



# High Gas Prices Got You Down? Drive Electric!

May 2005

Electric Auto Association (EAA)

*"Promoting the use of electric vehicles since 1967"*



*"US Government deficits lead to higher gas prices. Deficits lower US dollar value. World-wide oil prices are in US dollars; therefore oil producers raise price/barrel to counter the lower value of the US dollar." – 4/2/2004, "PBS's Now With Bill Moyers".*

*"U.S. gasoline demand will set a record in 2004." – US Energy Information Administration*

Gasoline is refined from crude oil and primarily used to fuel automobiles and light trucks<sup>1</sup>. You can avoid the cost and headache of rising gasoline prices by driving an electric vehicle (EV). An EV refuels at home. You simply plug it in, and let it charge while you sleep – using surplus (low-cost) electricity available at night (during non-peak hours).

## Why is the Price of Gasoline Rising?

Today's California gasoline price (the highest in the nation), adjusted for inflation, is still lower than in 1981 – the price peak. Our price is a bargain compared to the price paid in the rest of the world (over \$5/gallon in many countries)<sup>4</sup>. **It's estimated that if US government subsidies were removed, the price of gasoline in America would be between \$5.60 and \$15.14 per gallon<sup>5</sup>.** Petroleum is a non-renewable resource. Enormous price increases are inevitable given that the demand for gasoline is rapidly outpacing the world supply.

In contrast, the price for electricity has not drastically changed in the past 14 years. Electricity is generated locally, can be generated using renewable resources (solar, wind, biomass, geothermal), and is conveniently and safely delivered to our homes.

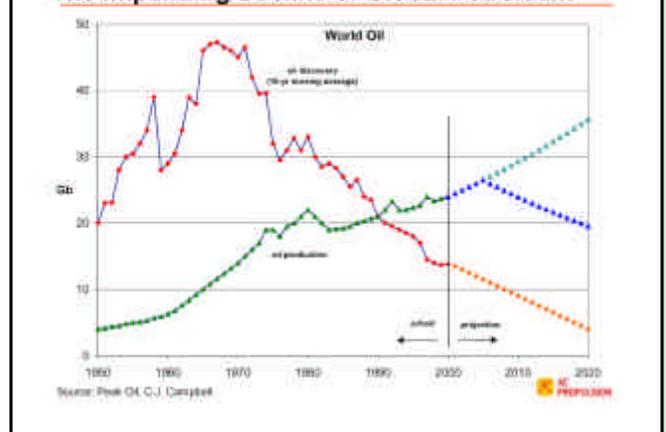
California Historical Prices

Year	Adjusted for Inflation		
	Gasoline <sup>2</sup>	Electricity <sup>2</sup>	(peak rate)
	\$/gal	\$/gal	\$/kWh
1970	\$0.34	\$1.32	(not available)
<b>1981</b>	<b>\$1.34</b>	<b>\$2.94</b>	\$0.0569
1990	\$1.09	\$1.42	\$0.1063
<b>2005</b>	<b>\$2.79</b>	<b>\$2.79<sup>3</sup></b>	<b>\$0.1238</b>

## Finite Resources

With 4% of Earth's population, the US consumes 25% of the world's total oil production<sup>6</sup>. Oil production has been declining since 1970 while US imports have risen by 67% since 1970<sup>7</sup>. According to "Peak Oil: An Outlook on Crude Oil Depletion"<sup>8</sup>: 1) oil discovery peaked in the 1960s; 2) we now find 1 barrel of oil for every 4 we consume; 3) Middle East share of production is set to rise (short-term); 4) the rest of world production peaked in 1997, and is therefore in terminal decline. This decline of global petroleum is not a re-run of the oil shocks of the 1970s. This **decline in production is driven by resource constraints, not politics, and is a permanent (not temporary) condition.**

The Impending Decline of Global Petroleum



<sup>1</sup> US Dept of Energy, [http://www.eia.doe.gov/pub/oil\\_gas/petroleum/analysis\\_publications/primer\\_on\\_gasoline\\_prices/html/petbro.html](http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/primer_on_gasoline_prices/html/petbro.html)

<sup>2</sup> California Energy Commission, [http://www.energy.ca.gov/electricity/rates\\_iou\\_vs\\_muni\\_nominal/residential.html](http://www.energy.ca.gov/electricity/rates_iou_vs_muni_nominal/residential.html)

<sup>3</sup> Highest price listed on <http://gaspricewatch.com>, on 5/16/2004; average price listed was \$2.10.

<sup>4</sup> [http://money.cnn.com/pf/features/lists/global\\_gasprices/price.html](http://money.cnn.com/pf/features/lists/global_gasprices/price.html)

<sup>5</sup> [http://www.icta.org/press/release.cfm?news\\_id=12](http://www.icta.org/press/release.cfm?news_id=12)

<sup>6</sup> <http://www.ucsusa.org/publication.cfm?publicationID=492>

<sup>7</sup> [http://pubs.wri.org/pubs\\_content\\_text.cfm?ContentID=1219](http://pubs.wri.org/pubs_content_text.cfm?ContentID=1219)

<sup>8</sup> <http://energycrisis.org/de/lecture.html>

*"EAA EV drivers have logged over 5 million clean and petroleum-free miles"*

*"By 2015, we will need to find, develop and produce a volume of new oil and gas that is equal to eight out of every 10 barrels being produced today" – Jon Thompson, President Exxon Mobil*

*"The Federal government recognizes that the steady growth of imported oil, to meet US requirements, cannot continue..."*  
 Spencer Abraham, US Secretary of Energy  
 (01/09/2002)

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## How Far Does Your Money Go?

Since most of our oil is imported, your gasoline money goes pretty far – overseas, that is. Electricity is much cheaper than gasoline, and is generated locally. The energy equivalent of one gallon of gasoline is 33.53 kWh of electricity (GGE)<sup>9</sup>. However, 1 GGE of electricity in an EV takes you 110 miles. Over 2 times farther than an HEV, and 11 times farther than a full-size SUV. An EV simply takes your money farther. Let's use a conservative price for gas.

2004	\$/GGE	Miles/GGE	\$/mile	Miles/GGE Efficiency Relative to an EV
Full Size SUV	\$2.00 <sup>10</sup>	10	\$0.200	<b>11X worse than EV</b>
Mid-Size SUV		17	\$0.118	<b>6.5X worse than EV</b>
Mid-Size Sedan		22	\$0.091	<b>5X worse than EV</b>
Compact Sedan		32	\$0.063	<b>3.5X worse than EV</b>
Hybrid (HEV)		50	\$0.040	<b>2.2X worse than EV</b>
EV (peak electricity)	\$4.15	110	\$0.038	<b>1</b>
<b>EV (off-peak, \$0.075/kWh)</b>	<b>\$2.66</b>	<b>110</b>	<b>\$0.022</b>	<b>1</b>

## What Can You Do?

**Everyday choices make a difference.** *Drive Less.* Use alternative forms of transportation, including public transportation, bike, walk, or telecommute. People are driving more than ever. The total Vehicle Miles Traveled (VMT) is increasing rapidly<sup>11</sup>. In California, VMT increased 93% from 1980 to 2000, while the population only increased by 37%; and VMT is projected to increase another 70% over the next 25 years.

*Drive Different.* Drive alternative-fuel vehicles, including vehicles powered by electricity, compressed natural gas (CNG)<sup>12</sup>, and bio-diesel<sup>13</sup>. Take the Clean Car Pledge<sup>14</sup> that your next car will be the highest mileage and "greenest" possible.

## Why EVs?

EVs offer the best and cheapest alternative to petroleum-based transportation. Driving EVs helps improve the quality of life for all Americans. But EVs are also needed for our energy independence and national security. EVs make use of technology that is readily available today to reduce our thirst for gas – we can't wait decades for potential alternatives, like fuel cell vehicles.



## About the EAA

The EAA is a non-profit educational organization that promotes the advancement and widespread use of electric vehicles and organizes public exhibits and events of electric vehicles to educate the public on the progress and benefits of electric vehicle technology.



**Electric Auto Association**

<sup>9</sup> US Dept of Energy, [http://www.afdc.doe.gov/p\\_single\\_fa.cgi?5](http://www.afdc.doe.gov/p_single_fa.cgi?5)

<sup>10</sup> Conservative (low) price for gasoline; lower than the May 16, 2005 average price of \$2.10/gallon.

<sup>11</sup> <http://www.transportationca.com/archives/CaliforniaStudy2001.htm>

<sup>12</sup> For more information on CNG powered vehicles, see [http://www.afdc.doe.gov/altfuel/natural\\_gas.html](http://www.afdc.doe.gov/altfuel/natural_gas.html)

<sup>13</sup> For more information on biodiesel powered vehicles, see <http://www.afdc.doe.gov/altfuel/biodiesel.html>

<sup>14</sup> <http://www.cleancarcampaign.org/pledge.shtml>