

HYDROELECTRIC POWER POTENTIAL IN THE MOHAWK RIVER BASIN

Ashraf Ghaly, Ph.D., P.E.

Department of Engineering, Union College, Schenectady, NY 12308

The present day Mohawk River basin consists of roughly 6,656 miles of rivers, streams, and canals and 135 lakes, ponds, and reservoirs, which are greater than 6.4 acres in size. There are several major tributaries to the Mohawk, which constitute a substantial number of river miles within the basin. These include Schoharie Creek, West Canada Creek, and East Canada Creek. The largest ponded bodies of water within the Mohawk River basin are human-made reservoirs. Together the Hinckley Reservoir, Delta Reservoir, Schoharie Reservoir, and Peck Lake make up 42% of total lake acres (NYSDEC 2003). A number of hydroelectric electric power projects have been developed in the Mohawk River basin over the years. These plants include Cohoes Falls, Vischer Ferry, and Hinckley. In addition, the Blenheim-Gilboa pumped storage is an example of a project designed to store water to generate power at peak demand times. From Cohoes, where the Mohawk River joins the Hudson River, to Rome one hundred miles inland, where the New York State Barge Canal continues on to Lake Ontario and Lake Erie, the difference in elevation is 420 feet. Twenty locks make up this gradual climb. Most of these locks, in addition to some dams such as Gilboa Dam, spill water with no provision to use the difference in water head to generate hydropower. This paper is concerned with discussing the potential of generating hydroelectric power from existing hydraulic structures presently serving various functions in the Mohawk River basin. It aims at illustrating that existing facilities have the capacity to produce renewable, clean, and inexpensive energy that can aid in the economic development of this part of the State of New York.

Poster Presentation