Green Vehicles Improve the Economy: a Better Balance of Trade and New Jobs

PROBLEM: Imported oil represents over 30% of the trade deficit and transportation uses 67% of all the oil. Defense spending to keep our oil supply secure costs billions each year.

SOLUTION: *Reduce oil imports by increasing vehicle efficiency, shifting transportation to more efficient modes such as rail, mass transit, walking and biking, and using energy sources other than oil.*
Create jobs by producing transportation fuels domestically.

Vehicle Efficiency

By 2020, achievable improvements in vehicle efficiency would deliver four times the amount of oil that is economically recoverable from the Arctic. (Union of Concerned Scientists, Drilling in Detroit, 2001)

- Hybrid vehicles can reduce oil used by transportation 20-50% with today's technology. Hybrids, which combine a conventional engine for liquid or gaseous fuel with an electric drive system, can be much more efficient than conventional cars and deliver the same or better performance than a conventional car.
- Diesel vehicles are 10-20% more efficient than conventional gasoline vehicles.
- Electric vehicles can be 100% more efficient than conventional vehicles, even when the full fuel cycle is considered.

OTHER ENERGY SOURCES

Alternative Fuels

Biodiesel is a renewable liquid fuel produced from new or used vegetable oils. It can be used in diesel engines alone or mixed with diesel. It can reduce oil use by 77% if used at full strength (B100). It can be produced from land-intensive seed crops or no-till biomas. Its production is likely restricted to 10% of our transportation needs by availability of land and/or feedstock.

Ethanol is a renewable liquid fuel made by fermenting plant matter high in carbohydrates. It can be used alone or mixed with gasoline in conventional engines.

Natural Gas (CNG) is a naturally occuring fossil fuel, much of which can be domestically produced. Although it is a non-renewable fuel, it is more abundant than oil. An extensive delivery system is in place, as it is already used for heating and cooking. Infrastructure for vehicle fuel, however, is not in place, and presently there is a shortage due to recently constructed electric plants using natural gas.

Propane (LPG) is a by-product of natural gas processing and oil refining. Althouth it is a non-renewable fossil fuel, it is already used as cooking gas and could be used to meet some of our transportation needs.

Electricity and Hydrogen

T*echnically speaking, electricity and hydrogen are not fuels, but "energy carriers." They store and deliver energy.*

Electricity: Only 2% of US electric power plants use oil, so electric vehicles reduce oil use by 98% and they use energy very efficiently.

Hydrogen: Hydrogen can be created by extracting hydrogen atoms from a hydrocarbon fuel, such as natural gas, or from water (H2O). The extraction process uses a lot of energy. If extracted from water, electricity must be used, which in turn must be generated by some kind of fuel. Hydrogen can be used in an internal combustion engine or in an electric car with a fuel cell.

When weighing the options, the full fuel cycle must be taken into consideration, including extraction, refining and delivery.

Jobs and Domestically-Produced Energy: If we produce fuels or energy domestically, jobs will be created. Renewable energy technologies such as wind and solar tend to use more people per unit of energy produced than the oil industry.