CANADIAN GAS RESOURCES
AND THEIR UTILIZATION
by

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THANK YOU PROFESSOR CLARK - IT IS AN HONOUR AND A PRIVILEGE FOR ME ONCE AGAIN TO TAKE PART IN THIS NATURE, SCIENCE AND MAN COURSE AT QUEEN'S UNIVERSITY. WHEN I WAS A BOY I USED TO COME TO KINGSTON TWO OR THREE TIMES A YEAR TO VISIT MY MOTHER'S FAMILY, WHO WERE EARLY SETTLERS IN THIS AREA. AS I RECALL, THE TRIP USED TO TAKE 5 OR 6 HOURS AND WAS QUITE AN ORDEAL FOR MY FATHER WHO NOT ONLY HAD TO KEEP 4 RAMBUNCTIOUS BOYS FROM TEARING THE CAR APART, BUT DO ALL THE DRIVING, FIX SEVERAL FLAT TIRES ON ROUTE AND KNOW WHICH SERVICE STATION HAD THE BEST FACILITIES. AND AT THE END OF THE LONG, HARROWING DAY HE HAD TO FACE HIS IN-LAWS. HAPPILY TIMES HAVE CHANGED FROM THE GOOD OLD DAYS. TODAY I MADE THE TRIP IN ABOUT 2 1/2 HOURS WHILE LISTENING TO PLEASANT MUSIC ON THE RADIO, HAD NO FLAT TIRES TO FIX, FOUND EXCELLENT ACCOMMODATIONS, AND INSTEAD OF FACING STERN IN-LAWS, I HAVE THE PLEASURE OF SPEAKING TO YOU, LADIES AND GENTLEMEN.

AND MY MESSAGE THIS YEAR IS A LITTLE MORE CHEERING THAN THE ONE I DELIVERED LAST YEAR, FOR THE ENERGY OUTLOOK IN JANUARY 1975 WAS CONSIDERABLY MORE DEPRESSING THAN IT IS TODAY.

LAST YEAR AT THIS TIME THE NATURAL GAS INDUSTRY WAS BESET WITH ALL SORTS OF PROBLEMS WHICH, WHEN ALL MIXED TOGETHER, MEANT, BASICALLY THAT WE WERE GOING TO HAVE TO PAY MORE MONEY FOR OUR NATURAL GAS AND THAT IT COULD BE IN GENERAL SHORT SUPPLY A YEAR OR SO DOWN THE ROAD.

IN JANUARY OF 1976, THE SITUATION IS SOMEWHAT BETTER, BUT AT THE RISK OF BEING CALLED A PESSIMIST, I WOULD HASTEN TO CAUTION THAT WE ARE NOT OUT OF THE WOODS YET - NOT BY A LONG SHOT. FOR THIS IS A CRUCIAL TIME, FRAUGHT WITH ECONOMIC DIFFICULTIES, RECORD TRADE DEFICITS, UNEMPLOYMENT, INFLATION AND INCREASING SHORTAGES OF DOMESTIC ENERGY SUPPLIES. AND I WOULD LIKE TO DISCUSS WITH YOU TODAY THE PART ENERGY PLAYS IN THIS PROBLEM MIX, PARTICULARLY THOSE 2 FORMS WHICH ACCOUNT FOR ABOUT 75% OF ALL THE ENERGY USED BY CANADIANS - OIL AND GAS.

LET'S JUST BRIEFLY COMPARE THE NATURAL GAS SITUATIONS

OF ONE YEAR AGO AND TODAY, TO SEE WHERE WE STAND. LAST NEW YEARS' DAY,—THAT'S NEW YEARS' DAY OF 1975,—THERE WERE GAS SHORTAGES IN SOME AREAS OF THE COUNTRY, AND THE UTILITIES IN THOSE LOCALES WERE UNABLE TO SIGN ON ANY NEW CUSTOMERS, AND WERE CUTTING BACK ON THE SUPPLIES OF CERTAIN LARGE VOLUME INDUSTRIAL USERS. ALL UTILITIES IN CANADA, OUTSIDE OF ALBERTA, WERE SAYING THEY WOULD NOT BE IN A POSITION TO ATTACH NEW CUSTOMERS AFTER 1976 BECAUSE THE TRANSMISSION COMPANIES HAD TOLD THEM THEY COULDN'T ASSURE THEM SUFFICIENT QUANTITIES OF GAS TO LOOK AFTER THEIR EXISTING ACCOUNTS, LET ALONE ANY NEW CUSTOMERS.

THE PROVINCE OF ALBERTA, WHICH OWNS THE BAT AND BALL - IT SUPPLIES 85% OF ALL OF CANADIAN NATURAL GAS,—WAS STILL REFUSING TO ALLOW TRANSCANADA PIPELINES, THE SOLE TRANSPORTER OF NATURAL GAS TO MARKETS EAST OF ALBERTA, TO REMOVE NEWLY CONTRACTED SUPPLIES FROM THE PROVINCE UNLESS TRANSCANADA PAID THE PRODUCERS A HIGHER PRICE FOR THE GAS. AND AS MUCH AS I HATE TO SAY IT, BECAUSE IT IS MONEY OUT OF MY POCKET, I THINK THE CASE FOR HIGHER WELLHEAD PRICES HAS BEEN WELL AND TRULY PROVED. DESPITE WHAT SOME ECONOMIC JEREMIAHS ARE PROCLAIMING, HIGHER WELLHEAD PRICES WILL NOT TRIGGER A PRECIPITOUS SURGE IN NATIONAL ENERGY COSTS. AFTER ALL, DOUBLING THE PRICE OF VERMOUTH TODAY DOES NOT NECESSARILY MEAN THAT A MARTINI WILL COST TWICE AS MUCH TOMORROW. THE PROVINCE ALSO SAID IT WAS BUILDING UP A GAS BANK TO PROVIDE A FUEL AND FEEDSTOCK SUPPLY FOR WHEN ITS WORLD-SCALE PETROCHEMICAL INDUSTRY CAME ON STREAM.

ALBERTA MAINTAINED THAT LOW GAS PRICES CONTRIBUTED GREATLY TO THE UNPRECIDENTED GROWTH IN DOMESTIC DEMAND, IN COMPARISON TO OTHER ENERGY FORMS, WHILE PROVIDING THE PRODUCER WITH LITTLE OR NO INCENTIVE TO RISK CAPITAL IN THE SEARCH FOR MORE RESERVES.

THE PRODUCERS HAVE LONG BEEN SEEKING A HIGHER WELLHEAD PRICE FOR NATURAL GAS, CLAIMING THE INCREASED CASH FLOW IS NEEDED AS AN INCENTIVE FOR THEM TO SPEND LARGE AMOUNTS OF CAPITAL IN THE RISKY SEARCH FOR NATURAL GAS. THEY POINT OUT THE SEARCH FOR FOSSIL FUELS HAS MOVED FROM THE EASILY ACCESSABLE PLAINS AREA OF ALBERTA, WHERE SWEET GAS WAS FOUND AT REASONABLY SHALLOW DEPTHS, TO THE MORE DIFFICULT TERRAIN OF THE FOOTHILLS REGION OR THE NORTHERN AREAS OF THE PROVINCE WHERE THE PLAYS ARE DEEPER AND THE GAS FULL OF IMPURITIES. THE PRODUCERS SAY THAT ALTHOUGH TECHNOLOGY HAS IMPROVED THE CHANCES OF FINDING GAS, THE ONLY WAY

OF BEING SURE THE GAS IS THERE, IS TO DRILL. DRILLING COSTS HAVE TRIPLED AND QUADRUPLED IN THE LAST 5 YEARS, WHILE THE FINDING RATE HAS REMAINED RELATIVELY CONSTANT - 8 DRY HOLES TO EVERY ONE PRODUCING WELL IS A PRETTY GOOD RULE OF THUMB. WELLS IN ALBERTA THAT WERE COSTING $300,000 TO $500,000 FIVE YEARS AGO ARE NOW COMING IN AT TWO TO THREE MILLION DOLLARS.

THE MACKENZIE DELTA HOLDS THE RECORD FOR EXPENSIVE DRILLING, AND LAST MARCH STANDARD OIL'S UPLUK WELL BECAME CANADA'S COSTLIEST DRY HOLE. IT COST $7 MILLION BEFORE IT WAS ABANDONED - IT'S NAME SHOULD HAVE BEEN DOWNLUK. OFFSHORE DRILLING COSTS, INCLUDING THOSE FROM ARTIFICIAL ISLANDS, RANGE SUBSTANTIALLY HIGHER, AND DOME PETROLEUM LTD. ESTIMATES THE COST OF TWO WELLS TO BE DRILLED FROM SHIPS IN THE ARCTIC THIS SUMMER AT $60 MILLION - I HAVE A SNEAKING SUSPICION THAT INCLUDES THE COSTS OF THE SHIPS AND EVERYTHING ELSE CONNECTED WITH THIS PROJECT. EVEN SO, IT'S A PRICE THAT WOULD STAGGER EVEN NEIMAN-MARCUS WHICH HAS EXCELLED IN THE WORLD'S MOST EXPENSIVE "HIS" AND "HERS" CHRISTMAS PRESENTS FOR YEARS.

THESE SPIRALLING COSTS ARE PASSED ON THROUGH THE TRANSMISSION COMPANIES TO THE UTILITIES AND EVENTUALLY TO THE CONSUMER, YOU AND ME. THIS PASSING OF THE INCREASING BUCK IS CALLED "TRACKING", AND IS NOT AN AUTOMATIC THING FOR THE UTILITIES. EVEN THOUGH THEY HAVE TO PAY MORE FOR THEIR GAS SUPPLIES THEY CANNOT CHARGE THEIR CUSTOMERS MORE UNTIL THE PROVINCIAL ENERGY BOARD APPROVES THE INCREASE. THERE HAVE BEEN MANY OCCASIONS WHERE THE UTILITIES HAVE BEEN TURNED DOWN BY THE ENERGY BOARDS, OR NOT ALLOWED TO "TRACK" THE FULL INCREASE.

LAST YEAR THE FEDERAL GOVERNMENT ACCEPTED THE RECOMMENDATIONS OF BOTH THE NATIONAL ENERGY BOARD AND THE INDUSTRY THAT NATURAL GAS PRICES SHOULD REACH PARITY WITH THOSE OF DOMESTIC CRUDE OIL ON A BTU OR HEAT EQUIVALENT BASIS BY 1978. THIS HAS RESULTED IN A SHARP INCREASE IN THE PRICE OF NATURAL GAS FOR THE CONSUMER, BUT AS YET HAS NOT HAD AN APPRECIABLE EFFECT ON THE DEMAND BECAUSE GAS IS STILL PRICED 15% BELOW THAT OF OIL.

I BELIEVE SOME EXPLANATION IS NEEDED HERE BECAUSE THIS IS LEADING US INTO SOME PRETTY HEADY STUFF. IN CANADA, OIL VOLUMES ARE CALCULATED IN BARRELS CONTAINING 35 IMPERIAL GALLONS, WHILE NATURAL GAS IS MEASURED BY THE CUBIC FOOT.

COMPARING GALLONS AND CUBIC FEET IS LIKE COMPARING APPLES AND ORANGES, SO WE HAVE DECIDED ON THE HEATING VALUE OF AN EQUAL QUANTITY OF EACH FUEL AS THE COMMON DENOMINATOR. THAT'S THE BRITISH THERMAL UNIT, WHICH AS YOU ALL KNOW IS THE AMOUNT OF HEAT REQUIRED TO RAISE THE TEMPERATURE OF ONE POUND OF WATER THROUGH ONE DEGREE FARENHEIT.

NOW, ONE GALLON OF CRUDE OIL CONTAINS 165,000 BTU'S, WHILE ONE CUBIC FOOT OF NATURAL GAS CONTAINS ABOUT 1,000 BTU'S. THEREFORE, IF THE PRICE OF A GALLON AND A CUBIC FOOT ON A HEATING VALUE OR BTU BASIS IS TO BE EQUAL, THEN ONE GALLON OF OIL SHOULD COST AS MUCH AS 165 CUBIC FEET OF GAS. RIGHT NOW THE PRICE OF ONE GALLON OF OIL BUYS ABOUT 190 CUBIC FEET OF NATURAL GAS, BUT THE GOVERNMENT SAYS BY 1978 THIS 15% DIFFERENTIAL WILL DISAPPEAR.

YOU HAVE ALL READ IN THE PAPERS OF THE STARTLING PERCENTAGE PRICE INCREASE FOR GAS IN THE LAST TWO YEARS. THIS WAS BECAUSE GAS HAD A LONG WAY TO GO TO CATCH UP. IT WAS NOT 15% CHEAPER THAN OIL, BUT CLOSER TO 50% LESS EXPENSIVE.

IF THE OPEC (OIL PRODUCING EXPORTING COUNTRIES) CARTEL RAISES ITS PRICES, CANADIAN CRUDE WILL FOLLOW SUIT AND THE DISCREPANCY BETWEEN DOMESTIC OIL AND GAS PRICES WILL WIDEN AGAIN, RESULTING IN MORE SHARP INCREASES FOR GAS.

DELIVERABILITY OF NATURAL GAS HAD FALLEN OFF MUCH MORE SHARPLY THAN ANYONE HAD EXPECTED. DELIVERABILITY IS AN OLD WORD IN THE INDUSTRY, BUT IT WAS ALMOST FORGOTTEN IN THE DAYS WHEN WE WERE FINDING GAS FASTER THAN WE COULD USE IT UP. DELIVERABILITY, AS DEFINED BY THE NATIONAL ENERGY BOARD, MEANS THE RATE AT WHICH ESTABLISHED RESERVES CAN BE PRODUCED IN MARKETABLE FORM. BUT WHAT IT REALLY MEANS IN LAYMAN'S TERMS IS THE LENGTH OF TIME IT TAKES TO GET GAS OUT OF THE GROUND, PROCESS IT TO REMOVE ALL THE IMPURITIES, TRANSPORT IT THROUGH A PIPELINE, PASS IT THROUGH UTILITY DISTRIBUTION LINES AND GET IT TO YOUR FURNACE OR RANGE. THE DELIVERABILITY DROP-OFF WAS CAUSED PRIMARILY BY TWO THINGS. FIRST, BECAUSE WE WEREN'T FINDING NEW RESERVES FAST ENOUGH, WE WERE DRILLING ADDITIONAL WELLS IN ESTABLISHED FIELDS CAUSING A MORE RAPID DEPLETION OF THESE RESERVOIRS, AND SECONDLY, WE WERE TRYING TO SATISFY THE GROWING DOMESTIC DEMAND WHICH, UNFORTUNATELY, HAD BEEN ALLOWED TO SWELL UNCHECKED. THE OLD ADAGE, "YOU CAN'T GET BLOOD FROM A STONE" - OR IF YOU HAPPEN TO COME FROM SOME

PARTS OF DOWN EAST WHERE THEY SAY - "YOU CAN'T GET BLODD FROM A TURNIP" - IS AS TRUE IN THE NATURAL GAS INDUSTRY AS IT IS ANYWHERE ELSE. ONCE A RESERVOIR HAS BEEN PUMPED DRY, THERE IS NO WAY YOU CAN GET ANY MORE GAS FROM IT.

EXPLORATION IN ALBERTA HAD DROPPED OFF SIGNIFICANTLY IN 1974, AND THIS SITUATION WAS EXPECTED TO CONTINUE DURING 1975. THIS WAS DUE INITIALLY TO INCREASED EXPLORATION ACTIVITY AND SPENDING IN THE ARCTIC, AND THE WITHDRAWAL OF WESTERN CANADIAN DRILLING RIGS TO FIELDS IN THE UNITED STATES AND OTHER PARTS OF THE WORLD WHERE THE FINANCIAL INCENTIVES WERE SUBSTANTIALLY GREATER.

IN JANUARY OF 1975 WE WERE ALSO FACED WITH CONTRACTED EXPORT COMMITMENTS WHICH AMOUNTED TO OVER 45 PER CENT OF OUR TOTAL YEARLY GAS SUPPLY. WE WERE IN THE POSITION OF HAVING ENTERED INTO LONG TERM CONTRACTS IN THE PAST WHEN THE GAS SITUATION LOOKED MORE ROSEY, RUNNING TO SOME ONE TCF PER YEAR, WITH ABOUT 14 TCF STILL COMMITTED TO EXPORT - THAT WERE NOT NOW SURPLUS TO CANADIAN REQUIREMENTS. WE FOUND OURSELVES IN THE POSITION OF HAVING TO SATISFY OUR OWN NEEDS WITH WHAT WAS LEFT OVER AFTER WE HAD FULFILLED OUR EXPORT OBLIGATIONS.

SO, YOU CAN SEE THE ENERGY OUTLOOK, AS FAR AS NATURAL GAS WAS CONCERNED, WAS ANYTHING BUT ENCOURAGING AS WE ENTERED 1975. BUT CERTAIN EVENTS TRANSPIRED AS THE YEAR PROGRESSED WHICH MAKE THE PRESENT SITUATION FAR MORE COMFORTING.

THE INCREASING WELLHEAD PRICE FOR GAS AS A RESULT OF AN OTTAWA/ALBERTA PRICING AGREEMENT, WHICH ALSO INCLUDED A MORE STABLE ROYALTY AND TAXATION SYSTEM, PROVIDED THE PRODUCER WITH THE INCENTIVE HE HAD LACKED IN PREVIOUS YEARS TO SEARCH FOR NEW SOURCES OF NATURAL GAS AND TO DEVELOP KNOWN FIELDS WHICH PREVIOUSLY WERE CONSIDERED TO BE BEYOND ECONOMIC REACH. THIS INTENSIFICATION OF EXPLORATION AND DEVELOPMENT ACTIVITY IN ALBERTA LAST YEAR LED TO THE ADDITION OF SOME 2.5 TCF TO OUR ESTABLISHED RESERVES.

MY SECRETARY KEEPS TELLING ME THAT NOBODY KNOWS WHAT A TRILLION OF ANYTHING LOOKS LIKE, LET ALONE A TRILLION CUBIC FEET OF AN INVISIBLE GAS. HOW BEST CAN I DESCRIBE IT?...YOU ALL KNOW WHAT A CNR COAL CAR LOOKS LIKE, WELL, ONE TRILLION CUBIC FEET OF GAS WOULD FILL 5,500,000 (5 1/2 MILLION) OF THESE COAL CARS, AND IF THEY WERE LAID END TO END, LIKE ALL THE GIRLS FROM VASSAR, THEY WOULD MAKE UP A TRAIN BEGINNING 1,200 MILES OUT IN THE ATLANTIC, EAST OF ST. JOHN'S, NEWFOUNDLAND, AND STRETCHING CLEAR ACROSS

CANADA TO A POINT 1,200 MILES WEST OF VICTORIA IN THE PACIFIC OCEAN.

THE ALBERTA GOVERNMENT, WHICH NOW BUYS ALL PROVINCIALLY-PRODUCED GAS AND SELLS IT TO TRANSMISSION COMPANIES, LAST YEAR AGREED TO ALLOW TRANSCANADA PIPELINES TO PURCHASE AND REMOVE AN ADDITIONAL 163 BCF/Y OF ALBERTA GAS TO MARKETS EAST OF ALBERTA.

DUE TO A SLOW DOWN OF EXPLORATION ACTIVITIES IN THE MACKENZIE DELTA AREA, SEVERAL RIGS AND SKILLED CREWS WERE AVAILABLE FOR WORK IN ALBERTA, AND THIS INCREASED SEARCH-POWER AIDED IN THE DEVELOPMENT OF INCREASED RESERVES FROM UNCONNECTED AREAS AND THE DISCOVERY OF NEW RESERVOIRS.

ALL OF THIS ACTIVITY IN ALBERTA WAS REFLECTED ON THE MARKETS OF THE EAST DURING THE LATTER PART OF 1975. TRANSCANADA PIPELINES INFORMED ITS CUSTOMERS, THE UTILITY COMPANIES, THAT IT HAD ADEQUATE SUPPLIES TO HANDLE THEIR REQUIREMENTS THROUGH THIS HEATING SEASON AND THE NEXT, WITH A SMALL AMOUNT OF GAS LEFT OVER FOR LIMITED GROWTH IN ALL BUT THE LARGE INDUSTRIAL FIELD. THIS WAS A ONE-YEAR IMPROVEMENT OVER 1975.

DURING LAST YEAR THE NATIONAL ENERGY BOARD COMPLETED ITS EXHAUSTIVE STUDY INTO NATURAL GAS SUPPLY AND DEMAND, AND IN ITS REPORT RELEASED LAST JULY, PREDICTED THAT GAS PRODUCTION FROM THE CONVENTIONAL SOURCES OF WESTERN CANADA WILL PEAK IN 1980 AND GRADUALLY DECLINE THEREAFTER.

THE BOARD'S FINDINGS ARE, I BELIEVE, BEST SUMMARIZED BY THE FOLLOWING PARAGRAPH FROM ITS REPORT, WHICH I QUOTE : "THE CURRENT INABILITY OF SUPPLY TO MEET ALL REQUIREMENTS FOR CANADIAN NATURAL GAS IS LIKELY TO CONTINUE AT LEAST UNTIL SUPPLIES FROM THE FRONTIER BECOME AVAILABLE. WITHOUT SUBSTANTIAL SUPPLIES FROM CANADA'S FRONTIER AREAS, GROWING DOMESTIC REQUIREMENTS COULD NOT BE SATISFIED BEYOND 1984, EVEN IF ALL EXPORTS WERE DIVERTED TO DOMESTIC MARKETS AS REQUIRED. WITHOUT SUBSTANTIAL FURTHER DEVELOPMENT OF THE CONVENTIONAL PRODUCING AREAS THEY COULD NOT BE SATISFIED BEYOND 1979 EVEN IF EXPORTS WERE DIVERTED TO DOMESTIC MARKETS AS REQUIRED TO MEET DOMESTIC DIFICIENCIES."

WHAT THE BOARD, IN EFFECT, IS SAYING, IS THAT OUR PRESENT GAS SUPPLIES ARE INADEQUATE TO MEET THE ANTICIPATED GROWTH IN CANADIAN DEMAND PLUS OUR EXISTING EXPORT COMMITMENTS. ALTHOUGH THE CURRENT SHORTAGES ARE RELATIVELY SMALL, THEY WILL INCREASE SIGNIFICANTLY OVER THE NEXT FEW YEARS. ADDED TO THIS PROBLEM IS THE CURRENT AND INCREASING MONETARY DEFICIT CANADIANS FACE WITH

RESPECT TO OIL SUPPLIES. THIS HAS A VERY SOBERING CONSEQUENCE FOR THE ECONOMY AND, INDEED, ALL CANADIANS.

EVERY AVAILABLE FORECAST, FROM GOVERNMENT, INDUSTRY AND PRIVATE SECTOR GROUPS, INDICATES THAT THE SHORTFALL OF GAS AND DOMESTIC OIL WILL CONTINUE TO INCREASE, EVEN WITH STRINGENT CONSERVATION METHODS TO REDUCE ENERGY WASTE.

ALL AGREE CANADA IS FACING A DOMESTIC OIL SHORTAGE, AND DEMAND WILL PROBABLY EXCEED DOMESTIC SUPPLY FOR AT LEAST THE NEXT 10 YEARS. IN THE PAST TWO YEARS CANADA HAS SWITCHED FROM BEING A NET EXPORTER OF OIL TO BEING A NET IMPORTER OF OIL. PRODUCTION FROM PROVED RESERVES IN THE CONVENTIONAL REGIONS, ALBERTA, BRITISH COLUMBIA AND SASKATCHEWAN IS DECLINING, AND LAST YEAR DIPPED BY 69 MILLION BARRELS, OR ABOUT 16%.

CANADA ALREADY SPENDS MORE ABROAD THAN IT EARNS - SOME $5 BILLION LAST YEAR, AND THE IMPORTATION OF OIL IS A BIG FACTOR IN THIS TRADE DEFICIT. IN 1974 CANADA EARNED SOME $800 MILLION IN NET EXPORT SALES OF OIL. LAST YEAR WE HAD A NEGATIVE TRADE BALANCE IN OIL OF $300 MILLION. THIS MEANS THAT IN ONE YEAR OUR BALANCE OF OIL TRADE SUFFERED A ONE-BILLION DOLLAR REVERSAL. IN 1976 THIS WILL GROW TO ABOUT $1.3 BILLION FOR OIL IMPORTS, AND THE PETRO-DEFICIT WILL RISE TO ABOUT $4.7 BILLION A YEAR 10 YEARS FROM NOW. CUMULATIVELY IN THE NEXT DECADE CANADA'S NEGATIVE TRADE BALANCE IN OIL ALONE WILL EXCEED $28 BILLION.

THIS 10 YEAR ESTIMATE OF OIL TRADE IS TAKEN FROM THE RECENT NATIONAL ENERGY BOARD PROJECTIONS OF OIL DEMAND/REQUIREMENTS AND ANTICIPATED SUPPLIES FROM WESTERN CANADA, AND IS BASED ON 4 CRITICAL ASSUMPTIONS. FIRST, THAT CONSERVATION METHODS WILL REDUCE THE PROJECTED 1985 OIL DEMAND BY 20%. SECOND, THAT THE COST OF IMPORTED OIL WILL NOT INCREASE BEYOND THE PRESENT WORLD PRIVE LEVEL OF $11.51 PER BARREL. THIRD, THAT AGRESSIVE EFFORTS TO FIND AND DEVELOP NEW OIL SUPPLIES IN WESTERN CANADA WILL BE MAINTAINED AND WILL BE SUCCESSFUL, AND FOURTH, THAT A NEW $2 BILLION ATHABASCA OIL SANDS PLANT WILL BE PLACED ON STREAM EVERY THREE YEARS STARTING IN 1979.

SO, EVEN IF ALL OF THESE FACTORS WORK FOR US - WHICH THEY WON'T - WE WILL STILL BE FACED WITH HAVING TO PAY CLOSE TO $5 BILLION A YEAR IN NET OIL IMPORTS BY 1985.

RECENTLY, PRIME MINISTER TRUDEAU TOLD A NATIONAL RADIO AUDIENCE "WE'LL HAVE TO REALIZE THAT, BECAUSE WE ARE PAYING MORE

FOR OUR IMPORTED OIL, WE'LL HAVE TO BUY LESS OF OUR CARS, FRIGIDAIRES, HOUSES, WHATEVER IT IS...IT'S MONEY OUT OF THE COUNTRY. THEREFORE, CANADIANS ARE LESS RICH, AND LET'S NOT ALL PRETEND THAT WE'RE GOING TO BE ALL LIVING AS HIGH OFF THE HOG." WE ARE CURRENTLY IMPORTING PER CAPITA MORE GOODS AND SERVICES THAN ANY OTHER NATION - THREE TIMES AS MUCH AS AMERICANS OR JAPANESE, AND 50 PER CENT MORE THAN THE CITIZENS OF ENGLAND AND FRANCE. AS THE PRIME MINISTER POINTED OUT, WE CAN'T KEEP GOING ON THIS WAY ANY LONGER.

NATURAL GAS FROM THE FRONTIER AREAS IS GOING TO BE NEEDED AS SOON AS POSSIBLE TO HELP MEET THIS SHORTFALL AND PARTIALLY OVERCOME THIS FRIGHTENING TRADE DEFICIT. AND GAS FROM THE MACKENZIE DELTA-BEAUFORT SEA AREA IS OUR BEST BET TO ALLEVIATE THIS SITUATION SOONEST.

A DELTA PIPELINE WOULD PROVIDE CANADIAN CUSTOMERS WITH AN INITIAL DAILY SUPPLY OF NATURAL GAS, EQUAL TO 225,000 BARRELS PER DAY OF OIL. THIS IS APPROXIMATELY THE SAME AS THE COMBINED QUANTITY OF CRUDE OIL CONSUMED EACH DAY IN BRITISH COLUMBIA, SASKATCHEWAN AND MANITOBA. BY DISPLACING THIS AMOUNT OF CRUDE OIL, DELTA GAS WILL REDUCE CANADA'S OIL IMPORT BILL BY SOME $1 BILLION A YEAR - BASED ON THE PRESENT WORLD PRICE OF $11.51 PER BARREL - IN THE FIRST YEARS OF ITS OPERATION.

AND WITH THE DEVELOPMENT OF MORE NATURAL GAS RESERVES IN THE DELTA, PIPELINE VOLUMES WILL CLIMB TO 2.25 BCF/D WHICH WILL REDUCE THE IMPORTATION OF FOREIGN OIL EVERY DAY BY 400,000 BARRELS AND RESULT IN AN ANNUAL SAVING OF $1.6 BILLION.

IF THE CANADIAN ARCTIC GAS PROPOSAL WINS NATIONAL ENERGY BOARD APPROVAL, THE MOVING OF U.S. GAS FROM ALASKA WILL CONSTITUTE A TRANSPORTATION SERVICE WHICH WOULD GENERATE NET EARNINGS FOR CANADA OF APPROXIMATELY $400 MILLION PER YEAR.

THESE TRANSPORTATION CHARGES, COMBINED WITH THE DISPLACEMENT OF OIL IMPORTS BY DELTA GAS, COULD IMPROVE CANADA'S BALANCE OF PAYMENTS POSITION BY AS MUCH AS $2 BILLION PER YEAR BY 1985. TO PUT THIS IN PERSPECTIVE, IT WOULD EQUAL THE VALUE OF ALL CANADIAN WHEAT SALES - DOMESTIC AND EXPORT IN 1974. AND THIS CONTRIBUTION TO THE NATIONAL BALANCE OF PAYMENTS WOULD BE ACHIEVED WITH NO INCREASE IN THE EXPORT OF CANADIAN RESOURCES.

IT WILL REQUIRE FOUR OR FIVE YEARS AFTER ALL GOVERNMENT AUTHORIZATIONS HAVE BEEN SECURED BEFORE A PIPELINE FROM THE NORTH

COULD BE COMPLETED, WHICH MEANS THAT IF DELTA GAS IS TO CONTRIBUTE TO OUR NATIONAL WELL-BEING BY 1980, ALL GOVERNMENT AUTHORIZATION MUST BE FORTHCOMING WITHIN THE NEXT 12 MONTHS.

I WOULD LIKE NOW TO TAKE A FEW MINUTES TO COMPARE THE VARIOUS PROPOSALS FOR BRINGING FRONTIER GAS TO MARKET. TWO GROUPS ARE MAKING PLANS TO BRING DELTA GAS TO SOUTHERN CANADA. THE CANADIAN ARCTIC GAS PIPELINE PROPOSAL WOULD TRANSPORT BOTH PRUDHOE BAY GAS FROM ALASKA AND DELTA GAS IN A COMMON 48" PIPELINE. THEY MAINTAIN THAT THE RESERVES IN ALASKA OF SOME 24 TCF TOGETHER WITH THE 6 TO 7 TCF NOW PROVEN IN THE DELTA, ARE SUFFICIENT TO DEMONSTRATE THE FEASIBILITY AND THE FINANCING OF THEIR PROJECT. THEY CLAIM THE PROPOSED ARCTIC GAS PIPELINE CONNECTING THE NATURAL GAS RESERVES IN THE MACKENZIE DELTA WITH MARKETS FROM VANCOUVER TO MONTREAL CAN REDUCE THE PROJECTED OIL AND GAS DEFICIT IN TWO WAYS. FIRST, THE VOLUME OF DELTA GAS WILL DISPLACE THE NEED TO IMPORT CONSIDERABLE VOLUMES OF CRUDE OIL. SECOND, CANADA WILL EARN FOREIGN EXCHANGE FROM THE TRANSPORTATION OF ALASKAN GAS TO U.S. MARKETS SIMULTANEOUSLY WITH CANADIAN GAS TO CANADIAN MARKETS VIA THE SAME PIPELINE.

CANADIAN ARCTIC GAS PLANS TO TRANSPORT 1.25 BCF OF DELTA GAS PER DAY IN ITS FIRST FULL YEAR OF OPERATION AND THIS WILL INCREASE TO 2.25 BCF AS ADDITIONAL SUPPLIES BECOME AVAILABLE. THIS AMOUNTS TO OVER 800 BCF A YEAR WHICH IS MORE THAN DOUBLE THE PRESENT ANNUAL CONSUMPTION RATE OF THE PROVINCE OF ONTARIO WHICH CURRENTLY USES 50 PER CENT OF ALL OF CANADA'S NATURAL GAS.

THE FOOTHILLS PIPELINE PROJECT CALLS FOR THE CONSTRUCTION OF AN ALL-CANADIAN LINE, WHICH THEY CALL THE "MAPLE LEAF LINE", THROUGH THE DELTA TO TRANSPORT ONLY CANADIAN GAS TO ONLY CANADIAN MARKETS. WHILE THE FOOTHILLS PEOPLE AGREE THE 6 TO 7 TCF OF PROVEN RESERVES IN THE DELTA AREA ARE INSUFFICIENT TO JUSTIFY CONSTRUCTION AT THIS TIME, THEY BELIEVE ADDITIONAL RESERVES WILL BE IDENTIFIED ONCE FEDERAL APPROVAL IS GRANTED FOR THE LINE. THEY POINT OUT THAT NATURAL GAS RESERVES IN ALBERTA AT THE TIME OF THE GREAT PIPELINE DEBATE IN THE 1950'S WERE INSUFFICIENT TO JUSTIFY THE COST OF THE TRANSCANADA PIPELINE, BUT THAT ONCE THE PIPELINE HAD BEEN BUILT, PRODUCERS QUADRUPLED THE RESERVES IN LESS THAN A DECADE.

FOOTHILLS POINTS OUT THEIR 42" DIAMETER LINE WILL BE CONSIDERABLY LESS EXPENSIVE THAN THE ARCTIC GAS PROJECT BECAUSE IT

IS 1900 MILES SHORTER, AND BECAUSE IT WILL USE THE EXISTING RIGHT OF WAYS OF ALBERTA GAS TRUNK LINE CO. LTD. THROUGH THE PROVINCE OF ALBERTA.

IN THEIR APPLICATION TO THE NATIONAL ENERGY BOARD, FOOTHILLS CLAIMS IT WILL BE ABLE TO MOVE DELTA GAS TO CANADIAN MARKETS AT A 10 PER CENT LOWER DELIVERY COST THAN ITS RIVAL. IT FURTHER STATES THAT IF CANADIANS ARE CALLED ON TO SHARE THE COSTS OF THE ARCTIC GAS SPUR LINE FROM ALASKA, THE SAVING WOULD RISE TO 20 PER CENT A YEAR.

IT IS PERFECTLY OBVIOUS THAT THE NATIONAL ENERGY BOARD, WHICH IS CURRENTLY CONDUCTING HEARINGS INTO THE NEED FOR CONSTRUCTION OF A MACKENZIE VALLEY PIPELINE, WILL APPROVE ONLY ONE OF THE APPLICATIONS.

EITHER FOOTHILLS OR CANADIAN ARCTIC GAS WILL GET THE OFFICIAL NOD, AND IT CAN ONLY BE HOPED THIS NOD WON'T BE TOO LONG IN COMING.

CANADIAN ARCTIC GAS IS PROBABLY MORE CONCERNED OVER EXCESSIVE REGULATORY DELAYS, BECAUSE OF A RIVAL PROJECT IN THE UNITED STATES TO MOVE ALASKAN GAS TO U.S. MARKETS. THE EL PASO NATURAL GAS CO. OF EL PASO TEXAS IS ALREADY SEEKING PERMISSION TO TRANSPORT THE PRUDHOE BAY GAS ACROSS ALASKA BY PIPELINE, LIQUIFY IT AND MOVE IT BY LNG TANKER TO CALIFORNIA PORTS. IF CANADA DRAGS ITS FEET ON A DELTA PIPELINE, U.S. AUTHORITIES COULD GIVE EL PASO THE GO AHEAD WHICH WOULD JUST ABOUT NULLIFY THE CANADIAN ARCTIC GAS PROJECT, AND PUSH BACK THE ENTIRE CANADIAN DELTA PIPELINE PROGRAMME BY AS MUCH AS 5 YEARS. IT IS INTERESTING TO NOTE THAT TO DATE, NO SIZEABLE OIL POOLS HAVE BEEN FOUND IN THE WESTERN ARCTIC, ALTHOUGH HOPES ARE HIGH THAT OIL WILL BE FOUND THERE IN ABUNDANCE.

THE OTHER NORTHERN FRONTIER EXPLORATION WHICH IS COMMANDING CONSIDERABLE INTEREST IS THE SEARCH FOR OIL AND GAS IN AND AROUND THE ISLANDS OF THE HIGH ARCTIC. WHILE THE PRESENT PROVEN GAS RESERVES IN THIS REGION ARE ABOUT DOUBLE THOSE DISCOVERED IN THE DELTA AREA, IT HAS BEEN ESTIMATED THAT TWICE AS MUCH WILL HAVE TO BE FOUND TO JUSTIFY A PIPELINE TO THE MAINLAND. THE COMPANIES ACTIVELY ENGAGED IN THIS ARCTIC SEARCH HAVE FORMED THE POLAR GAS GROUP TO RESEARCH THE FEASIBILITY OF BUILDING A NATURAL GAS PIPELINE IN THIS FORMIDABLE REGION. PANARCTIC OILS LTD., ONE OF THE POLAR GAS GROUP, RECENTLY HIT A MOST PROMISING OIL POOL

AND IS CURRENTLY CARRYING OUT DELINEATION ACTIVITY TO DETERMINE ITS SIZE. FROM ALL REPORTS TO DATE IT IS THE LARGEST OIL FIND EVER DISCOVERED IN ANY AREA OF THE ARCTIC. PANARCTIC IS PLANNING TO MOVE THIS OIL, IF VOLUMES ARE PROVEN, TO MARKET BY TANKER.

OUR OTHER FRONTIER AREA, OFF THE EAST COAST, HAS BEEN RELATIVELY QUIET OF LATE. DRILLING IS GOING ON AND SOME OIL AND GAS IS BEING FOUND, BUT NO RESERVOIRS OF COMMERCIAL SIGNIFICANCE HAVE BEEN DISCOVERED IN THE PAST YEAR. EXPLORATION ACTIVITY IS BEING CONCENTRATED IN THE NORTHERN PARTS OFF LABRADOR AND ENTERING DAVIS STRAIT AND BAFFIN BAY. EARLIER ENCOURAGEMENT ON THE LABRADOR SHELF, THE SCOTIAN SHELF, THE GRAND BANKS AND THE GULF OF ST. LAWRENCE HAS FAILED TO RESULT IN SIGNIFICANT DISCOVERIES OF OIL OR GAS AND MANY OF THE MAJOR PRODUCERS HAVE DISCONTINUED THEIR EASTERN OFFSHORE ACTIVITIES.

YOU WILL HAVE NOTICED I'VE CONFINED THE BULK OF MY REMARKS TO NATURAL GAS. I HAVE REFRAINED FROM DELVING INTO THE OIL SITUATION BECAUSE ALL I KNOW ABOUT OIL IS WHAT I READ IN THE NEWSPAPERS. I WOULD IMAGINE THAT DURING THIS NATURE, SCIENCE AND MAN COURSE YOU HAVE HAD, OR WILL BE HAVING QUALIFIED OIL MEN WHO HAVE THE SKILL TO PAINT THE OIL PICTURE MUCH MORE VIVIDLY THAN I.

AS I UNDERSTAND IT, CANADA HAS REDUCED ITS OIL EXPORTS TO THE UNITED STATES TO 460,000 BARRELS A DAY, SINCE LAST YEAR, A REDUCTION OF 250,000 BARRELS WHICH WILL EVENTUALLY BE DIVERTED EASTWARD AND WILL FLOW THROUGH THE SARNIA-MONTREAL PIPELINE SOMETIME THIS YEAR TO MARKETS EAST OF THE OTTAWA VALLEY. AS YOU NO DOUBT KNOW, PRIOR TO THE OPEC OIL EMBARGO OF 2 YEARS AGO AND THE QUADRUPLING OF THE PRICE OF FOREIGN CRUDE, CANADA IMPORTED VENEZUELIAN OIL TO SATISFY THE MARKETS OF THE MARITIMES AND QUEBEC, WHILE THE REST OF CANADA USED DOMESTIC WESTERN SUPPLIES. THESE IMPORTS LAST YEAR WERE IN THE MAGNITUDE OF 800,000 BARRELS A DAY, AND AT $11.51 A BARREL , THAT'S A LOT OF MONEY. THE QUARTER OF A MILLION BARRELS OF CANADIAN CRUDE WHICH WILL FLOW THROUGH THE NEW PIPELINE WILL SELL FOR $8.50/BBL AND MEANS A SAVING OF $6 1/2 MILLION IN NEGATIVE OIL TRADE.

IT IS THEREFORE ESSENTIAL THAT THE SEARCH FOR OIL BE ACCELERATED IN CANADA, AND THAT EVERY EFFORT BE MADE TO INCREASE THE EXTRACTION OF CRUDE FROM THE OIL RICH TAR SANDS OF ALBERTA AND SASKATCHEWAN.

THERE IS NO DOUBT THE GROWING CANADIAN DEMAND FOR FUEL WILL MAKE IT POSSIBLE TO MOUNT COSTLY FRONTIER EXPLORATION AND DEVELOPMENT PROGRAMMES TO SUPPLY DOMESTIC MARKETS-EXCLUSIVELY. PREVIOUSLY CANADIAN RESOURCE DEVELOPMENT HAD HINGED TO A GREAT EXTENT ON EXPORT OUTLETS TO PERMIT EXPLORATION OF REMOTE AREAS. AS FAR AS NATURAL GAS IS CONCERNED THE DOMESTIC MARKET IS BECOMING SO LARGE THAT CANADIAN CONSUMPTION IS REPRESENTING AN EVER-INCREASING PERCENTAGE OF PRODUCTION.

WELL, LADIES AND GENTLEMEN, I HOPE THIS RATHER RAMBLING ACCOUNT OF THE CANADIAN OIL/GAS ENERGY SITUATION HAS HELPED RATHER THAN CONFUSED YOU. THERE HAS BEEN A MARKED CHANGE IN VIEWS DURING THE PAST YEAR. AS DONALD MACDONALD, OUR FINANCE MINISTER AND FORMER ENERGY CZAR PUT IT RECENTLY, "WE HAVE LEARNED FROM PAST EXPERIENCE IN THE PETROLEUM INDUSTRY THAT, WHILE FIGHTING MAY BE MORE EMOTIONALLY SATISFYING, THERE ARE BETTER WAYS TO RUN THE ECONOMY."

NOW, IF ANY ONE HAS ANY QUESTIONS, I'LL DO MY BEST TO ANSWER THEM, AND THANK YOU FOR YOUR ATTENTION.