



# Electric Vehicles Will Rule



**“Clean, renewable battery powered electric vehicles (BEVs) are now widely available to greatly reduce carbon to atmosphere pollution.**

**H. William Clark**

**[sustainabilityforlife.com](http://sustainabilityforlife.com)**

**Note: Communicating this information as news to others is free of charge.**

# Introduction

- America has a 100+ year tradition of using fossil-fuel powered vehicles for personal and business transportation.
- That tradition has been shattered by the recent production of mass-market BEV sedans and SUVs in great numbers.
- A BEV is not a hybrid and uses zero fossil fuel.
- All major vehicle manufacturers have announced plans to accelerate development and manufacture of BEVs over the next 2-3 years.
- BEVs, when the electric charging source is renewable, are virtually zero carbon emission vehicles.
- Widespread BEV adoption can greatly slow climate change and global warming.



# The Extraordinary Phenomena that is Tesla

- Tesla was founded in 2003, and in 2019, produced and delivered 360,000+ BEVs. One million BEVs per year will be achieved in a few years.
- The large investors in America... foundations, endowments, institutional investors, billionaires, hedge funds, etc.. are the bell-weather for future economic success.
- When they make a large investment in a company, it is a clear signal that major success is just around the corner.
- Market Capitalization is a measure of outstanding shares x share price, and indicates the size of a company.

	August, 2019	Sept. , 2020
GM and Ford Market Cap Combined	\$ 91.3 B	\$ 74 B
Tesla Market Cap	\$ 39.4 B	\$ 308 B

- Last year, Ford and GM combined were over 2 times the size of Tesla. In one short year, Tesla's market cap is now over 4 times the size of Ford and GM combined.

# The Extraordinary Phenomena that is Tesla, continued

- Yes, Tesla value can vary widely, but this one-year extraordinary change signals a major shift in automobile manufacturing.
- The primary reason investment has shifted to Tesla is the perception that Tesla is at least 3-4 years ahead of all their competitors in BEV technology.
- Other vehicle manufacturers are now playing “catch-up” in order to survive.
- These manufacturers will catch up, but it will take time, and some may surpass Tesla in technology.
- All Americans should take note of the enormous change to new BEVs, which will largely be complete within 10-12 years.
- Electric sedans, SUVs, buses and trucks of all sizes, will take over the American road, and many will be self-driving.
- America’s transportation carbon footprint will plummet.
- This change will contribute to a much improved future for America’s children and grandchildren.



# BEVs Cost Less over the Long-Term !

- All Americans will soon realize they can save money with BEVs.
- A typical BEV:
  - has 200 fewer parts than a fossil fuel vehicle
  - is cheaper to assemble
  - needs minimal on-going maintenance
  - Has lower fuel costs
- Experience with the Tesla Model 3 Electric Vehicle shows a lower cost of ownership over a 6-year (100,000+ miles driven) period of time, compared to a fossil-fuel vehicle. (1)
- Note: If a person takes trips in excess of 75 miles, they should seriously consider paying the extra money for a long-range vehicle (300+ mile range)
- The batteries in electric vehicles can last over 250,000+ miles. Used electric vehicles are now becoming available, which lowers initial cost.

## How an individual or family can change to a BEV

- Install a Level-2 (adds 30 miles of range per hour of charge) 240 V electric outlet (dryer plug) in the garage for charging electric vehicles overnight.
- Those who rent apartments or homes should contact the manager to ask for vehicle charging stations.
- Purchase battery electric vehicles (BEVs).
- Purchase electricity for your home from 100% renewable sources, such as wind and solar. Renewable Energy Credits can sometimes be purchased. If this is not available from a utility, write letters and communicate with government officials.
- Use an internet search to locate vehicle chargers on routes you will be traveling.
- Today in the U.S., only Tesla supercharging stations (Level 3) are widely available that can add 200+ miles of range in about 40 minutes (while the driver is in a restaurant, for instance).
- Existing Level 2 chargers only add 30 miles of range per hour of charge.
- Hence, if fast charging is desired on trips, a Tesla vehicle is the choice.

# How an organization can change to a BEV

- **Businesses, universities, schools, churches, and other organizations can lower their long-term costs by investing in BEVs.**
- **This includes the investment in BEV trucks and buses.**
- **Level-2 (adds 30 miles of range per hour of charge) 240 V electrical plugs can add 270+ miles of range across the night.**
- **BEVs have lower cost of ownership across 6 years, compared to a fossil-fuel vehicle. (1) This should interest any organization.**
- **Most any organization can purchase electricity for their buildings and charging stations from 100% renewable sources, such as wind and solar. Renewable Energy Credits can sometimes be purchased. If this is not available from a utility, write letters and communicate with government officials.**
- **The same facts concerning charging on trips apply (see previous page)**

# Impact on American Jobs

- The impact of widespread adoption of BEVs is described in “The Great Sustainability Compromise”.
- Millions of jobs in the old fossil fuel economy will shift to the new renewable power (sustainable) economy, particularly for BEVs.
- This will be a difficult 10-12 year transition. Workers will have to decide when to make their move to a sustainable job, or be caught in massive lay-offs.
- While this will be difficult, the end result is a new sustainable American transportation system that can operate for centuries with minimal harm to the environment.
- The future: by 2030, most new vehicles sold in America will be BEV technology.



# Americans should support EV Standardization

- All Americans should support standardization of:
  - BEV battery technology
  - BEV charging stations, connectors and equipment
  - BEV charging station electricity sourcing from renewable energy.
  - Recycle systems for used BEVs and batteries
- This standardization is vital as widespread adoption occurs for BEVs



## Citations

1. Inside EVs, December 31, 2019, How Much Does It Really Cost To Own A Tesla Model 3 Over Time?

H. William Clark, born in America, resides in Texas