Sun Electricity

Monday, Jul. 04, 1955

When Bell Telephone Laboratories announced its silicon solar battery (TIME, May 3, 1954), it fired the imaginations of the science fictionists, and the solar system was soon abuzz with solar-powered space ships. Trimming their silicon sails to catch the sunlight, spacemen used the electricity generated by the batteries to push themselves from planet to planet.

More practical imaginations were fired too. Last week National Fabricated Products Inc., a Chicago electronics manufacturer, announced that it has had more than 500 inquiries about the silicon batteries which it has just started making commercially under license from Bell Lab's parent company. Western Electric. Inquiries have come from industrial laboratories all over the world, including India.

Most customers ask for a dozen or so ($25 each), and seldom say what they hope to use them for.

N.F.P.'s version of the battery is a thin, blackish wafer about the size of a half dollar, enclosed in protective glass. It has two electric terminals like any other battery, and when it is exposed to bright sunlight it generates about half a volt. A square yard of the batteries would light a 100-watt lamp or run an electric fan. A few acres would give enough power for a fair-sized town.

Large-scale uses are unlikely until the price comes down. The batteries are expensive because they are made of highly purified silicon ($280 per lb.), which must be "grown" by a tricky process into a single crystal about the size of a fat banana. The wafers are cross sections one-fiftieth of an inch thick, and they must go through a subtle chemical treatment be fore they will work as batteries.

While the cost remains high, the chief practical uses will be to supply minute amounts of current for relays, electronic instruments or small radio transmitters.

Bell Labs, looking ahead, is experimenting with them for charging the storage batteries of rural telephone lines. Frames of them set on poles at Americus, Ga. are performing well, but Bell is worried about the effects of indifferent birds and stone-throwing boys.

President Maurice E. Paradise, of National Fabricated Products, is sure that the solar batteries can be made much more cheaply. He hopes that eventually the magic silicon can be sprayed on a surface as a crystalline metallic varnish. Then really big batteries will be cheap. They are rugged and last practically forever. A house roofed with sun-absorbing silicon could generate all the current it needs whenever the sun is shining.