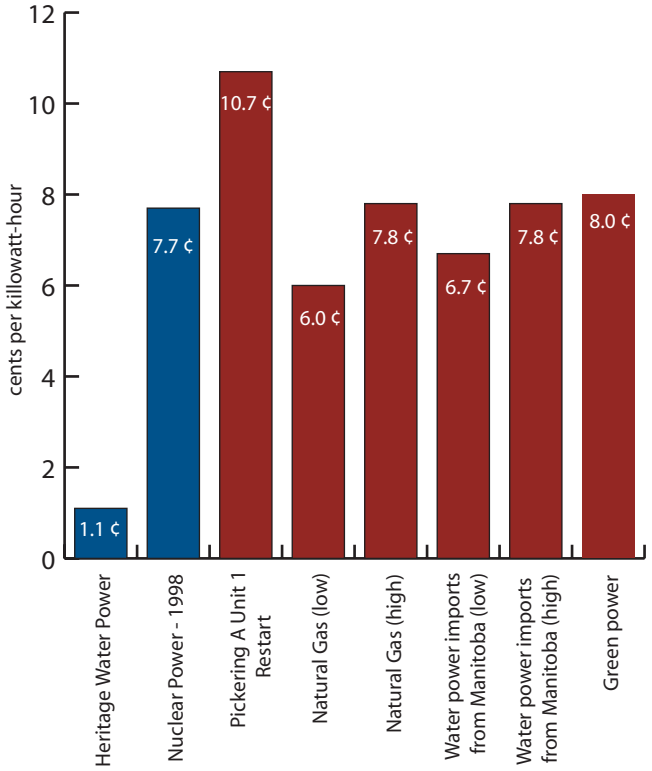
CANDU Nuclear

A Canadian Edsel

According to the Globe and Mail, Canada's CANDU nuclear reactor is "the Edsel of nuclear power." The information in this factsheet will help explain the true accuracy of this statement.

Fig. 1: Cost Comparison of Water Power, Nuclear Power, Green Power and Natural Gas-Fired Power



The first two bars of the graph to the left show Ontario Hydro's actual costs of producing electricity from water power and nuclear reactors in 1998 (Ontario Hydro's last year of operation). The next set show current costs for different power sources (including high and low prices for gas and hydro.)

It is important to note that Ontario Hydro's 1998 nuclear power costs did not include:

- the costs of decommissioning Ontario's nuclear reactors;
- the costs associated with the long-term storage of radioactive nuclear wastes; and
- a commercial return on capital.

In addition, Ontario Hydro's nuclear costs were artificially lowered by the Nuclear Liability Act which limited its liability to $75 million in the event of a nuclear accident. (This Act continues to cover all nuclear operators in Ontario).

In 1999, Ontario Hydro was broken up into five companies. All of its generation assets were transferred to Ontario Power Generation (OPG). To increase the "competitiveness" of OPG's nuclear reactors, $15 billion of Ontario Hydro's nuclear debt was transferred to the Ontario Electricity Financial Corporation to be recovered through a special debt retirement charge and other charges levied on all electricity consumers. This means that even if you get all of your electricity from renewable sources and/or natural gas-fired power plants, you are required to help pay off the $15 billion nuclear stranded debt.

The Government of Ontario recently contracted through an open competitive bidding process for 2,225 megawatts of clean electricity supplies. All of this new supply will come from natural gas-fired plants. The Government did not receive a bid from Ontario's largest independent power producer, Bruce Power, which operates the Bruce Nuclear Station. Bruce Power's refusal to participate in this competitive bidding process is an implicit admission that re-starting its shutdown nuclear reactors is not cost-competitive with new, high-efficiency natural gas-fired power plants.

Reliability

According to the International Energy Agency, "Canadian nuclear reliability for the period 1990 to

Fig. 2: CANDU performance vs. OECD

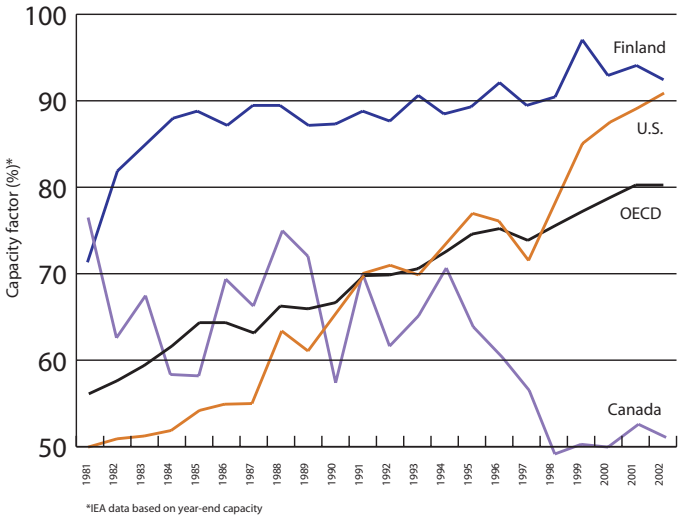
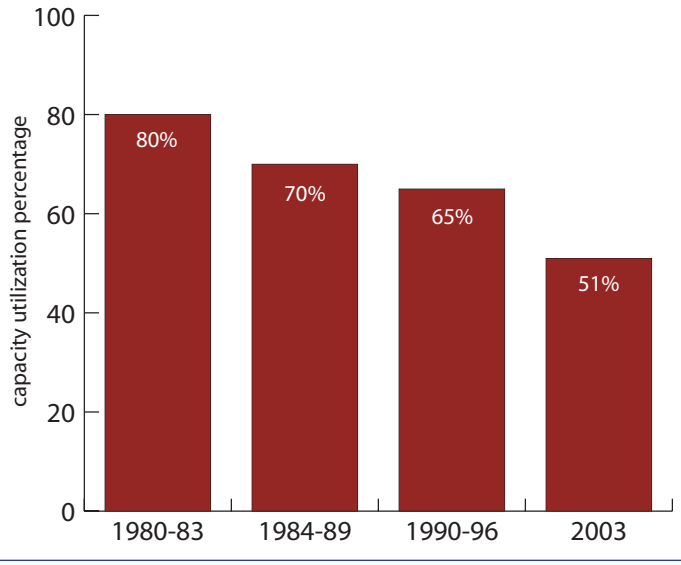


Fig. 3: Declining availability of Ontario nuclear units



2002 has been the worst in the OECD." (See Figure 2 for comparison.)

As Figure 3 shows, the capacity factors of Ontario's nuclear power plants declined from 80% between 1980 and 1983 to 51% in 2003. As a consequence, the output of Ontario's dirty coal plants had to be increased by 120% between 1995 and 2003 to keep the lights on in the province.

As a result of Ontario's heavy dependency on unreliable CANDU nuclear reactors, it took Ontario more than 8 days to fully recover from the August 2003 blackout versus less than 2 days for New York State.

Cost Overruns

Ontario Hydro's initial estimate of the capital cost of the Darlington Nuclear Station was $4 billion. Its actual cost was $14.3 billion.

In August 1999, OPG estimated the cost of returning the Pickering A Unit 4 nuclear reactor to service at $457 million. Unit 4 was returned to service in 2003 at a cost of $1.25 billion. It was shutdown for further repairs in April 2005.

The Pickering A Unit 1 re-start is already behind schedule and 20% over budget.

Long-term Storage of Nuclear Wastes

According to the Nuclear Waste Management Organization, the long-term storage of Canada's nuclear wastes will cost about $24 billion.

For more information:

For more information on how we can phase-out coal and move toward a 100% renewable electricity future, please visit our website at www.cleanairalliance.org.

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