

# How Much Could You Save by Idling Less?

**Instructions:** In each row, start at the left and fill in the blanks with information about your equipment and costs. Then multiply or divide as shown. Some answers are used again. Where you see an arrow, copy the answer into the blank at the end of the arrow, so you can use it in the next step.

## Calculate Costs for Avoidable Idling

<b>1</b>	How much fuel is used for idling? If you don't know, look up the number in the table below.	Realistically, how many hours each year might you use IR devices instead of idling? <sup>a</sup>	What is the price of diesel fuel?	<b>Avoidable Idling Fuel Costs</b>
	<input type="text"/> gallons/hour	<input type="text"/> hours/year	<input type="text"/> \$ /gallon	= \$ <input type="text"/> /year +
<b>2</b>			What is your average fuel economy?	"Miles of idling" <sup>2</sup> (idling is like putting miles on your engine)
	<input type="text"/> gallons/hour	<input type="text"/> hours/year	<input type="text"/> miles/gallon	= <input type="text"/> miles/year
<b>3</b>	How much does an oil change cost?	How many miles between oil changes?		<b>Preventive Maintenance Costs<sup>1</sup></b>
	\$ <input type="text"/> /oil chg.	<input type="text"/> miles/oil chg.	= \$ <input type="text"/> /mile	<input type="text"/> miles/year = \$ <input type="text"/> /year +
<b>4</b>	How much does an engine overhaul cost?	How many miles between overhauls?		<b>Overhaul Costs<sup>1</sup></b>
	\$ <input type="text"/> /overhaul	<input type="text"/> miles/overhaul	= \$ <input type="text"/> /mile	<input type="text"/> miles/year = \$ <input type="text"/> /year =
<b>5</b>	Add right-hand column			= \$ <input type="text"/> /year

## Calculate Costs for Idling Reduction (IR)

<b>6</b>	How much fuel is used by the IR device?	How many hours each year could you use IR devices instead of idling?*	Price of diesel fuel (should equal price listed in line 1)	Fuel cost for IR device
	<input type="text"/> gallons/hour	<input type="text"/> hours/year	<input type="text"/> \$ /gallon	= \$ <input type="text"/> /year
<b>7</b>			Maintenance cost for IR device	<b>Operating Cost for On-board IR Device</b>
			\$ <input type="text"/> /year	+ \$ <input type="text"/> /year = \$ <input type="text"/> /year
<b>8</b>	Cost per hour to plug into EPS <sup>b</sup>	Enter hours plugged into EPS*	Cost to plug in	<b>Total Operating Costs for IR</b>
	\$ <input type="text"/> /hour	<input type="text"/> hours/year	= \$ <input type="text"/> /year	+ \$ <input type="text"/> /year = \$ <input type="text"/> /year

## Calculate Savings from IR

<b>9</b>	Capital cost of on-board IR device	<b>Savings</b> Line 5 – Line 8	<b>Payback Time</b>
	\$ <input type="text"/>	÷ \$ <input type="text"/> /year saved =	<input type="text"/> years

<sup>a</sup> IR: Idling Reduction

<sup>b</sup> EPS: Electrified Parking Space

\* Total number of hours from lines 6 and 8 should equal the number of hours in line 1

### How much fuel is used for idling (gallons/hour)?

Locate your idling engine RPM and the percentage of time you run your air conditioning (AC) while idling. The corresponding number is approximately how much fuel you use to idle. For example, 800 RPM with no air conditioning consumes about 0.64 gallons of fuel an hour.<sup>1,2</sup>

<sup>1</sup> "Analysis of Costs from Idling and Parasitic Devices for Heavy Duty Trucks," Technology and Maintenance Council Recommended Practice Bulletin 1108; issued 3/95 (reprinted 2003 by TMC/ATA)

<sup>2</sup> Lutsey, N.P., J.P. Wallace, C.J. Brodrick, H.A. Dwyer, and D. Sperling, "Modeling Auxiliary Power Options for Heavy-Duty Trucks: Engine Idling vs. Fuel Cells." *Society of Automotive Engineers* 2004-01-1479, October 2004.

RPM	AC off	AC on 50%	AC on
800	.64 gal/h	.70	.76
900	.73	.79	.85
1000	.81	.87	.94
1100	.92	.98	1.05
1200	1.03	1.09	1.15

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