U.S. is Becoming a Third-Rate Country

A third-rate country can be recognized as one whose infrastructure, such as its transportation system, is not regularly maintained and has not been regularly updated.

Much has been written about crumbling U.S. infrastructure. Here I concentrate on replacing antiquated transportation infrastructure with the latest systems, for which the U.S. is falling far behind many other countries.

The U.S. needs to move quickly to electric transportation because the boom in extracting tight oil and shale gas in the U.S. will peak within a decade and become a bust as extraction rates fall very fast. Electrical energy must mostly be generated from the sun (including wind), since generating it from dirty coal will make the disasters of global warming worse.

Fortunately, solar and wind energy facilities are increasing at an exponential rate in the U.S., but we are lagging far behind China and European countries. China's wind power is about one-third larger and increasing much faster than the U.S., and European Union's wind power is about twice that of the U.S. China's solar photovoltaic power is more than twenty times that of the U.S. We need to increase quickly the exponential rate of renewable energy growth. All parking lots and commercial buildings should be covered with solar panels. In Virginia solar farms on the outskirts of towns should be allowed to compete with electric-power monopolies. You can do your share by joining a Solarize program in your area to install a photovoltaic system on your property.

The U.S. ranks tenth in car market-share of pure electric cars: Norway is first at 5.75% and we are tenth at 0.28%. China is moving up very fast because of government mandate. There are many excellent electric cars available for lease now (lease instead of buy). The best car ever made according to auto experts is the U.S. Tesla. Japan's Nissan LEAF is the highest leasing/selling pure electric car. About 95% of the time electric cars are charged in garages or driveways, usually overnight, a convenience that one may not appreciate until one experiences it. There need to be many fast charging stations strategically located on major highways. Tesla has over 154 very fast (170 kilowatts) Supercharging stations on major travel routes in North America and is planning many more in the near future. Other electric-car companies may make a deal with Tesla to allow their cars to use the Superchargers. Norway leads the world in density of charging stations. Locally, there is a fast-charging station in Roanoke, the only one within a few hundred miles. We need to quit subsidizing fossil fuels for cars and switch to subsidies for electric cars and charging stations. After you drive an electric car a short while you will never want to drive a dirty, noisy, hot, smelly and slow fossil-fuel car again! With regard to electric cars the U.S. is about midway among the leading nations with good prospects for the future with proper state and federal support.

The U.S. is very far behind China and European countries in train systems. We have local trains only in large cities, compared to many other countries that have train lines between almost every town. We need to fix that to reduce crowded highways and energy use. We are far behind for high-speed rail service between major cities. The only fast train line under construction is between San Diego/Los Angeles and San Francisco/Sacramento, planned to have 800 miles of track by 2033. Three states with Republican governors rejected federal funds to build high-speed railroads. China has about 10,500 miles of high-speed rail and plans to construct 8,000 more miles. The line from Beijing to Hong Kong is 1,400 miles long for trains that travel over 200 mph. I lived in Japan for ten months in 1980 and greatly enjoyed riding the high-speed Bullet Train. I thought that surely we would have fast trains soon. Thirty-five years later we still do not have fast rail! We need to install a nationwide high-speed rail system for passenger and freight, partly to replace airplanes and trucks.

Using electricity to power trucks and airplanes is more difficult. We need to move personal and train transportation to electricity quickly so that the remaining hydrocarbon fuels can fuel smaller truck and airplane fleets. Eventually, when all fossil fuels have been burned, fuel for trucks and airplanes will have to be made from plants, probably biodiesel from algae.

China, Japan and Europe are capturing the renewable-energy and high-speed train world markets, leaving the U.S. in the dust.