**Annotated Bibliography by Section**

**IC Engine Fuels (HHV)**

United States of America. US Department of Energy. Energy Efficiency & Renewable Energy. *Fuel Properties Comparison*. N.p., 27 Feb. 2013. Web. 14 Apr. 2014. <http://www.afdc.energy.gov/fuels/fuel\_comparison\_chart.pdf>.

* Higher heating values were obtained from the US Department of Energy’s Alternative Fuels Data Center. The comparison chart that was used to obtain the higher heating values was updated on 2/27/2013. The higher heating values were obtained by using the Greenhouse Hases, Regulated emissions and Energy Use in Transportation (GREET) Model, version 1.7 from 2007. Compared to values we have discussed in class, as well as other reputable online sources, the higher heating values listed in the Fact sheet seem to be within reasonable limits for each fuel.

**Domestic Energy Consumed by Mode of transportation**

United States of America. Department of Transportation. Bureau of Transportation Statistics. *Table 4-6: Energy Consumption by Mode of Transportation*. N.p., 2011. Web. 13 Apr. 2014. <http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national\_transportation\_statistics/html/table\_04\_06.html>.

* Annual energy consumption figures for were obtained for “Highway” vehicles from 1990 to 2011. Table 4-6 lists energy consumption for air and mass public transit modes of transportation. It is important to note that figures from 2007 to 2010 were calculated using a new method developed by the FHWA. Energy consumption values for these dates are based on new categories not comparable to previous years. Essentially, for these later figures, the definition of “light trucks” was extended to include a wider range of vehicles.

United States of America. Department of Transportation. Bureau of Transportation Statistics. *Table 1-15: Annual U.S. Motor Vehicle Production and Factory (Wholesale) Sales*. N.p., 2011. Web. 13 Apr. 2014. <http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national\_transportation\_statistics/html/table\_01\_15.html\_mfd>.

* Annual U.S. motor vehicle production and wholesale for 2012 was found for commercial vehicles in Table 1-15 from the Bureau of Transportation Statistics. Commercial vehicles are noted to include trucks under 10,000 lbs and compacts, pickups, SUVs, minivans, vans, trucks and busses over 10,000 lbs. It is also important to note that factory sales can actually be greater that production because sales include inventory from the previous model year. This caveat is unlikely to have a significant effect on yearly sales.

United States of America. Department of Transportation. Bureau of Transportation Statistics. *Table 1-19: Sales of Hybrid Vehicles in the United States*. N.p., 2011. Web. 13 Apr. 2014. <http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national\_transportation\_statistics/html/table\_01\_19.html>.

* Annual U.S. Hybrid Sales figures were found from 1999 to 2012. It is important to note that US Hybrid sales consists of domestically produced hybrid vehicles, as well as imported hybrid vehicles. Sales include leased vehicles and fleet sales and domestics cars include those manufactured in Canada and Mexico. These caveats are unlikely to have a significant effect on the total domestic sales figures. Also, the first domestic hybrid was not introduced in the U.S. market until 2004.

**Domestic CO2 Pollution for Highway Vehicles**

United States of America. Department of Transportation. Bureau of Transportation Statistics. *Table 4-10: Estimated Consumption of Alternative and Replacement Fuels for Highway Vehicles*. N.p., 2011. Web. 13 Apr. 2014. <http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national\_transportation\_statistics/html/table\_04\_10.html>.

* Domestic CO2 pollution was calculated by using Table 4-10 above. This table lists total fuel consumed, for a variety of alternative fuels, in terms of equivalent gallons of gasoline. Information was provided from 1992 to 2011. Alternative fuels include natural gas, methanol, ethanol, hydrogen and electricity. It is important to note that Gasoline includes Ethanol and gasohol, and diesel includes biodiesel. Also, in 2003 onwards, the method used to estimate alternative fuel consumption was revised. It is also important to note that this graph has inherent bias. The graph shows that alternative fuel vehicles contribute relatively nothing to vehicle CO2 pollution, however we see from the next graph that the number of alternative fuel vehicles on the road pales in comparison to the number of gasoline and diesel fuel vehicles.

**IC Engine Alternative Fuel Vehicles in Use in the U.S.**

United States of America. Department of Energy. Energy Efficiency & Renewable Energy. *Alternative Fuel Vehicles in Use*. N.p., 2010. Web. 13 Apr. 2014. <http://www.afdc.energy.gov/data/10300>.

* The graph used in the link above lists alternative fuel vehicles in use in the United States between 1995 and 2009. The citation note that E85 fuel vehicles includes only fleet-based vehicles and excludes E85 fueling capability that are owned by individuals. The graph does not include hydrogen or electric as an alternative fuel because cars that use these specific types of fuels sources typically do not use an internal combustion engine.

**2013 Global Car Production**

"2013 PRODUCTION STATISTICS." *International Organization of Motor Vehicle Manufacturers*. N.p., n.d. Web. 13 Apr. 2014. <http://www.oica.net/category/production-statistics/>.

* Global automotive sales figures were obtain for 2013 from the International Organization of Motor Vehicle Manufacturers (OICA). This organization was founded in Paris in 1919 and has a mission to defend the interests of the vehicle manufacturers, assemblers and importers grouped within their national federation. This source stands in contrast to the domestic U.S. Departments of Energy and U.S. Department of Transportation. The organization’s memberships includes 37 national trade associations and includes all major automobile manufacturing countries.

**Trends and Innovation in Technology**

United States of America. National Highway Traffic Safety Administration. *Environmental Impact Statement for CAFE Standards, 2017-2025*. N.p., July 2012. Web. 13 Apr. 2014. <http://www.nhtsa.gov/Laws+&+Regulations/CAFE+-+Fuel+Economy/Environmental+Impact+Statement+for+CAFE+Standards,+2017-2025>.

* The National Highway Traffic Safety Administration provides much detail on the topic of Corporate Average Fuel Economy standards in their July 2012 update. Essentially, these standards are specifically dictated for vehicles of specific sizes, for specific model years. The report suggests fuel economy standards for vehicle model years 2017 and beyond. This source is very up to date and provides very detailed information into how standards were determined.

"Does Musk’s Gigafactory Make Sense?" *MIT Technology Review* (14 Apr. 2014): n. pag. 14 Apr. 2014. Web. 15 Apr. 2014. <http://www.technologyreview.com/news/526126/does-musks-gigafactory-make-sense/>.

* The article above was published yesterday and discusses the audacity of Tesla’s Gigafactory. The MIT Technology Review is a global medium for spreading technological news and information. It reaches 580,000 members with its newsletters and updates on a daily basis. The newsletter is affiliated with MIT, which was founded in 1899 as a place for technological innovation leadership.