

# SCIENCE DIMENSION



National Research Council Canada  
Conseil national de recherches Canada

Vol. 11, No. 2, 1979

ISSN 0036-830X

Indexed in the Canadian Periodical Index  
This publication is available in microform.

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## Canada's energy history Fluctuations, speculations

Suppose the year is 1867, and Sir John A. Macdonald wants to gaze into the future. "How much energy are the citizens of our grand new Confederation going to consume," he asks in his characteristically spirited way, "and from what sources will it be drawn?"

Taking advantage of more than one hundred years of hindsight, Dr. Frank Steward, from the University of New Brunswick, answered Sir John A.'s supposed questions in a lecture at NRC on "Energy Consumption in Canada since Confederation."

The data, which Dr. Steward has gathered, computed and graphed, paint an intriguing picture of our past.

At the time of Confederation, wood (burned in stoves to keep the winter at bay) was by far the most important source of energy. Next came coal, followed in order of decreasing importance by work animals (horses and oxen), petroleum (only recently discovered and not widely used), wind (harnessed to power sailing ships and windmills) and, finally, human labor.

Today, the amount of energy used by the average Canadian is about 4.7 times more than was used a century ago, and the total consumed in Canada has increased 27 times. The average increase is around 3½ per cent per year, but it fluctuates erratically, climbing rapidly with wars and booms, and dropping with busts.

The mix of sources from which this energy has been drawn has shifted dramatically over the years. The traditional sources – wood, animal work, wind – have dwindled into insignificance, overpowered by petroleum, natural gas and coal. Hydroelectricity, first available at the beginning of this century, has risen to the number four position, followed by nuclear power.

One curious and unsettling aspect of this shift: whereas almost all of the energy used in Sir John A.'s day came from renewable sources, today only about 10 per cent does. Our dominant sources, in other words, are exhaustible.

What is our energy picture going to look like one hundred years from now? It's an obvious and important question.

"I'm not going to speculate about the future," said Dr. Steward, "but I would like to see the forecasters verify their theories and models using the data I have compiled. Can they predict

the present picture from what was known when the politicians from Ontario and Quebec went down to the Maritimes to settle their differences, and we got Confederation? I don't know if Sir John A. Macdonald ever asked about our energy future then, or if he could have been answered with confidence. We must remember that in his time things like nuclear power had not even entered the mind of man. Maybe the answer is that human affairs are so complex and difficult that they just cannot be predicted." □

Séan McCutcheon



Sir John A. Macdonald, (Public Archives Canada/  
Ph. Archives publiques Canada)