

Aqua Auto

Calculating a car's water footprint



So, how do you like driving that swimming pool? A typical Volkswagen sedan consumes some 20,000 gallons of water over its life cycle, concludes a new analysis – putting more pressure on ecosystems facing water scarcity.

“So far, most water footprint studies published focus on agricultural products such as food, natural fibers, or bioenergy and biofuels,” a research team notes in *Environmental Science & Technology*. And while car companies such as Volkswagen have been keeping increasingly close tabs on the materials needed to manufacture their cars, they haven’t yet taken a close look at water use.

To fill that bucket, the researchers combed through data on three popular Volkswagen models: The Polo, the Golf, and the Passat. For each, they calculated how much water was used to produce, use and dispose of the car. They also developed “regionalized water inventories” of where the water was used, and looked for impacts on human health and ecosystems.

Overall, they found that water consumption ranged from 52 to 83 cubic meters of water per car model (13,658 to 21,900 gallons). The Polo was the least thirsty, at 51.7 cubic meters, with the Golf clocking in at 62.4 cubic meters and the Passat at 82.9. More than 95% of the water is consumed in the production phase, “mainly resulting from producing iron, steel, precious metals, and polymers,” the authors write. Water consumption takes place in 43 countries worldwide, but just 10% is consumed directly at Volkswagen’s production sites in Germany. The water demand could have impacts on human health in South Africa and Mozambique, where a lot of mining takes place, while it is mostly ecosystems in Europe that might feel the pinch from the auto industry’s water use.

The authors note that the numbers are lower than those reported by one past study, which estimated one car needed 400 cubic meters of water. That’s probably because the new study used more precise methods – including collecting data that showed that the precious metals used in car electronics and emissions control devices are responsible for a lot of water use. “The fact that less than 1 kilogram of precious metals is responsible for more than 20% of the overall water consumption throughout a Golf’s life cycle,” is a notable find, they say. That adds up to enough water to fill a backyard pool, and still have a little leftover for making iced tea. - *David Malakoff* | **March 25, 2012**

Source: Berger, M., Warsen, J., Krinke, S., Bach, V., & Finkbeiner, M. (2012) [Water Footprint of European Cars: Potential Impacts of Water Consumption along Automobile Life Cycles](#) . *Environmental Science & Technology*, 120321094325000. DOI: [10.1021/es2040043](#)