



Paper Footprint Calculator and Environmental Benefits Fact Sheet

PayItGreen encourages businesses and consumers to change from paper to electronic billing and payments by highlighting the environmental benefits of doing so (e.g., pounds of paper saved, gallons of wastewater prevented from discharging into waterways, gallons of gasoline saved, and pounds of greenhouse gases avoided). All environmental benefits statements shown on the PayItGreen website (www.payitgreen.org) were generated using the Paper Footprint Calculator located at www.payitgreen.org. Businesses and consumers seeking to estimate their individual environmental impact of switching to electronic billing and payment can enter their information into the calculator, and discover the environmental benefits of switching to electronic billing and payments.

What is included in the calculator?

The Paper Footprint Calculator estimates the environmental impact of receiving a paper bill or statement and then subsequently mailing a paper payment. The calculator includes the environmental impacts of all steps in the life-cycle of a paper bill or statement from the manufacture of the paper, printing, shipment to the customer, submission of payment by the customer, and final processing by the bank. The calculator also includes the energy usage of a customer using his or her home computer to view statements and pay bills online, and the internet energy usage involved in processing the online bills, statements, and payments. Recently, the banking industry switched to electronic check clearing which eliminated some gasoline consumption and subsequently greenhouse gas emissions from the billing and payment process. Therefore, the gasoline consumption associated with the paper check clearinghouse and processing center steps was removed from the calculator.

The business calculator uses two inputs to determine the environmental impact of paper bills and statements: the number of bills and statements mailed each month and the number of paper payments received each month. The consumer calculator uses similar inputs, calculating the environmental impact based on the number of bills and statements received each month, and the number of paper payments sent each month. These inputs are then used to determine how many pounds of paper are consumed. From there, based on the pounds of paper, the calculator determines the number of trees consumed, amount of greenhouse gases emitted, gallons of wastewater discharged into lakes, streams and rivers, number of household garbage bags filled by waste from paper production, and gallons of gas consumed by the current number of bills, statements, and payments being mailed by the business or consumer. The calculator also helps businesses and consumers determine how much paper, greenhouse gases, water and gasoline could be saved depending on the target reduction in paper billing and payments.

What data sources and methodologies were used in the calculator and environmental benefits?

Several data sources were used in compiling the Paper Footprint Calculator. An independent study conducted for NACHA, “The Life and Travels of a Paper Check”, provided data on the amount of paper used in printing bills, statements, and checks annually and the amount of gasoline used in paper transport. Environmental Defense Fund’s Paper Calculator (www.edf.org/papercalculator) was used to derive data on the environmental impacts of producing paper, including: wood use; energy use; water use; solid waste; and greenhouse gases emitted. World Resources Institute’s Mobile Combustion Calculator Tool (<http://www.ghgprotocol.org>) was used to derive the amount of CO2 emissions generated from the gasoline consumed. EPA’s Greenhouse Gas Equivalency Calculator (www.epa.gov/cleanenergy/energy-resources/calculator.html) was used to derive greenhouse gas equivalencies from the amount of greenhouse gases emitted from the paper produced and from gasoline consumption.

The data on energy use of a home computer comes from energy savings calculators created by Energy Star (available at <http://www.business.gov/expand/green-business/energy-efficiency/calculate-savings/energy-saving-calculator.html>). Estimates of the amount of time spent paying bills online were provided by Pay it Green members, and the energy used to transfer data online was taken from the paper “Estimating Energy Use and Greenhouse gas Emissions of Internet Advertising” by Cody Taylor and Jonathan Koomey (available at <http://eetd.lbl.gov/emills/commentary/docs/carbonemissions.pdf>).

Further, there were two additional data sources used to generate the standard environmental benefits shown on PayItGreen.org. The 2006 U.S. Census Data was used to determine the average number of households in the U.S. and the 2006 U.S. Postal Service Household Diary Study was used to determine the number of bills and statements received by households in the U.S. and the number of payments made by households in the U.S.

For more details on the methodology used, please contact PayItGreen directly through the Contact Us page on www.payitgreen.org.