The Economic Impacts of the August 2003 Blackout

Prepared by the Electricity Consumers Resource Council (ELCON) - February 9, 2004

This paper summarizes recent efforts to quantify the total economic costs of the August 2003 Blackout. These estimates are shown to be consistent with post-blackout surveys of affected manufacturers and businesses. The paper concludes with examples of impacts to major industries and attempts to put a face on the economic consequences of this unfortunate debacle.

The August 14, 2003 Blackout started shortly after 4 PM EDT and resulted in the loss of 61,800 MW of electric load that served more than 50 million people. The footprint of the blackout on both sides of the US-Canadian border includes large urban centers that are heavily industrialized and important financial centers (*e.g.,* New York City and Toronto). Nearly half the Canadian economy is located in Ontario and was affected by the blackout. Service in the affected states and provinces was gradually restored with most areas fully restored within two days although parts of Ontario experienced rolling blackouts for more than a week before full power was restored.[1]

Other major North American blackouts in 1965 and 1977, and the 2000-2001 California Electricity Crisis, produced a sizable library of studies and analyses of the direct and indirect economic costs of power outages on regional economies. Based on the much-studied 1977 New York City blackout, ICF Consulting estimated the total economic cost of the August 2003 blackout to be between $7 and $10 billion.[2] These figures are based on estimates of direct costs per kWh of the power outage (*e.g.,* losses due to food spoilage, lost production and overtime wages) and indirect costs due to the secondary effects of the direct costs.[3] According to ICF, the estimates are corroborated by more recent simulation studies of potential outages in California.

Anderson Economic Group (AEG) estimates the likely total cost to be between $4.5 and $8.2 billion with a mid-point of $6.4 billion. This includes $4.2 billion in lost income to workers and investors, $15 to $100 million in extra costs to government agencies (*e.g.,* due to overtime and emergency service costs), $1 to $2 billion in costs to the affected utilities, and between $380 and $940 million in costs associated with lost or spoiled commodities.[4]

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[1] U.S.-Canada Power System Outage Task Force, *Causes of the August 14th Blackout: Interim Report,* November 2003, p. 1; James McCarten, CNEWS, December 31, 2003

[2] ICF Consulting, "The Economic Cost of the Blackout: An Issue Paper on the Northeastern Blackout, August 14, 2003."

[3] *Impact Assessment of the 1977 New York City Blackout*, SCI Project 5236-100, Final Report, Prepared for the U.S. Department of Energy, July 1978, pp. 2-4.

[4] Anderson, Patrick L. and Ilhan K, Geckil, "Northeast Blackout Likely to Reduce US Earnings by $6.4 Billion," AEG Working Paper 2003-2, August 19, 2003

The U.S. Department of Energy (DOE) has published a total cost estimate of about $6 billion.[5] This number is the most frequently cited cost estimate in press coverage of the blackout.

In a separate study completed shortly after August 14, the Ohio Manufacturers' Association (OMA) estimated the direct costs of the blackout on Ohio manufacturers to be $1.08 billion.[6] Some 12,300 manufacturing companies in the state (representing approximately 55% of the manufacturers in Ohio) were impacted with an average estimated direct cost of nearly $88,000 each. All companies reporting indicated that the blackout caused a "complete shutdown in operations." The average duration of a plant shutdown was 36 hours. Over a third of the companies reported that the outage also disrupted deliveries from suppliers and deliveries to customers. The study was based on a survey of OMA members and the results have a sampling error of plus or minus 5%.

The OMA study noted that other indirect costs also resulted from the blackout, including:

1. The diversion of significant amounts of capital investment from new job-producing investments to blackout protection systems; and
2. Lower bottom lines resulting from lost production will reduce the value of those companies' securities.

The OMA results are consistent with the ICF and AEG estimates given that the Ohio study only captures impacts on the manufacturing sector and not commercial or public sector costs. The blackout affected parts of eight states and the Canadian province of Ontario. The OMA survey confirms that the event's economic cost is reasonably measured in the "billions" of dollars.

A second post-blackout study underway by CrainTech (a business news publisher), Case Western Reserve University's Center for Regional Economic Issues and Mirifex Systems LLC has produced some preliminary results based on a survey of businesses in Ohio, New York, Pennsylvania, Michigan, Wisconsin and Southern Canada. These findings include:[7]

1. A quarter of the businesses surveyed (24%) lost more than $50,000 per hour of downtime (*i.e.*, $400,000 for an 8-hour day). And 4% of the businesses lost more than $1 million for each hour of downtime.

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[5] "Transforming the Grid to Revolutionize Electric Power in North America," Bill Parks, U.S. Department of Energy, Edison Electric Institute's Fall 2003 Transmission, Distribution and Metering Conference, October 13, 2003

[6] Ohio Manufacturers' Association, August 29, 2003

[7] Mirifex Systems LLC, Case Western Reserve University and CrainTech, November 5, 2003