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ELECTRIC POWER ON THE FARM

EDITED BY DAVID CUSHMAN COYLE
RURAL ELECTRIFICATION ADMINISTRATION
WASHINGTON, D. C.

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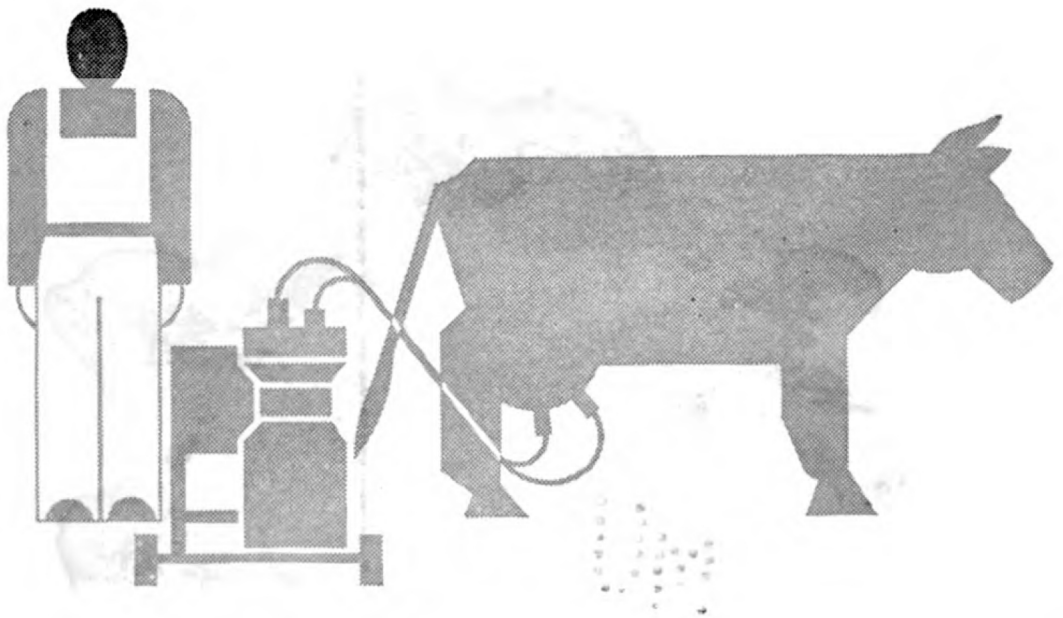
ELECTRIC POWER ON THE FARM

The Story of Electricity, its usefulness on farms, and the movement to electrify rural America.



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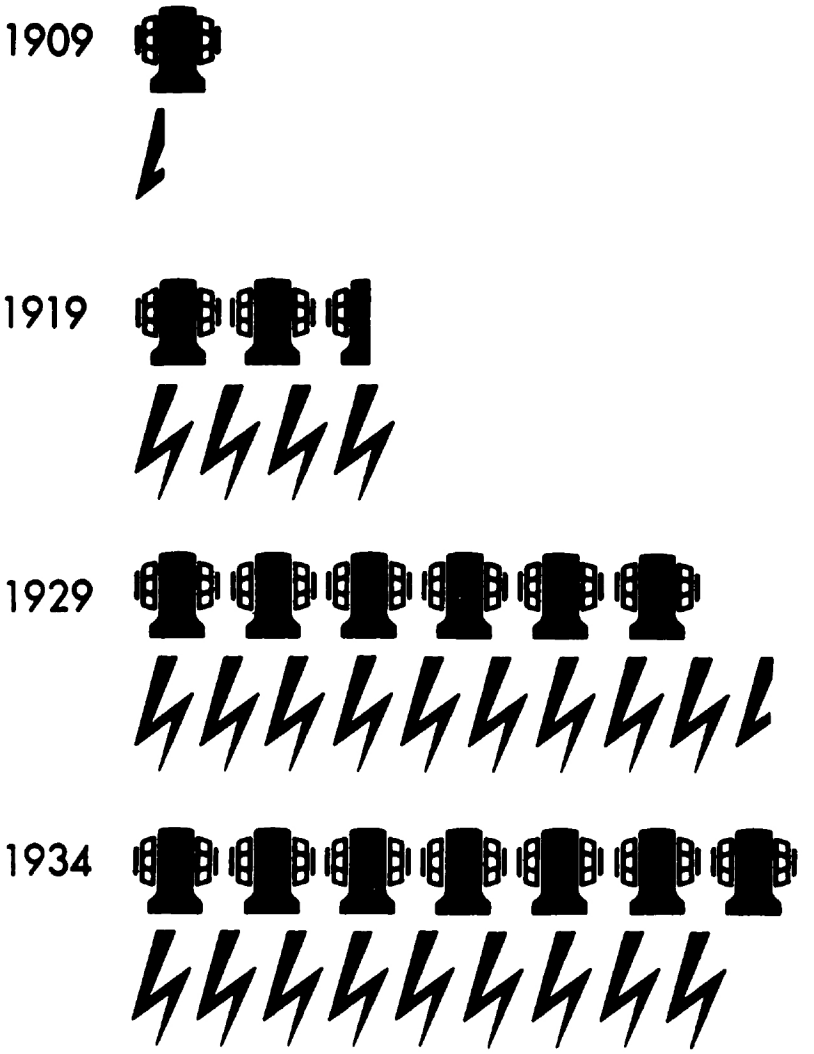
RURAL ELECTRIFICATION ADMINISTRATION

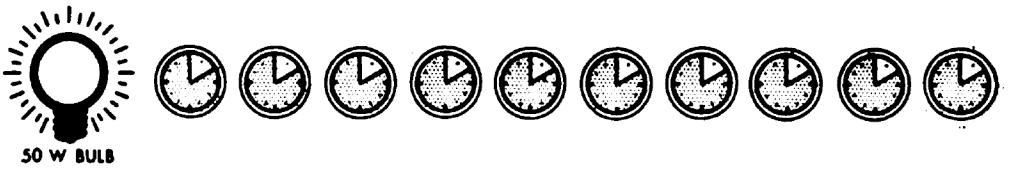
CAPACITY AND PRODUCTION OF ELECTRIC POWER PLANTS

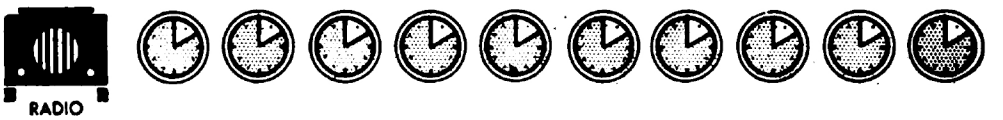


Each dynamo represents 5 million KW capacity.
Each bolt represents 10 billion KWH production.

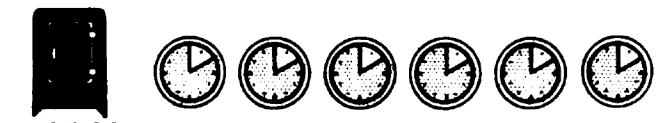
In 1936, production increased to such an extent that construction of increased capacity was begun in many sections.

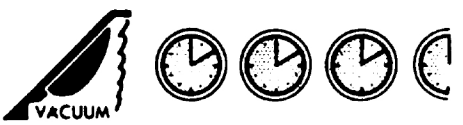
WHAT A KWH GIVES YOU

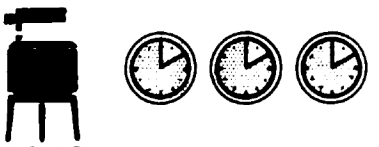




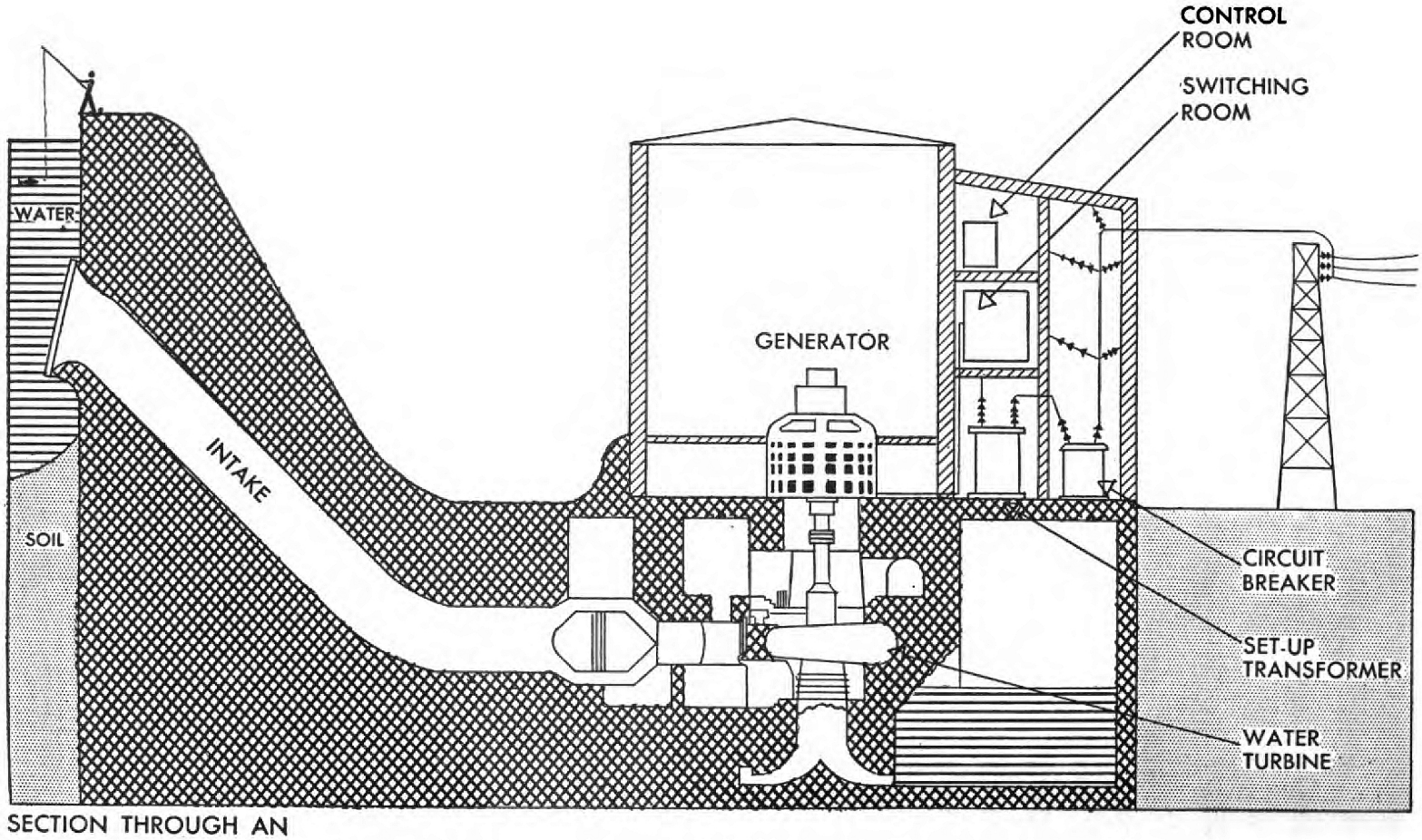








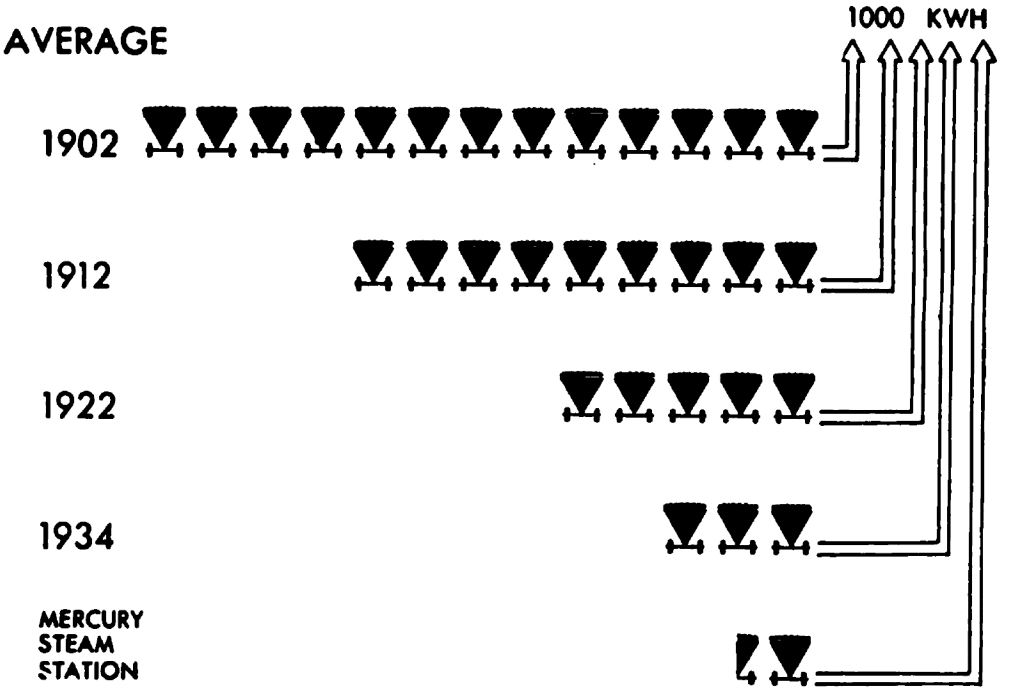
Each clock represents two hours of service



SECTION THROUGH AN

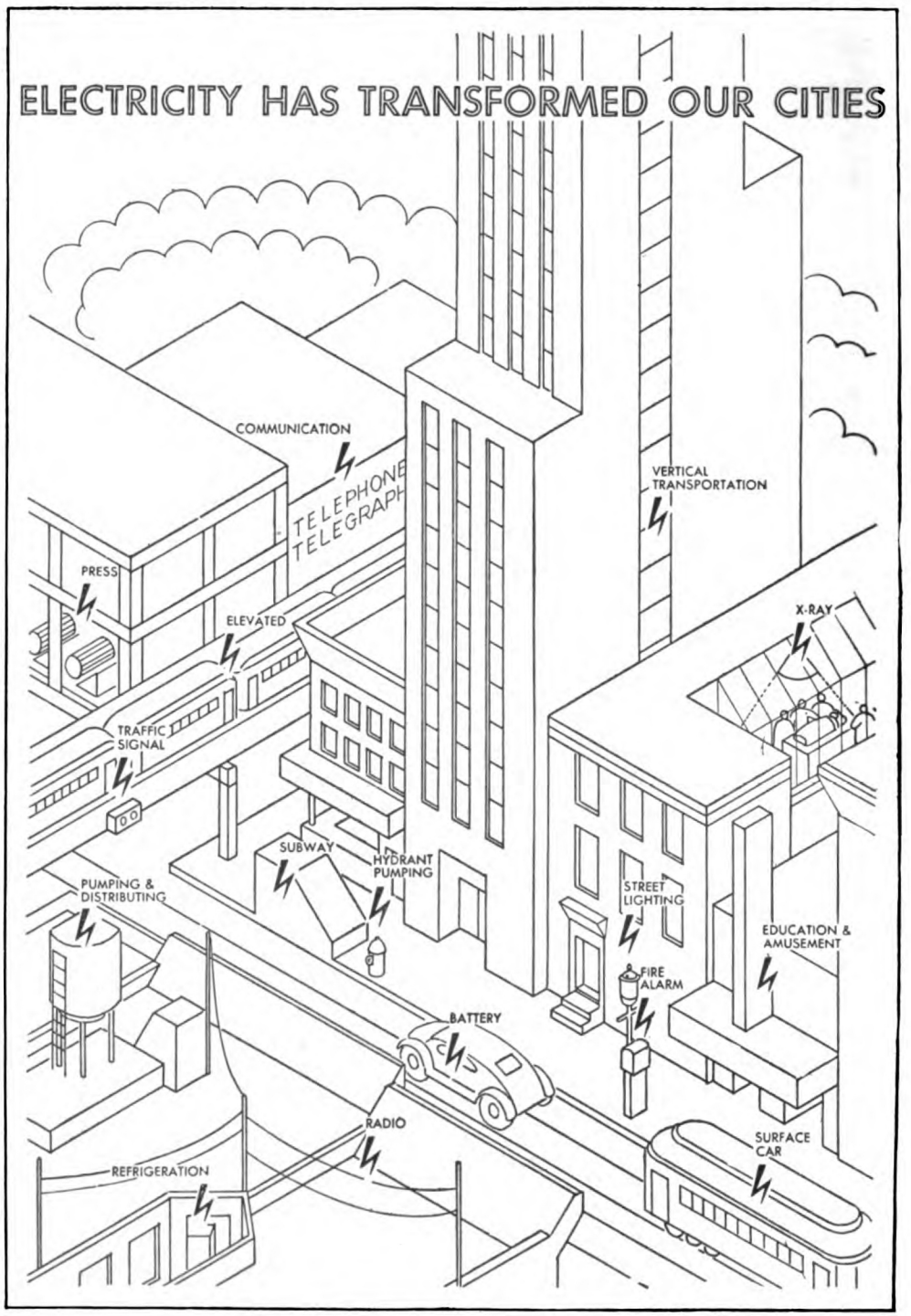
HYDRO-PLANT

After Faraday, the theory of the dynamo was developed along the lines of direct and alternating current by thousands of inventors. Charles P. Steinmetz discovered the law of hysteresis—the lag in magnetization when the electromagnetic current is turned on—which is a vital



factor in the design of dynamos and transformers. Edison was a pioneer in the use of direct current, and Ferranti developed the alternating current, the form now most generally used.

Meanwhile several new lines of progress were discovered. The Hertzian waves in the ether were found and

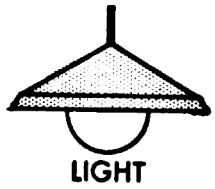

ELECTRICITY HAS TRANSFORMED OUR CITIES
COMMUNICATION
TELEPHONE
TELEGRAPH
VERTICAL TRANSPORTATION
PRESS
ELEVATED
X-RAY
TRAFFIC SIGNAL
SUBWAY
HYDRANT PUMPING
PUMPING & DISTRIBUTING
STREET LIGHTING
EDUCATION & AMUSEMENT
FIRE ALARM
BATTERY
RADIO
SURFACE CAR
REFRIGERATION

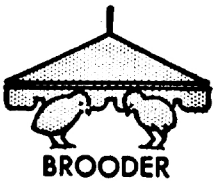
produce plants, cold-storage concerns, and other business enterprises. Farmers make extensive use of the lockers for storing meat, poultry, and berries for their own families. Deer and elk meat killed in season can be stored for out-



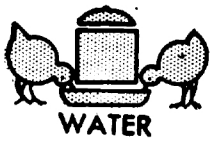
TODAY WITHOUT ELECTRICITY

KWH PER APPLIANCE FOR A WELL EQUIPPED POULTRY FARM





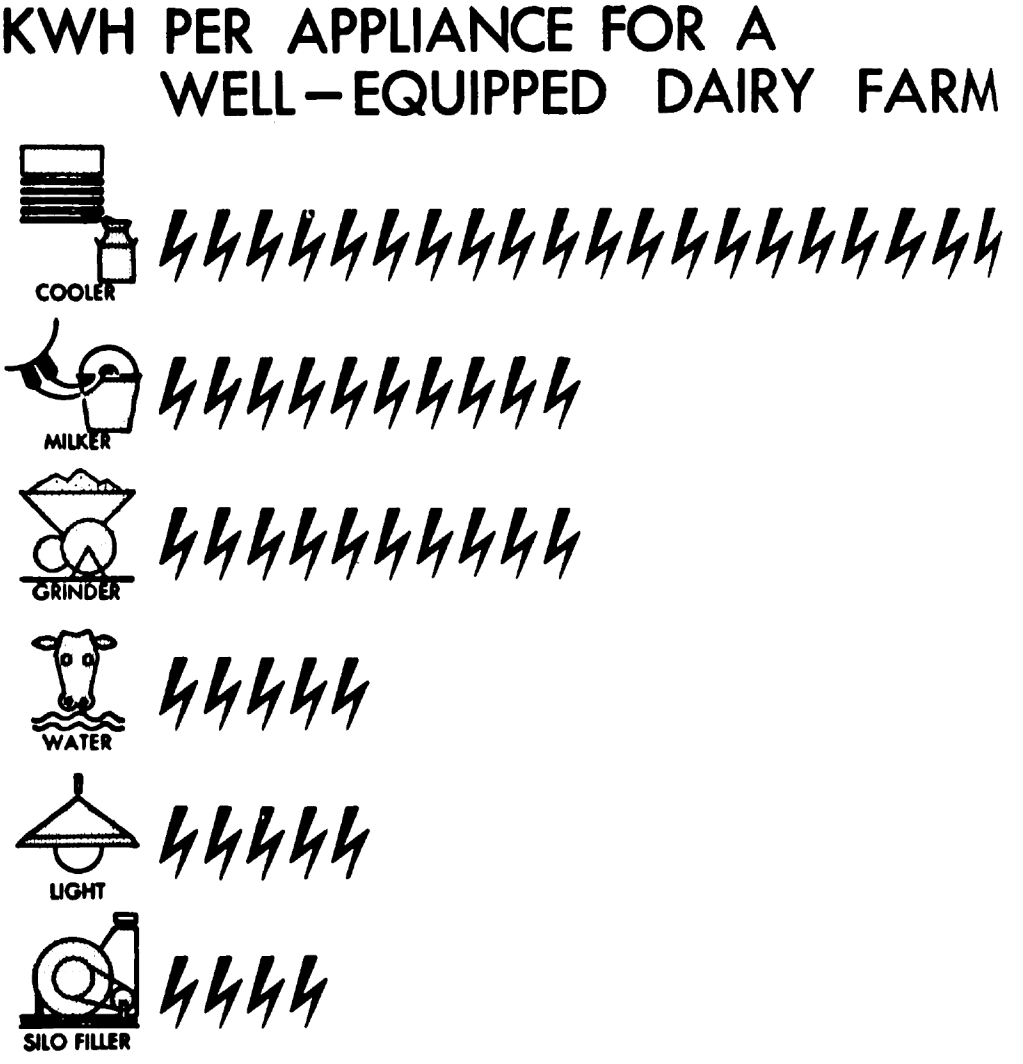






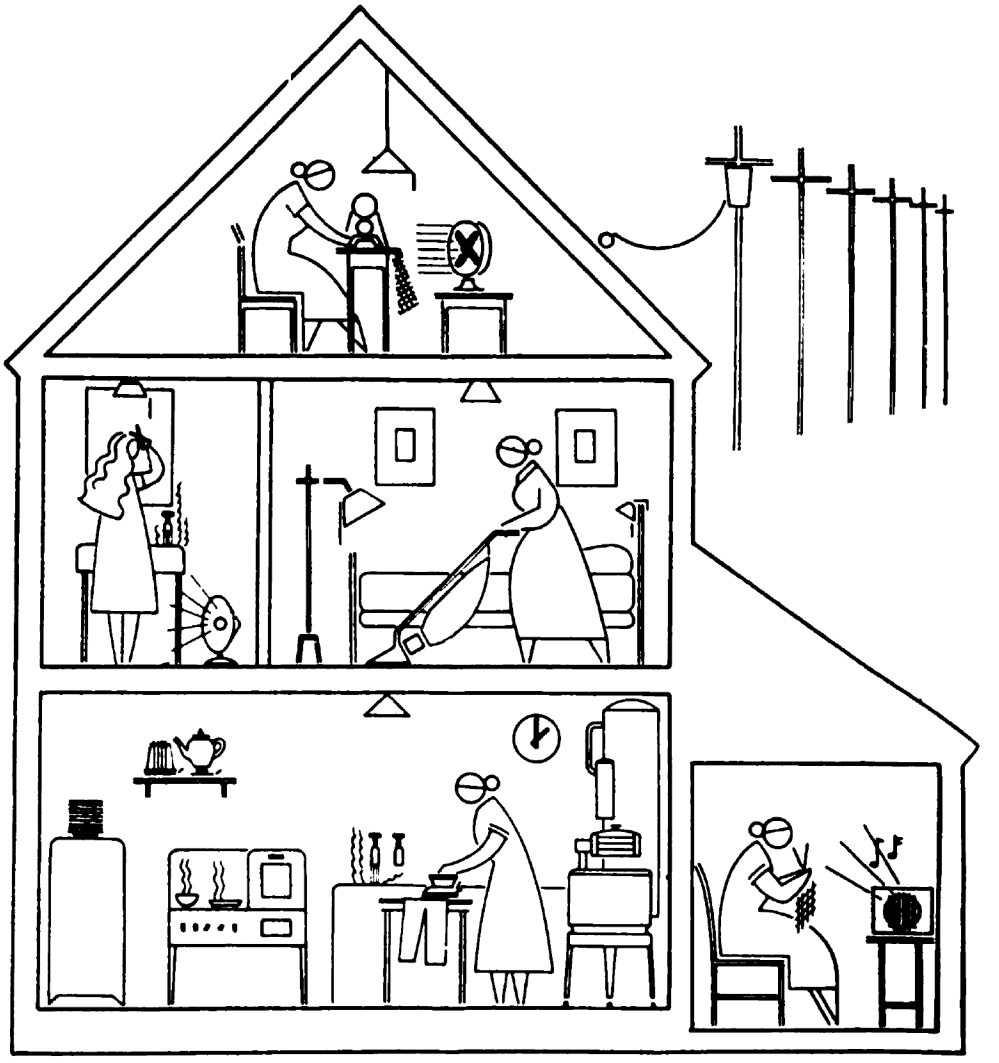
Each bolt represents 50 KWH consumed annually

condition of the markets for the product. Every farmer knows by this time that if he makes more wheat or pork or milk he may get more money, provided too many



others are not doing the same. But if all the farmers add to their production at the same time, each one may get less money than before.

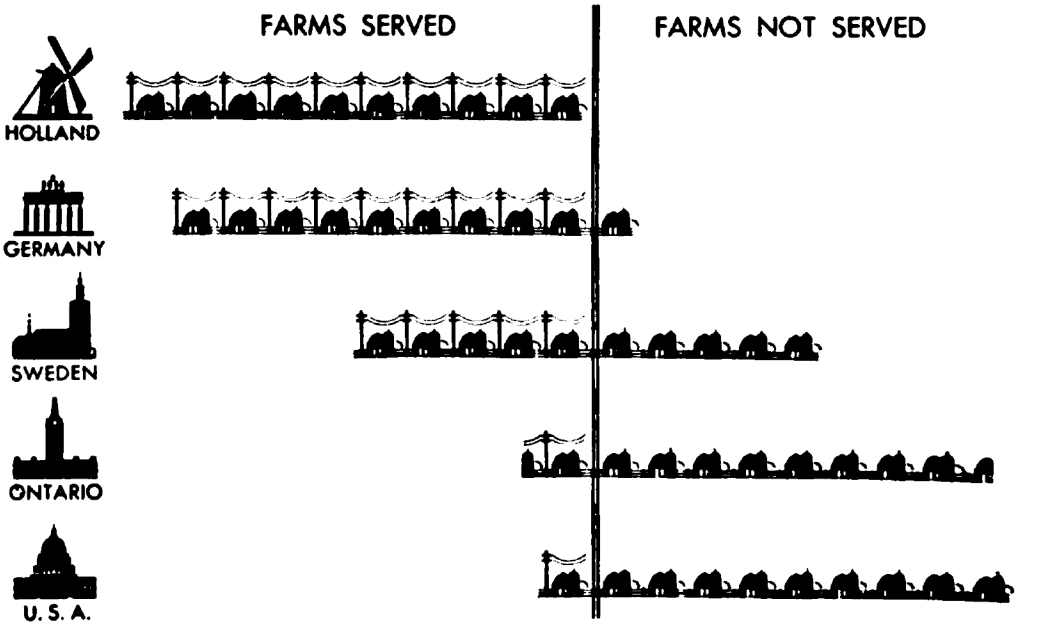
electric stove saves carrying fuel and disposing of ashes, and in hot weather it does not heat the kitchen like a coal or wood stove. In winter, on the other hand, an electric stove is not enough to keep the kitchen warm.



TODAY WITH ELECTRICITY

$8,000,000, leaving an equity of $1,000,000 or 11 percent of the assets. In 1935 assets had become $82,000,000 with a debt of only $27,600,000, leaving an equity of $54,400,000 or 66 percent of assets. The average domestic consumption in 1913 was 18 kilowatt-hours monthly at an average price of 4.81 cents per kilowatt-hour. By

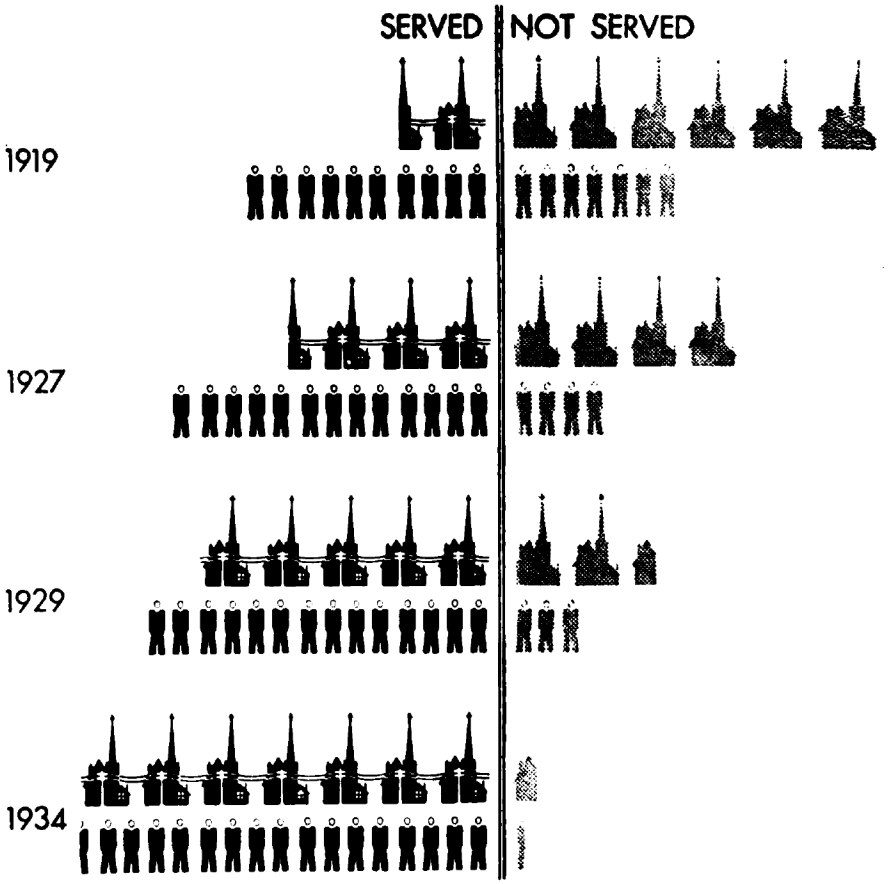
RURAL ELECTRIFICATION IN VARIOUS COUNTRIES



1935 the consumption had risen to 163 kilowatt-hours at an average price of 1.36 cents. The average monthly bill had about doubled while consumption had increased eight times.

The Province is sparsely populated, with an average of only 8.4 people to the square mile, about one-fifth as

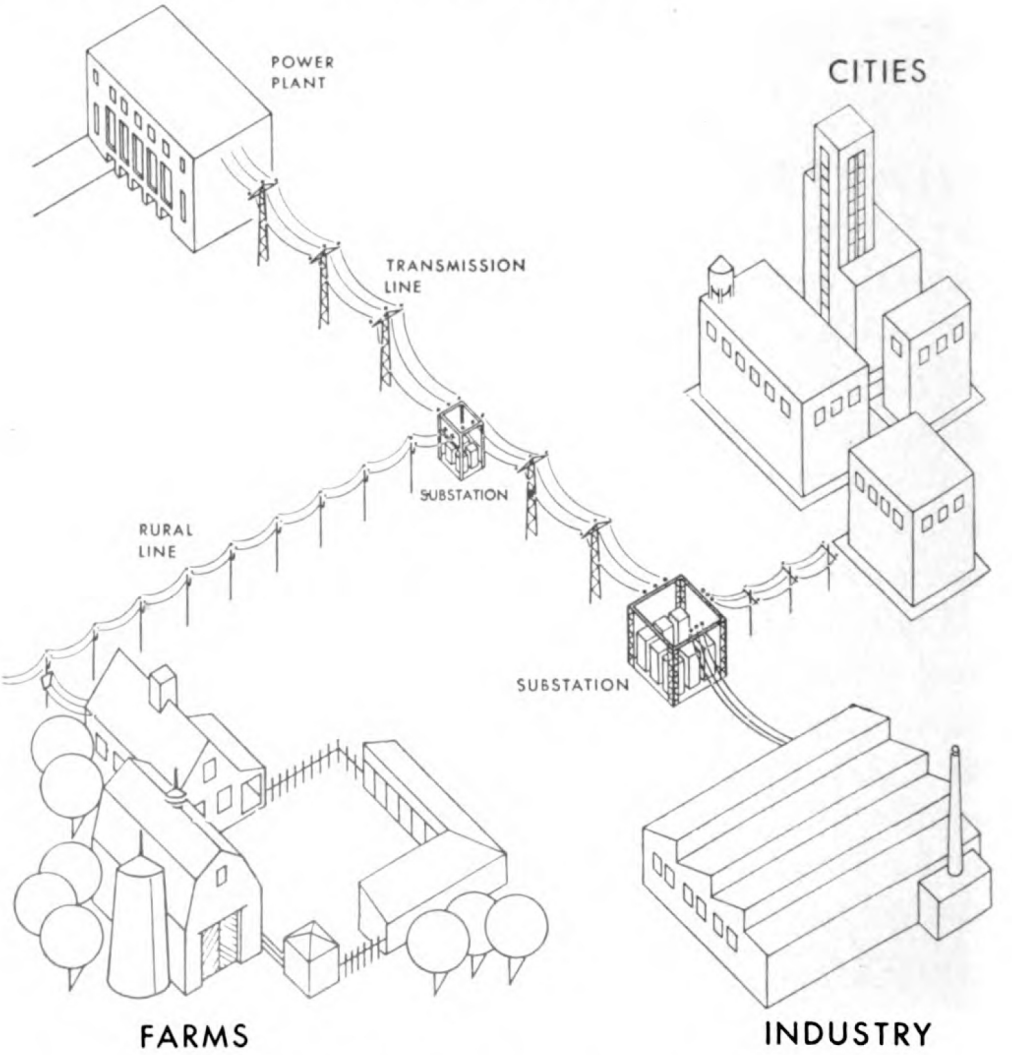
ELECTRIFICATION IN FRANCE



Each community symbol represents 5,000 communities.
Each man symbol represents 2,500,000 people.

per minute that flow out of a water pipe. Just as the horsepower of a flow of water is the product of water pressure times the rate of flow, so the kilowatts are

ELECTRIC POWER



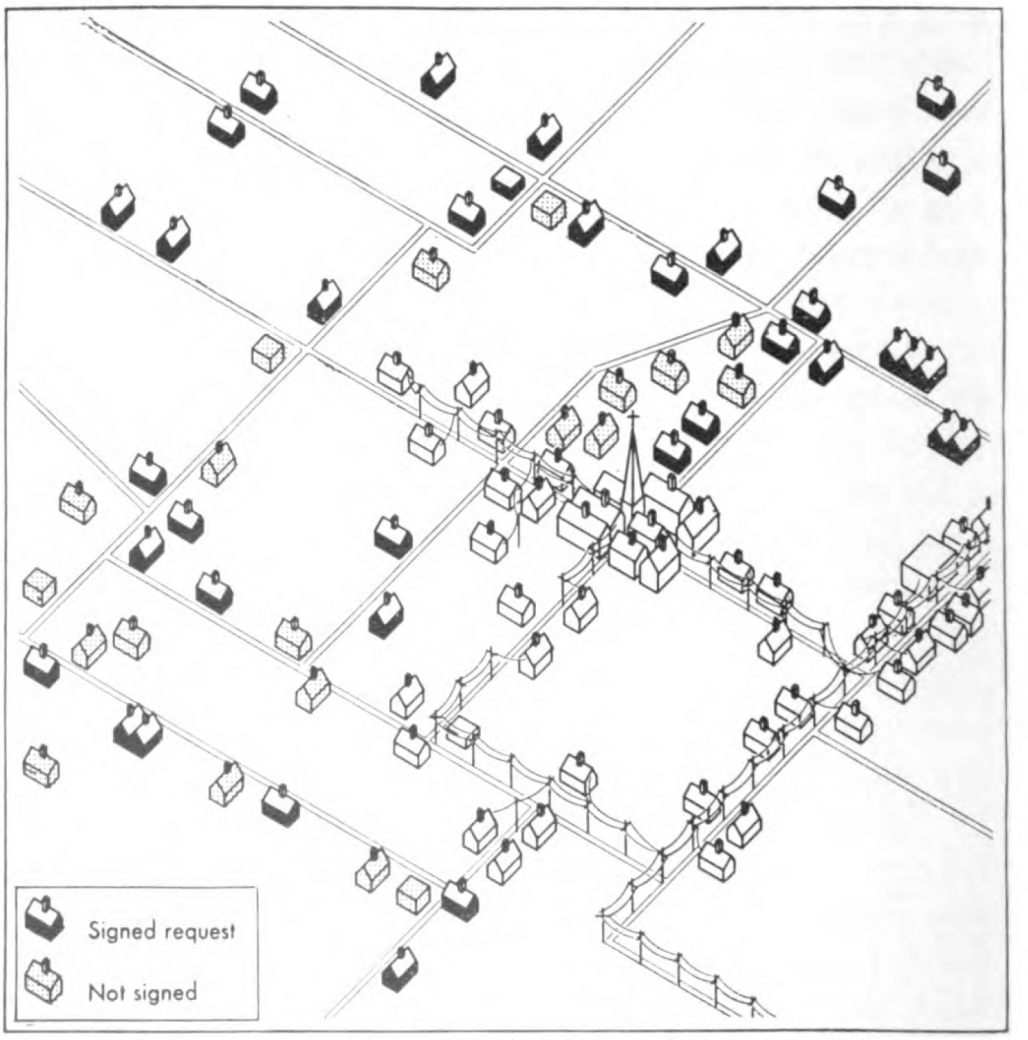
the product of the electric pressure, or volts, times the quantity of electricity, or amperes. For this reason a kilowatt may be delivered as a small current with a

POWER AVAILABLE ON FARMS IN 1930



EACH SYMBOL REPRESENTS 2,200,000 H. P.

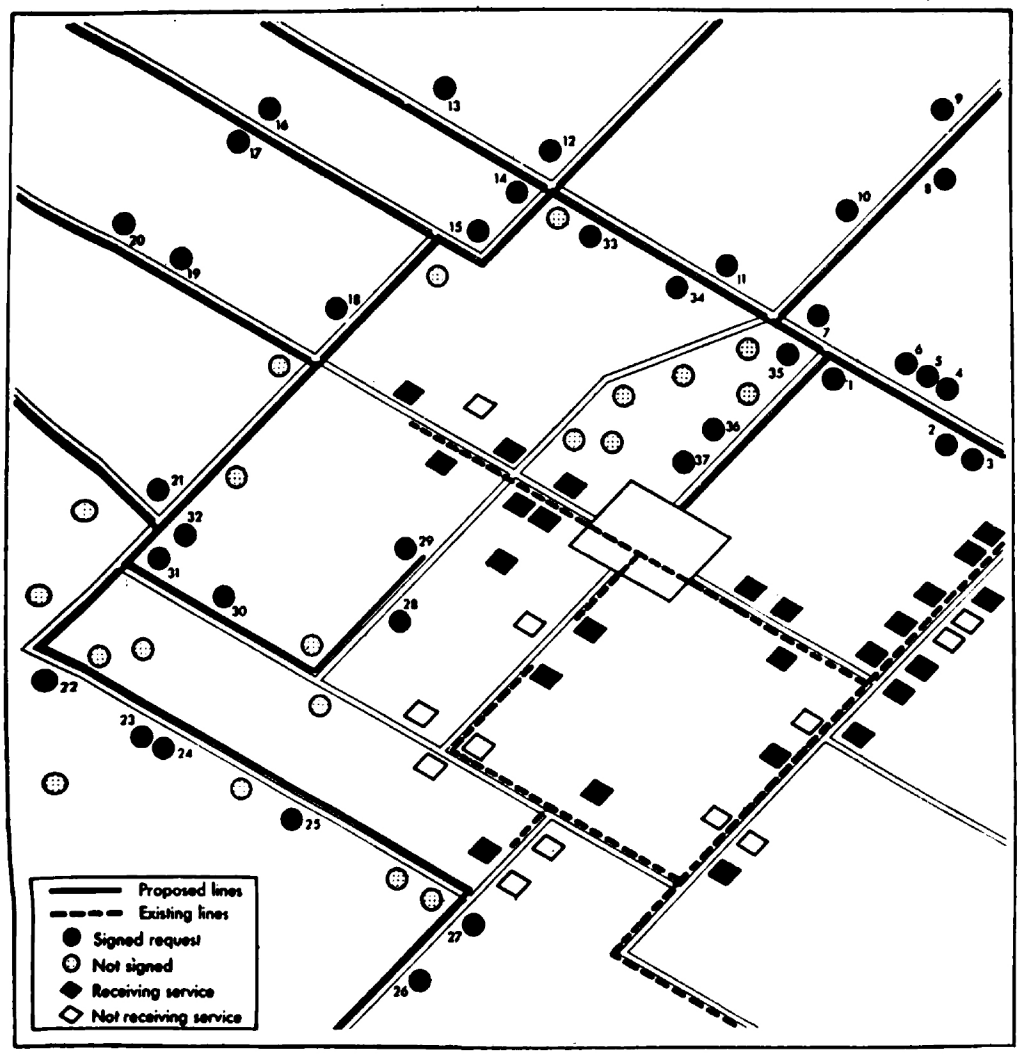
The power of windmills and water wheels is negligible.
Human labor power is not shown on this chart.



What rates does REA consider reasonable? REA does not set rates. It will consider local conditions in passing on existing or suggested rates. Normally it will lend for any line that offers rates which allow the farmers to use electricity profitably in quantity.

What can I do if I am too far away to connect to the line? If you want to, you can put in a separate plant of

WHAT YOUR MAP SHOULD SHOW



your own. Current from a separate plant is not as cheap as from a main line, but it is better than none. If you have your house properly wired for a separate plant making 32-volt electricity, and if the distribution line comes along later, your wiring will not be wasted. It will be good for 110-volt service.



TODAY WITHOUT ELECTRICITY

Electric Power on the Farm, *Rural Electrification Administration*

PLATE 2