

whether the west-to-east gas line should be extended further east is another question now before the National Energy Board.

Coal is another resource that we have in abundance, perhaps enough to last us hundreds of years. British Columbia, Alberta, Saskatchewan and Ontario are all planning to increase electric power output with coal. Production, now 33 million short tons, could more than double by 1990.

But that growth is up against serious constraints: soil erosion and water pollution from surface mining; a possible shortage of labour in a hazardous occupation; a costly haul by rail from western mines to eastern plants; thermal heat pollution; the acid rain that's killing our lakes; and carbon dioxide emissions, the so-called greenhouse effect, which some scientists say could melt the icecaps, flooding all coastal cities. As one wit puts it: "Coal is the answer — as long as you don't mine it or burn it."

Atomic energy

Doubling atomic energy is feasible, both technically and economically. We have what we think is the safest and most efficient of reactors and 10 per cent of the world's known uranium, enough to satisfy our need for electricity for a century. But nuclear power provides only 3.3 per cent of our energy, and a lot of people see it as a kind of Pandora's box, releasing thousand-year problems: low-level radioactive water and highly radioactive fission products. We have to find the wisest way of handling nuclear waste, so we're setting up a Parliamentary nuclear enquiry to lay down the guidelines for safe and acceptable development.

And nature has left us another legacy: a trillion barrels of heavy oil mixed with sand and clay in the Athabasca, Cold Lake and Lloydminster areas. But it has to be mined, or coaxed out with heat, and that's neither cheap nor easy. It took Great Canadian Oil Sands ten years of losses to get out of the red. The Syncrude plant was costed six years ago at \$500 million, and by the time it was built last year it had cost five times as much — and still it hasn't met its output targets.

But the Government is allowing heavy oil to sell at world prices, and Imperial Oil and Shell are both planning oil sands plants costing nearly \$5 billion each. If they go ahead — and I think they will — I think they'll be constrained not only by

new technology, but by shortages of engineers, skilled labour and heavy equipment. By 1990, nevertheless, we expect to offset a possible drop of some 700,000 barrels a day of conventional oil with some 500,000 barrels a day of synthetic crude.

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All these options...have their uncertainties, economic or social, or both. But a breakthrough can't be ruled out. Nor can a major new oil strike. Exploration for oil is at record levels, stimulated by higher prices and various government incentives that allow high-income investors to write off from 90 to 104 cents for every dollar spent drilling. It's produced oil shows off the Arctic Islands, Nova Scotia and Labrador, a half-a-billion-barrel field in southern Alberta, and what may be an important find in the Beaufort Sea. But the cost of frontier drilling can run three times the cost in Alberta. Production problems are staggering, environmental problems unsolved, and it could take a decade to get oil out.

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Immediate source available

Fortunately, we have an immediate source, the biggest reserve in the country, and largely untapped. It requires no unproven technology. It doesn't pollute. It involves no risk. It could save as much as 50 per cent of our annual energy bill, and up to \$50 billion in capital costs over 15 years — though I must admit my hopes don't run that high. It's the quickest and cheapest way to reduce our dependence on foreign oil. It's the cornerstone of our policy.

I'm speaking, of course, of conservation.

There's no sense to an energy policy that doesn't start with conservation....

Conservation doesn't mean walking instead of riding, though that might not hurt some of us either. But do we have to waste gasoline with poorly-tuned engines, soft tires, "jackrabbit" starts, high speeds, and engines left on idle? Do we really need the power of 350 horses to drive to work or pick up a pack of cigarettes at the corner? Transportation uses nearly half the oil consumed in Canada and almost 80 per cent of this is used by cars and trucks. Better maintenance, better driving, and a faster switch away from big cars could save 20 to 30 per cent of that oil.

Housing is another area where big sav-

ings are possible. Our 7.5 million homes take 20 per cent of our energy consumption and something like half that energy is wasted. If we all set our thermostats by day at 68 degrees Fahrenheit and turned them down five or six degrees at night; if we lowered our hot water settings from 150 to 110, which will give us water as hot as we normally need; if we weather-stripped around windows and doors, tuned up our furnaces, caulked all cracks and increased our insulation — using government grants to reduce insulation costs for houses built before 1961 — our \$5-billion-a-year home energy bill could be sliced in half — half the equivalent of 200 million barrels of oil a year.

Most commercial buildings are usually overheated and overcooled and their high-level lighting gives off so much heat that air conditioning costs are doubled. Most office towers are nearly empty by five o'clock yet they still go on drawing enough power to supply a fair-sized city. There's more spare energy in buildings than all our atomic plants produce.

...Throughout the Federal Government last year, energy savings were \$30 million, and with additional investment we think we can more than triple that.

Industry takes 40 per cent of the total energy used and 10 per cent of that could be saved by such simple housekeeping measures, more by such things as heat pumps, equipment for using waste heat and automated controls, switches that turn off heaters when loading doors are open, timers that shut down boilers at night and restart them in the morning. The forest industry has enough waste wood piling up around its mills to generate all its own energy — 10 per cent of all industry needs. In 14 industry sectors, task forces have set conservation targets, and some sectors have already surpassed them. One steelmaker insulated a line carrying preheated combustion air; it cost \$330,000 and saves \$900,000 a year.

Possibility of legislation

Conservation can work. It has to. We can't meet our goals and commitments unless we can tap that huge pool of energy waste. But it calls for a change of methods. Most of all, a change of mind. Since frontier days we've squandered resources because they were cheap and plentiful. Unless we can break old habits we may need new legislation to back up our present incentives and sanctions.... Energy is everybody's business.