

# Natural gas comes from ne

YOUR furnace can't tell the difference, but the natural gas it burns may have originated in Canada, the Southwestern part of the U.S. or California. For a few PG&E customers near Mountain View, the gas may have come from wells sunk in a sanitary landfill, collecting the methane formed inside the decomposing material.

Future sources of supply will include distant lands. Liquefying the gas will enable PG&E to ship it in tankers to a southern California terminal, where it will be converted back to gas. New pipelines will bring supplies from the Rocky Mountains and North Alaska. Coal, oil, shale, cattle manure and agricultural wastes may also be converted to gas.

This diversity in supply should enable you and other PG&E residential customers to rely on this clean, efficient form of energy in the years ahead.

That's the good news. The bad news is that the gas will cost more.

IN THE LATE 1920s, the discovery of large natural gas fields north of Bakersfield led to the construction of a pipeline to the San Francisco Bay area. By the end of 1930, 183,000 customers in the city had converted to natural gas. The growing network of mains began encouraging acceptance of the fuel elsewhere.

El Paso Natural Gas Company's western Texas and New Mexico fields started feeding gas to PG&E mains in the early 1950s.

Canada became a major supplier in 1961 when PG&E foresaw the needs of a growing population and formed two subsidiary companies to build and operate a huge pipeline to the north.

The '70s presented challenges—including the energy crunch. Canada, which supplies nearly half of PG&E's gas, began matching gas export prices to OPEC's oil price increases. Back in 1968 PG&E paid 28 cents per thousand cubic feet for Canadian gas at the Oregon border. On November 3 the price was \$3.45 per thousand cubic feet. Export permits for the gas PG&E now receives from Canada will begin to expire in 1985. The company hopes the permits will be renewed, but there

is no guarantee they will.

Beginning in 1972, the U.S. Federal Power Commission (now the Federal Energy Regulatory Commission) put a crimp in PG&E's supply when it ordered part of the gas PG&E had contracted for from El Paso Natural Gas to be shared with other El Paso customers east of California.

Federal limitations on the supply of El Paso gas and the need to conserve the diminishing quantity of California gas for residential and other priority customers during cold snaps have caused PG&E to purchase as much gas from Canada as possible. Even though it costs almost twice as much, it's the only way the Company can assure customers sufficient supplies.

Challenges like these caused PG&E to accelerate its search for additional gas supplies in the U.S. and throughout the world. For example:

Six years ago PG&E arranged to purchase natural gas from Indonesia, planning to convert it to liquefied natural gas (LNG). An LNG terminal at Little Cojo Bay near Point Conception in Santa Barbara County got final approval in October by the CPUC and the Federal Energy Regulatory Commission. Additional supplies of LNG will arrive from south Alaska.

The terminal, when operating at full volume, is expected to handle enough gas to meet the needs of one-fifth of PG&E's customers if completed on schedule in the winter of 1983-84.

THE DISCOVERY of new gas fields in Wyoming and Utah enabled Pacific Gas Transmission Company, a PG&E subsidiary, to seek federal approval earlier this year of an 800-mile pipeline. The line would initially carry 300 million cubic feet of gas a day when the line is expected to be completed in the winter of 1984-85.

Alaska's North Slope offers another source of gas if a group of American and Canadian companies can build a pipeline to tap the large reservoirs at Prudhoe Bay. The PG&E potential from this source is 225 million cubic feet per day.

Natural gas from these distant sources will prove costly. As for California, the gas supply is diminish-

ing. As producers dig deeper for available reserves and as pressures created by pricing policies for other gas supplies, the cost of California gas also will continue to rise.

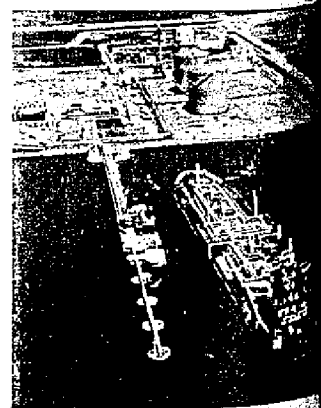
Conservation will continue to play an important role in the natural gas supply mix. But it cannot solve the whole problem.

That's why PG&E is doing its best to get sufficient gas to meet your needs.



CANADIAN gas line went in after clearing the way in Alberta. About 50% of gas came to PG&E's system; nearly half of the total PG&E customer

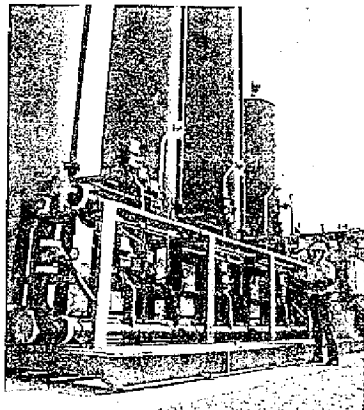
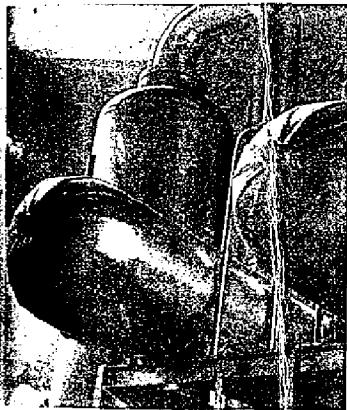
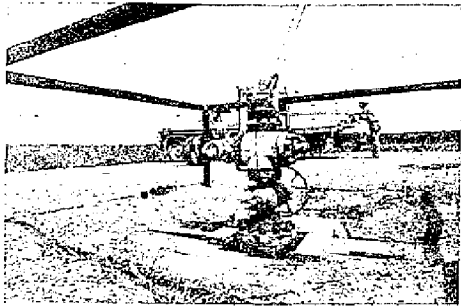
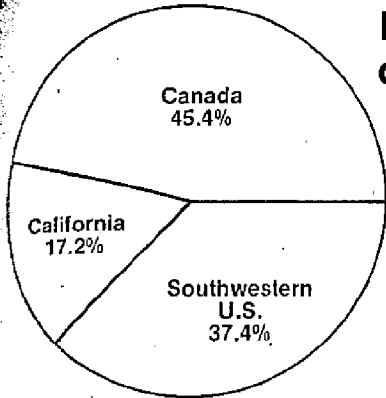
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## PG&E sources of natural gas

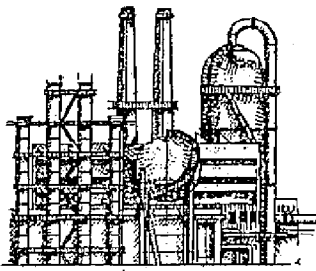


SCRUBBERS at compressor stations removed impurities from 310 billion cubic feet of gas from Southwest during 1979.

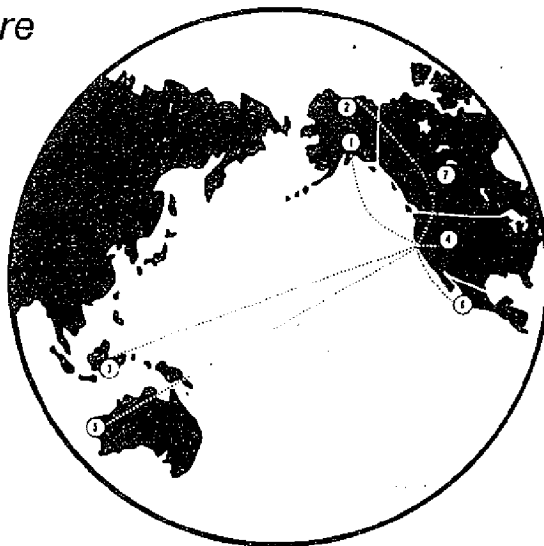
MOUNTAIN View sanitary landfill is tapped by wells for methane gas from decomposing matter.

CALIFORNIA wells like the two above will supply 143 billion cubic feet of gas this year to PG&E's customers, but in-state supplies are diminishing.

## possible sources of gas in the future



Alaska and Indonesia will supply gas for liquefaction to a terminal in Southern California. Gas may also be created from coal in the future.



- Legend:
- 1. South Alaska
  - 2. North Slope Prudhoe Bay
  - 3. Indonesia
  - 4. Drilling in the Rockies
  - 5. Australia
  - 6. Mexico
  - 7. Canada