

The palpable economic effects on the consumer's pocketbook will be important. Consider first the initial (and, later, the operating) costs to the car owner in terms of the difference between electric and non-electric cars, both produced at rates of, say 10^6 to 10^7 units per year. The production unit cost—and therefore price—for half of the car weight (body, trim, suspension, wheels, tires) should be essentially the same for both types of cars. In the remaining half of the vehicle weight, a major cost jump will be encountered, due to the cost of air-batteries being intrinsically higher per pound—perhaps 1.5 times⁹—than the cost of conventional car components. Thus, as a whole, electric cars will tend to be more expensive by one-fourth than their conventional counterparts of similar size and weight.

The mass marketing of electric automobiles will require a special (but not too novel) task: to convince the prospective automobile buyers to pay considerably more at the dealer's showroom than they would pay for gasoline-engine cars; and to trade off this significant increment (one-fourth of the initial cost) against the equally significant decrement in prospective operating costs over the ensuing years of car use. The unchangeable operating costs will still be: the interest on the capital, tire replacement, road and highway taxes, maintenance, insurance, and licensing fees. But a sizable lowering in operating expenditures will be derived by switching from gasoline and oil to electric energy. A reduction of about one-half in fuel costs might be expected. Integrated over the years of the car's life, this would more than offset the initial purchase price increase.

In essence: one prediction is that electric cars will be costlier to purchase and somewhat cheaper to operate, with the operational cost savings over the years adding up to a net benefit. Automobile manufacturers will profit more from the mass production and marketing of electric vehicles that are comparable to present cars, and have the added options of highly intricate and sophisticated motors and air-batteries being substituted for piston engines and automatic transmissions.

Electric utilities will welcome the advent of electric cars: electric power consumption in the United States would about double. The price of electricity might be reduced by one-tenth or one-fifth, particularly in view of the heavy nighttime power demands as batteries are being recharged at home.

Our mounting problems of urban air pollution, mainly due to emissions from the internal combustion engine, should be greatly alleviated by battery-operated cars. One of the most significant benefits from electric cars in the future might prove to be the abatement of automotive exhaust. These emissions are costing society billions of dollars, while degrading the quality of our cities' air. We cannot afford this rapidly growing socioeconomic loss to the Nation.

⁹ Lead-acid batteries are $1\frac{1}{2}$ times as expensive per pound as the average price per pound of the whole automobile. Zinc and nickel, primary candidate metals for fuel or electrodes in air-batteries, are cheaper per pound than lead.