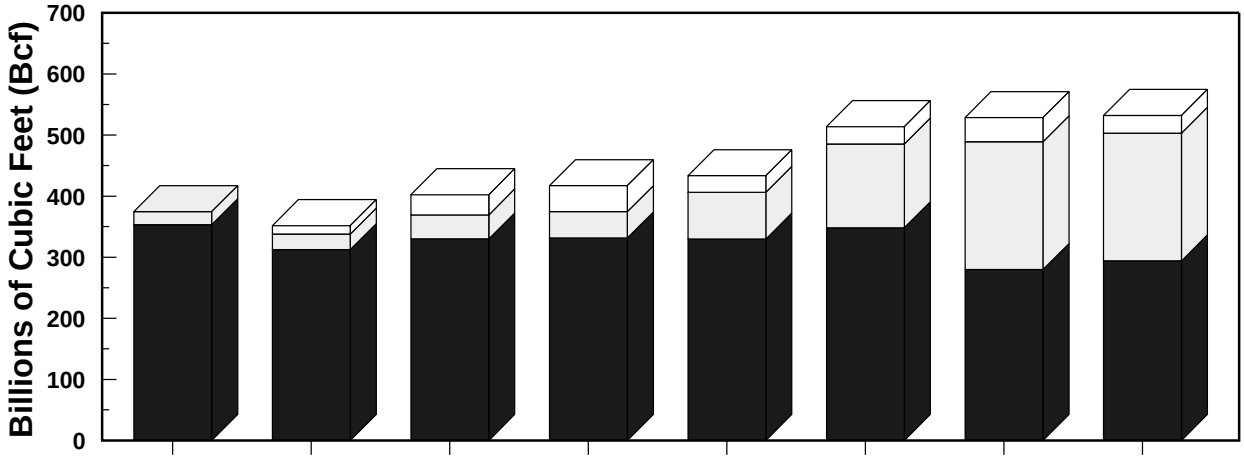
- From 1987 to 1994, total natural gas consumption grew from 374.4 to 532.0 Bcf, or over 42 percent. During the same time period, natural gas imports marketed in New England grew from 21.2 to 238.1 Bcf, or a ten-fold increase. Virtually the entire incremental growth in demand during this period was supplied by imported natural gas supplies.

- **Figure 2** shows that natural gas imports as a percentage of total natural gas consumption in the region grew from a modest 5.7 percent in 1987 to well over 40 percent during the past two years. Today, New England relies more on natural gas imports to meet its supply needs than any other census region in the country.

Figure 2

Sources of Natural Gas Marketed in New England

(1987 - 1994)



	1987	1988	1989	1990	1991	1992	1993	1994
Domestic Supplies	353.2	312.3	329.9	331.4	329.6	348.2	279.8	293.9
Canadian Supplies	21.2	25.4	39.3	43.1	76.6	137.0	209.1	209.0
Algerian Supplies	0.0	13.9	33.0	42.5	27.1	28.5	39.6	29.1
TOTAL SUPPLIES	374.4	351.6	402.2	417.0	433.3	513.7	528.5	532.0

Imports as a % of Total Consumption	5.7	11.2	18.0	20.5	23.9	32.2	47.1	44.7

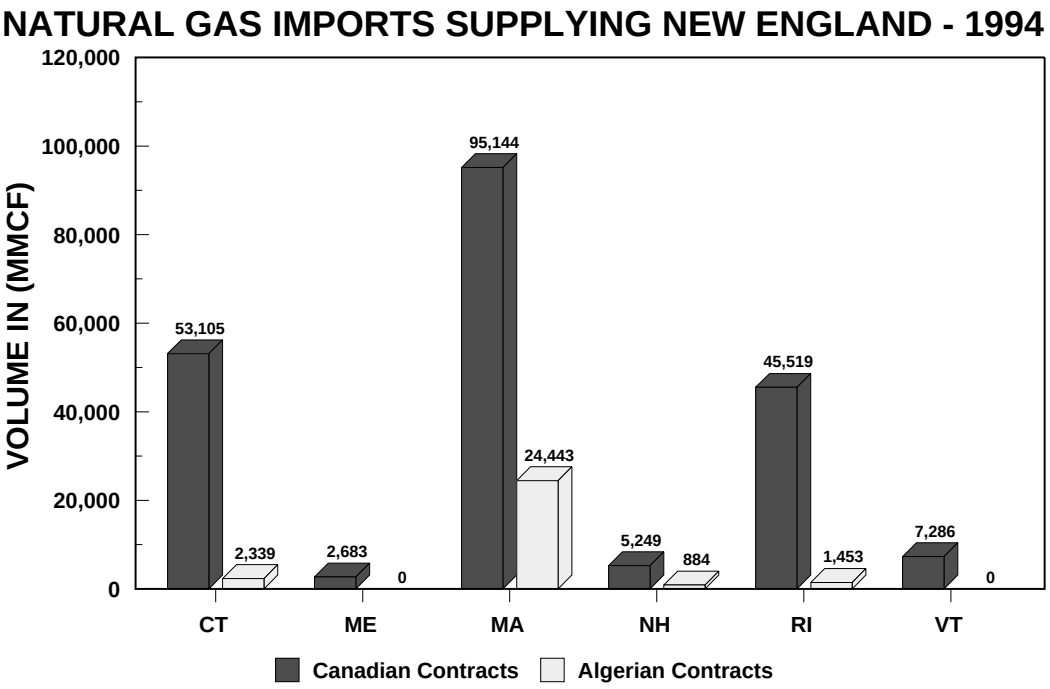
Sources: Natural gas consumption data from 1987 - 1993 came from EIA's Natural Gas Annual (DOE/EIA - 0131); 1994 consumption figure is an estimate from EIA; Import data are derived from company filings made with OFP.

- **Figures 3 through 5** present snapshots of natural gas import activity in New England during 1994.

- **Figure 3** shows the distribution of natural gas imports marketed during 1994 in the 6 states comprising New England.

- As shown, the bulk of the imports destined for sale in New England is sold in the state of Massachusetts. About 45 percent of the Canadian gas import volumes and 84 percent of the Algerian LNG volumes marketed in New England are sold in this state.

Figure 3



Source: Quarterly filings by natural gas importers to OFP.

- **Figure 4** shows the total volume of Canadian natural gas imported into New England under long-term contracts in 1994, as well as the percentages of this volume that were imported by class of importer; e.g., local distribution company.

- During 1994 the weighted average international border price for Canadian natural gas imported into New England under long-term contracts was $2.44 per MMBtu. This compares with a $2.00 per MMBtu average price for all Canadian long-term gas supplies imported into the United States during 1994.

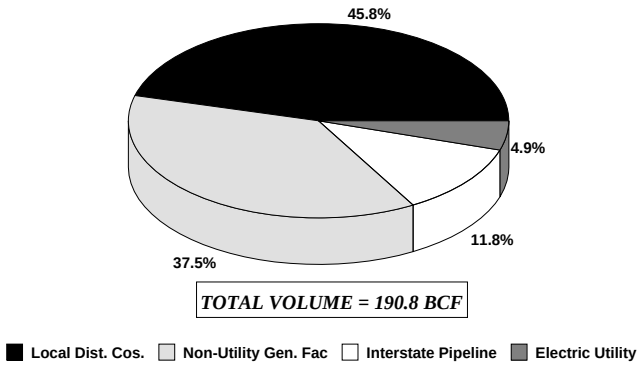
- The 190.8 Bcf of natural gas sold in New England under long-term contracts represents 91.3 percent of the total Canadian gas volumes marketed in New England during 1994. The remaining gas imports (8.7 percent) were sold under contracts of two years or less. The high percentage of imports coming into New England under long-term contracts is in sharp contrast with the country as a whole. In 1994, 53 percent of all Canadian gas

imports into the United States were purchased under long-term contracts, while the other 47 percent were made under short-term arrangements. The long-term nature of the contracts serving New England can be directly attributed to the underlying need for firm long-term gas supply arrangements to support the pipelines which were built to serve this region over the past 10 years.

- **Figure 5** estimates New England's reliance on imported natural gas on a state-by-state basis. The percentage shown for each state represents the portion of the state's gas supplies derived from natural gas imports. Although overall regional reliance on natural gas imports during 1994 is estimated to be about 45 percent, there is considerable differences among the 6 states which comprise New England. For example, the state of Vermont does not consume great volumes of natural gas, but virtually all of its supplies come from Canada. In spite of the fact that Massachusetts consumes over half of natural gas imports in the region, in 1994 only 39 percent of its supplies came from imports.

Figure 4

1994 CANADIAN NATURAL GAS IMPORTS
INTO NEW ENGLAND UNDER LONG-TERM CONTRACTS

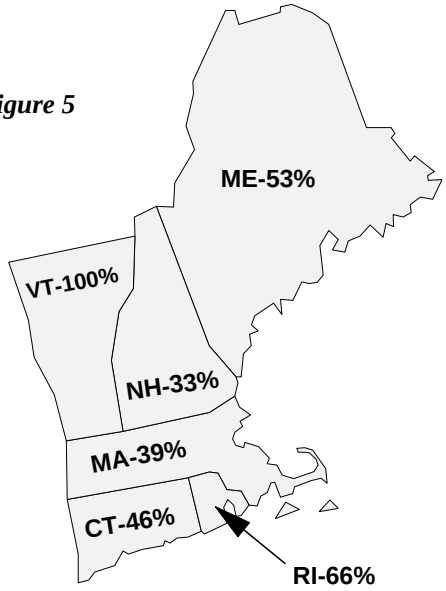


Note: Boundary Gas, Inc. imports are shown as LDCs.
Source: Quarterly filings by natural gas importers to OFP

ESTIMATED STATE RELIANCE ON NATURAL GAS IMPORTS DURING 1994

(As a Percentage of Total State Gas Consumption)

Figure 5



Sources: Total state gas consumption data are estimates from EIA, Office of Oil and Gas, Reserves and Natural Gas Division, Data Operations Branch; natural gas import consumption data are from quarterly filings submitted to OFP from gas importers.