

Here are the calculations used to find the statistic: **76 million barrels of oil are needed just to manufacture, transport, store, and dispose of the bottled water that the U.S. uses in a single year. To put that into perspective, that's enough oil to fuel 4.3 million cars for one year.**

### **Background Information**

The total amount of energy embedded in our use of bottled water can be as high as the equivalent of filling a plastic bottle one quarter full with oil. ([Pacific Institute](#))

Americans bought 12.8 billion gallons of bottled water in 2016. ([Beverage Marketing Corporation](#))

The average fuel efficiency of 2016 model-year personal vehicles in the United States was 24.7 mpg. ([Environmental Protection Agency](#))

The average American driver drives 13,476 miles per year. ([Federal Highway Administration](#))

A standard 42-gallon barrel of crude oil makes around 20 gallons of gasoline and an additional 11 gallons of diesel fuel. ([U.S. Energy Information Administration](#))

### **Calculations (Part 1)**

Total Energy Per Year Embedded in our Use of Bottled Water (in Gallons of Oil):

$$\begin{aligned} &= \text{Amount of Bottled Water Bought Per Year (in Gallons)} \times \text{Percentage of Embedded Oil} \\ &= 12,800,000,000 \times 0.25 \\ &= 3,200,000,000 \text{ gallons} \end{aligned}$$

Unit Conversion from Gallons to Barrels of Oil:

$$\begin{aligned} &= \text{Amount of Oil in Gallons} \div \text{Number of Gallons per Barrel} \\ &= 3,200,000,000 \div 42 \end{aligned}$$

=76,190,476 barrels

**Therefore, 76 million barrels of oil are needed to manufacture, transport, store, and dispose of the bottled water that the U.S. uses in a single year.**

### **Calculations (Part 2)**

Fuel Required Per Car Per Year:

=Distance Driven Per Car Per Year ÷ Fuel Efficiency

=13,476 ÷ 24.7

=545.6 gallons

Gasoline Produced by 76 million Barrels of Oil:

=Number of Barrels × Gasoline production per barrel

=76,000,000 × 20

=1,520,000,000 gallons

Diesel Produced by 76 million Barrels of Oil:

=Number of Barrels × Diesel production per barrel

=76,000,000 × 11

=836,000,000 gallons

Number of Cars Fueled For a Year:

=Total Fuel ÷ Fuel Required Per Car Per Year

=(1,520,000,000 + 836,000,000) ÷ 545.6

=4,318,182 cars

**Therefore, 76 million barrels of oil is enough to fuel 4.3 million cars for a year.**

## References

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