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## **Power Equations**

**M**uch of the world is probably chortling at the power blackout in the United States last week in a leery display of schadenfreude, a delectable German word that means taking pleasure in someone else's misfortune. While relishing the American discomfiture, one should also remember how much India owes the U.S in the field of electricity generation and transmission, a sketchily-chronicled collaboration that goes back more than a century.

One of India's first hydroelectric plants owes its origins to the power plants around the Niagara Falls, the region where celebrated American companies such as General Electric and Westinghouse first pioneered electricity in the late 19<sup>th</sup> century based on the work of brilliant inventors such as Thomas Edison and Nicholas Tesla.

In fact both these scientists were known to Indians who happened to be in the United States those days. Swami Vivekananda met Tesla (in the eyes of many a greater genius but lesser entrepreneur than Edison) at the Chicago World Fair on the sidelines of the World Religious Conference in 1893. Vivekananda's successor in US, Swami Abhedananda, called on Edison in New York several years later. Not much is known about these meetings, but evidently Indians were quite aware of the magnificent developments in the US in the field of engineering and technology.

In 1880, just a couple of years after Edison lit the first electric bulb and jiggled the first electricity transmission lines in upstate New York, the British struck gold in Kolar, India. But the auriferous veins ran to great depths and the Brits needed something less expensive and more reliable than coal and steam powered equipment for the deep-shaft operations. Trust the Americans to market new technology even in those days. But such was the entrepreneurial spirit in the post-civil war United States that Edison himself had registered more than 1000 patents more than 100 years ago.

And so it transpired that in 1902, after several years of negotiations, Edison's General Electric was commissioned by then Mysore State to build the first hydroelectric installation at Cauvery Falls. Mysore retained one of General Electric's engineers, Harry Parker Gibbs, as the Chief Electrical Engineer of the State's new Electrical Department, and sent four Indian members of the departmental staff to GE's headquarters in Schenectady, New York for training. So GE's connection to India goes a long way back, predating both Scott Bayman (the current GE honcho in India) and the outsourcing flap.

Power wasn't the only area the United States helped India out with in those days. Around the same time as Edison and his electricity frisson (and when certain Mohandas Gandhi was still in South Africa), the legendary Sir Mokshagundam Visvesvaraya visited the United States and traveled across the country to see some of the most awesome engineering marvels including the Tennessee Valley Authority (TVA). That multi purpose project inspired Mysore's Krishna Raja Sagar (KRS) dam and other works in the Cauvery basin, scene of much squabbling between Karnataka and Tamil Nadu.

Meanwhile Jamshedji Tata visited Pittsburg in 1901 and buttonholed Julian Kennedy, one of the foremost metallurgical engineers in the world and head of the Julian Kennedy, Sahlin and Co. Ltd. Engineers. Tata gained much from Kennedy's advice and the firm was appointed Construction Engineer to the Tata Iron and Steel Co. (TISCO) in 1907. All in all, it appears that tech transfer from US to India was far easier in those days. Something for today's mandarins to ponder about.

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