

## The Electric Light and Power Industry of Indiana

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The State of Indiana is one of the ranking producers of electrical energy and its companies operate in parallel with an interconnected system of twenty-five power producers which supply Northern Kentucky, Indiana, Southwestern Michigan, Ohio, Western Pennsylvania and West Virginia. About thirty percent of the United States total weekly power output is generated in these states. Nationwide the State of New York, with generating capacity of 5,500,000 K.W. leads the major producers, with Indiana standing seventh with 1,700,000 K.W. at the end of 1947.

Before the turn of the century it could fairly be said that there was no electric light and power industry in Indiana. To be sure electrical energy was produced but not as a commodity for sale. A few factories generated electricity to power machines which might be used in the manufacture of household goods or farm implements; the South Bend railroad powered a street railway with electricity; and some cities had installed electric lighting systems. But not until after 1900, when the problems of distribution of energy had been solved, did the industry develop in Indiana.

Until World War I Indiana was far behind the surrounding states in production of electrical energy but by 1920 she had increased generating capacity to within a third of that of her most important neighbors. From 1920 to 1940, despite eight depression years, generation capacity more than doubled. Although, still a third behind these most favored neighbors in electrical generation capabilities in 1940, the available consumer supply of electric energy in Indiana was far above that of any of the adjoining states. In fact, it was said by some that the electric light and power industry in Indiana was over built.

It was this adjudged fact which led the Office of War Utilities and the Office of War Production to place such a quantity of war production contracts within the state that Indiana had the singular distinction of having the highest per capita war production in our Union from 1942 through 1945.

At the war's end, general industrial production slumped while generating capacity stood by. But the duration of production decline was not for long—not long enough for the electric light and power industry to replace old worn out equipment, or for making necessary repairs in the midst of a situation where metals and parts used in the electric industry were in very short supply.

During the first quarter of 1946 the demand for electricity increased to such an extent that the industry was called upon to supply more electrical energy than was safely available. Because electrical energy cannot be stored, generating plants must be large enough to supply

power in amounts equal to peak load requirements. Furthermore, in order to guarantee a firm supply, and to be able to meet emergency situations, it is producer policy to provide a plant with 15 percent more generating capacity than is required of it during the peak load intervals. It is this margin of reserve between load and capacity<sup>1</sup> which has helped to supply the increased demand and many times this margin has been dangerously small. Hence, from time to time warnings are sent out about power shortage, and the larger consumers are asked to shift intervals of maximum consumption to off-peak hours.

Plants now under construction and new plans in progress warrant a substantial future increase in generation capacity. It is quietly accurately estimated that the amount of available energy in Indiana by 1950 will be double that of 1940.

### Characteristics of the Industry

The industry is composed principally of six operating companies, namely Public Service Company of Indiana, Southern Indiana Gas and Electric Company, Indianapolis Power and Light Company, Indiana Service Corporation, Northern Indiana Public Service Company, and Indiana and Michigan Electric Company.

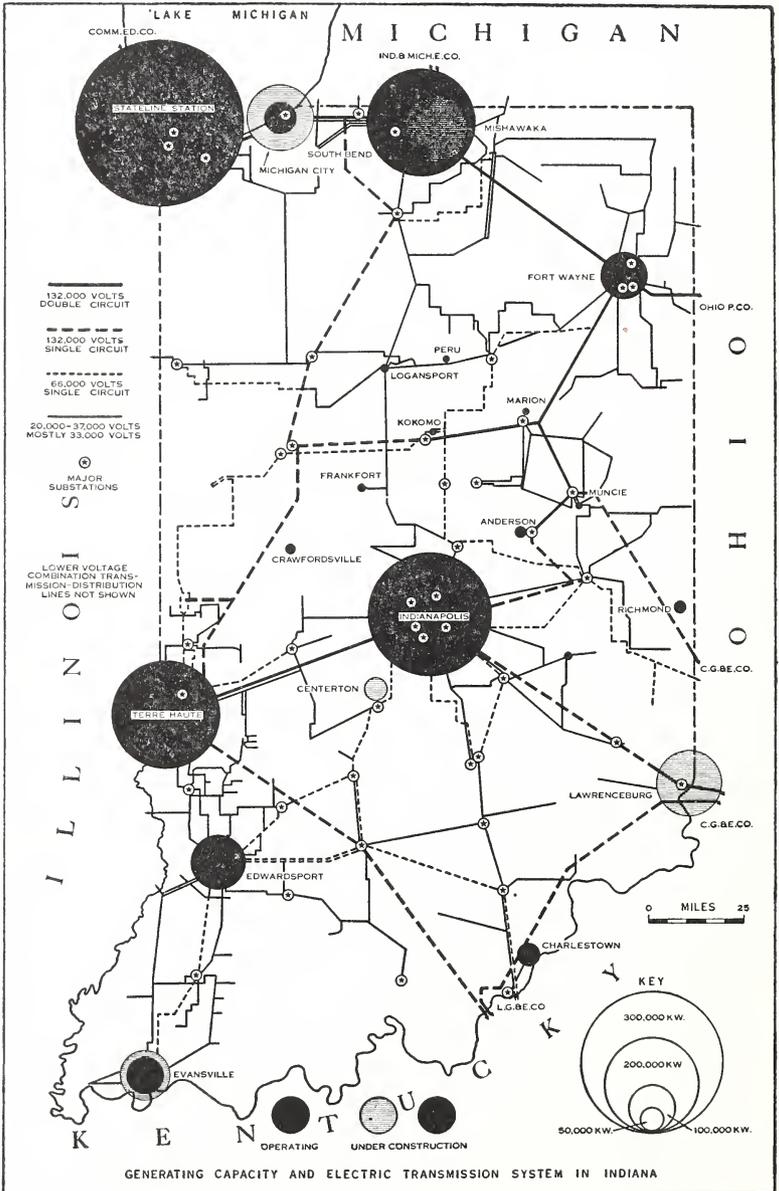
The sites of power generation are concentrated either in areas of maximum consumption or at points of low cost of production. While the map (figure 1.) shows that there are wide areas without generating capacity, it also indicates the transmission system over which power is distributed throughout the state. The trend of bringing power to the worker has been so strong in Indiana that it has been one of the leading states in bringing about the industrial revival of the countryside.

Besides the intricate transmission and distribution system of the several commercial companies is the potent factor of integration. There is a complete system of interstate as well as intrastate inter-connection. Such tie ups permit a company, for instance, to purchase power needed at peak load intervals, and at other times to dispose of surplus power, and provides mutual aid for all companies in times of emergency.

There are 84 municipal plants in the state with only one generating as much as 25,000 KW. Fifty-four of them buy all their power from the commercial producers. Among the larger municipal plants such as Anderson, Richmond, Crawfordsville, Logansport and Goshen, to mention the most representative cities (figure 1.), power is drawn from the utilities' transmission system, either to reinforce firm supply or for standby emergency use. The twenty odd smaller municipal plants have

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<sup>1</sup>Data on generating capacity is almost always shown in terms of manufacturers' "name plate rating"—the capacity which the manufacturer will guarantee. Usually, due to differences in operating conditions, or to modification after installation, the actual capacity is quite different, mostly higher than the nameplate rating. This unrecorded capacity plus the fact that most generators are capable of carrying considerable overload for a period of time have more than once prevented derangement of service during the period of short supply.



capacities mostly under 10,000 KW., and the sum of generating capacity of all the municipal installations is only about 175,000 KW.

The consumers of electricity in Indiana, statistically divided into residential and rural, small-commercial, large industrial, and traction

companies, embrace or include the greater proportion of human activity. Large industry consumes almost sixty-five percent of total kilowatt-hour produced with small commercial and residential and rural using around fifteen percent each, and traction companies consuming about five percent. While only eighty-five percent of our farms have been electrified, further development in this field is toward installation of larger transmission systems as farms become greater power users, rather than electrifying farms without service. Today the farms that do not have electricity are largely of the sub-marginal, self-sufficiency type and, therefore, would be little benefited by such service.

### Cost of Electricity

To the consumer the cost of electrical energy, for the state as a whole, does not exceed the average of that of any neighboring state. According to the most recent series of index numbers published by the U. S. Bureau of Labor Statistics, in which the average of the five years, 1935-39, is used as the base, the cost of residential electricity stood at 89.0 in December 1947, compared with a Cost of Living, on the same base, of 167. While sales of electricity throughout the decade have increased tremendously with the resultant decline in average price of Kwhr sold, the rapid postwar increase in the trade's basic costs, plus the burdensome financing of expansion projects, will inevitably force consumer prices upward.

Most electric generators in the state are powered by steam, with coal as the principal fuel. Abundant and cheap coal has favored this type of prime mover of the generator. Moreover, Indiana's topography and river regimen are such that the cost of construction of sizeable hydro-electric plants would be comparatively much more expensive. Consequently, almost ninety-two percent of the electrical energy produced today comes from the steam driven generator.

### Conclusion

The electric light and power industry after a late and slow start has grown to proportions which has attracted many heavy power consuming industries with the result that a power shortage became a serious threat. But now programs are under way to establish the normal reserve of plant and equipment and promote general growth of the industry. Supplied mostly by large operating companies, no urban and practically no rural population unit in Indiana is now without service.