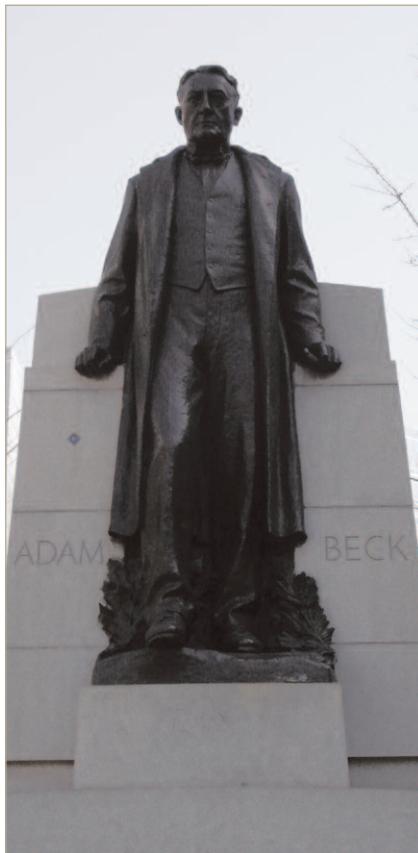


Engineers built Hydro founder's lasting reputation

BY MICHAEL MASTROMATTEO

The founder of the Hydro-Electric Power Commission—later Ontario Hydro—Sir Adam Beck played a key role in promoting engineering talent and expertise to “electrify” the province, fostering the enormous economic development and industrialization that characterized the 20th century. Despite an irascible personality and a touch of the demagogue, Beck’s determination to keep hydro power out of private hands is an example of harnessing natural resources with engineering knowledge for the greater public good.



In 1934, the Toronto Hydro-Electric Power Commission erected a monument to Beck on University Avenue in downtown Toronto.

On October 11, 1910, a crowd of 8000 people gathered in the town of Berlin (now Kitchener, Ontario) to witness the first ceremonial “switch on” of hydro-electric power from a Niagara Falls generating station to southwestern Ontario. The current illuminated a “For the People” sign, which was a direct reflection of the life and work of Ontario Hydro founder, Sir Adam Beck.

As the entity formerly known as Ontario Hydro celebrates its 100th anniversary in 2006, Beck’s role as champion of the people’s power, and his

significance to the engineering profession, continues to cause debate.

A relatively minor figure in the Ontario of another time, Beck rose from modest beginnings to become a formidable political and policy-making figure, whose pioneering work in the public ownership of natural resources for power generation would take on mythical proportions. Historians have suggested that as Ontario’s “power minister” at a time when electricity generation was in its infancy, Beck wielded more real power than Premier James Whitney and his immediate successors.

Beck was born in 1857 in the town of Baden, just west of present-day Kitchener. Accounts of his early life suggest the young Beck was not an exceptional student, but that he excelled at what might be called a “hands-on” approach to identifying problems and looking for workable solutions.

Beck’s formative years led to an interest in athletics, horse breeding and an appreciation of nature, but there also lurked an attitude that his way was clearly the best way. In response to the fortune-seeking imperative of the rugged individualist, Beck was readily drawn to business opportunities that, given the times and geography of 19th century southwestern Ontario, were closely bound to the tobacco industry.

As the proprietor of a flourishing cigar box manufacturing concern, Beck by age 40 had obtained significant affluence and status in business circles. His mercantile instincts led to an interest in public life and, before the end of the 19th century, Beck was ready to test his political mettle.

Although Beck lost in his first bid for a seat in the Ontario legislature in the 1898 election, he consoled himself with efforts to improve the administrative efficiency of London, Ontario’s Victoria Hospital. As biographer William Rothwell Plewman notes: “[Beck] was told that new boilers were needed in the building [Victoria Hospital, London, ON]. He donned overalls, went where the soot was thickest and emerged with the verdict that if this and that were done, the boilers would be good enough for years. And so they were, notwithstanding the protestations of the engineer that a layman could not understand such matters.”

It was at this time that Beck showed glimpses of his trait of combining technical self-sufficiency with a grudging reliance on engineers. This trait would influence Beck’s special regard for the

engineering profession in his later accomplishments with Ontario Hydro.

Mayor of London

After his involvement with Victoria Hospital and other municipal works, Beck returned to politics, winning election as Mayor of London in January 1902. His term was marked by efforts at administrative efficiency and a clear disdain for the cronyism and patronage that marked turn of the century municipal affairs.

At about the same time, Beck was drawn into a group of community and business leaders studying some form of public control over the power generating capabilities of the Niagara River. Although a small coterie of private interests had begun power-generating operations along the Niagara, there was significant concern that these vested interests would treat “hydro” power as a private, profitable preserve that would run counter to the interests of small business and the ordinary homeowner. As Ontario at the time struggled with the rising cost of coal power and the inefficiencies of steam-generated electricity, a resource as valuable as free-flowing water was a prime target for development.

Clearly, the thought of some form of public control over natural resources appealed to Beck’s populist instincts. As later commentators have noted, Beck became one of the earliest and most prominent advocates of publicly owned electricity grids. He believed privately owned power companies would readily put profit ahead of the needs of the public. In their 1986 work *Monopoly’s Moment*, historians H.V. Nelles and Christopher Armstrong outline the urgency behind Beck’s vision: “In Ontario, Adam Beck was able to forge a public power movement from the concern that the power of Niagara Falls would be entirely consumed by Americans or by a group of Toronto monopolists. Without cheap power, ran the reasoning, Ontario must fall in the Darwinian struggle for industrial development, particularly by comparison to the United States. Thus province-building nationalism helped to legitimize nationalization.”

Beck adopted the “Power at Cost” slogan to sell his argument to the public, and to convince Ontario Premier James Whitney (in office 1905-1914) to create a board of enquiry on the issue, with Beck as chair. Following his election to the legislature, Beck became minister without portfolio in Whitney’s cabinet when Whitney became premier in 1905.

The driving force on the board of enquiry, Beck called for the creation of a municipally owned hydro-electric system, using water from Niagara Falls and other Ontario lakes and rivers, and funded by the provincial government. Premier Whitney equivocated on the wisdom of it all, but eventually Beck wore him down.

In May 1906, the Ontario legislature passed the *Act to Provide the Transmission of Electric Power to Municipalities* and, the following month, Beck was officially appointed chairman of the Hydro-Electric Power Commission.

Beck faced lingering, and often bitter, opposition from private interests on both sides of the Canada-U.S. border for his efforts to “nationalize” electricity generation. Although not always a gracious opponent, he refused to be cowed by his high-profile enemies, and he spent the first few years after 1906 looking to expand the number of Ontario municipalities signing on to the power-distribution effort. He also looked to expand transmission lines into distant reaches of the province and to exploit other water resources—most notably the Trent-Severn and St. Lawrence rivers—to bring electricity into rural areas.

It can be said that Beck didn’t always play fair with committed free enterprisers. The initial vision was that Ontario Hydro would only compete with private interests in allowing consumers a choice of services and rates. Beck’s sense of moral certainty, however, coupled with the public’s ready acceptance of the “power at cost” rallying cry, soon led to



Photo: Ontario Power Generation archives

Sir Adam Beck in an official portrait.

Hydro’s buying the remaining private power companies—effectively giving Ontario Hydro a full monopoly.

Beck celebrated his victory by organizing “circuses” in various communities throughout the province. These consisted of displays of “modern” electric-powered appliances that the Hydro chairman said would do wonders to improve the quality of life in Ontario throughout the 20th century.

Engineers’ input

With more and more of the province buying into the hydro plan, Beck faced the challenge of delivering additional power to more consumers. It was in these instances that the Hydro chairman’s trust in engineers would pay dividends. Biographer Plewman recounts a time when Beck’s detractors scoffed at a plan by pioneering hydro commission engineers to develop the lines to transmit up to 110,000 volts: “Undaunted, the youthful Canadian engineers reporting to Beck, said they had checked and double-checked their figures and were prepared

to vouch for them. ‘All right,’ said Adam Beck, and back he went to the uneasy premier [Whitney] and made such a strong fight for the engineers’ accuracy and reliability that the premier hesitatingly gave his consent to the work proceeding. Adam Beck made it plain to Premier Whitney that he was prepared to stake his reputation and his whole political future upon the say-so of his engineering advisors. Small wonder then that the whole engineering staff of the Hydro, which came to number 500 engineers, should feel that here was a man among a million, the ideal employer of engineers. He had to be shown and he took nothing for granted. But when he had applied every reasonable test, he would gamble upon his engineering advice.”

With most of his administrative and political battles behind him, Beck sought to deliver on his promise to bring the benefits of electricity to new parts of the province. In 1917, only 11 years after its founding, the Hydro-Electric Power Commission began the Queenston-Chippawa project, which was renamed Adam Beck 1. Commentators of the day suggested the power plant rivaled the construction of the Panama Canal in its complexity. In any case, by the time it was completed in 1922, Adam Beck 1 was regarded as the foremost technical achievement of its time. The facility was, for many years, the most powerful hydro-electric generating station in the world, and it gave new status and impetus to Beck, the commission, and its team of engineers.

Massive public works

It can be argued that Beck’s influence was beneficial to Canadian engineers in proving their worth at completing such massive projects in the public domain. Canada’s civil and mechanical engineering history prior to Beck was punctuated largely by railway and canal construction projects, appropriate to a pioneering, agricultural and resource-based economy. Thanks in some measure to Beck, Canadian engineers gained valuable expertise in developing hydro electric power—and when the province’s waterways were largely tapped—engineers



Photo: Canadian Museum of Science and Technology

Adam Beck, second from right, attending one of his “circuses” in rural Ontario c.1915. The events were organized to demonstrate the benefits of power distribution and rural electrification.

made headway in developing thermal and, later, nuclear power sources.

By the time of Beck’s death in 1925, Ontario Hydro was well on its way to consolidating its position as a model of publicly owned power generation. To be sure, Beck’s management style was criticized for bypassing parliamentary procedure and being exempt from normal public accountability. In some cases, Hydro was seen as a form of government in its own right, and Beck himself was accused of playing fast and loose with public funds and turning a blind eye to massive cost overruns. And such charges would continue to plague Ontario Hydro until well into the 20th century.

Nonetheless, Beck, and the engineers he supervised, found some vindication in an April 1922 provincial report on hydro commission management and spending practices. Known as the Gregory Commission, the report noted irregularities in management and accounting habits, but had high praise for Hydro’s engineering efforts. As author Merrill Denison notes in his 1960 work *The People’s Power*, “the design of the Queenston-Chippawa (Adam Beck 1) development was based on the most intricate calculations known in the history of hydraulics...It now appears that

the engineers of the Commission, as designers of this great work, surpassed even their own expectations...The plant now has an efficiency of over 90 per cent, an unusually high figure and one which indicates a fineness of design seldom, if ever, attained in a work of this character. It is, in short, a magnificent piece of engineering.”

Whatever one’s views on state control of utilities, Beck’s significance to the engineering community rests in his giving the profession the mandate, confidence and “elbow room” to undertake unprecedented public works projects. Clearly, his trust in engineers’ abilities and their success in delivering the projects helped justify Beck’s original vision for “at cost” electric power. At the same time, the development of hydro power in the early decades of the 20th century brought new prestige to the engineering profession in the public imagination. As Ontario Hydro historian Merrill Denison observes, “Having its beginning when the technologies of electrical production and transmission were in their infancy, the Commission was one of the world pioneers in large-scale hydro-electric development, standardization of equipment and appliances, utility management and rural electrification.”