



INVESTING IN ENERGY

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Most investors are futurists!

There are two problems with being a futurist:

- ★ You must make the right choice.
- ★ You timing must be right.

**Even if you are right about
choice and timing, you must
also must pick the right
investment.**

How do you go about researching energy opportunities?

Try http://www.eia.doe.gov/oiaf/aeoref_tab.html

This will take you to the DOE, EIA Forecast Tables to the Year 2030

What do you learn?

Consumption is going up, Energy Intensity is going down, 10-Year TNote is going up, Real Disposable Personal Income is going up.

You also get their best guess about the future.

What else do you learn?

You learn that in the next 5-years:

Crude oil production is expected to be flat.

Natural gas liquids is flat.

Dry natural gas is flat.

Coal production is also flat.

Nuclear power is flat.

Hydropower is flat.

Biomass is up from a very low base.

Other renewables are going up from a low base..

Other fuels are going up.

Is there anything else to be learned that's important?

You learn that:

Consumption is going up – no surprise here!

The price of oil per barrel is going up from \$60.89 in 2009 to \$106.60 in 2014.

Gas cost is also going up slightly.

Coal is actually going down in price.

Electricity cost is also going down slightly.

So where is the opportunity? **Look further.**

Look at Table 16!

Municipal Solid Waste is going up.	2.7%/Yr
Wood/Biomass is also going up.	1.8%/Yr
Wind turbine growth is almost flat.	1.1%/Yr
Solar energy is compounding at a rate of	27.7%/Yr

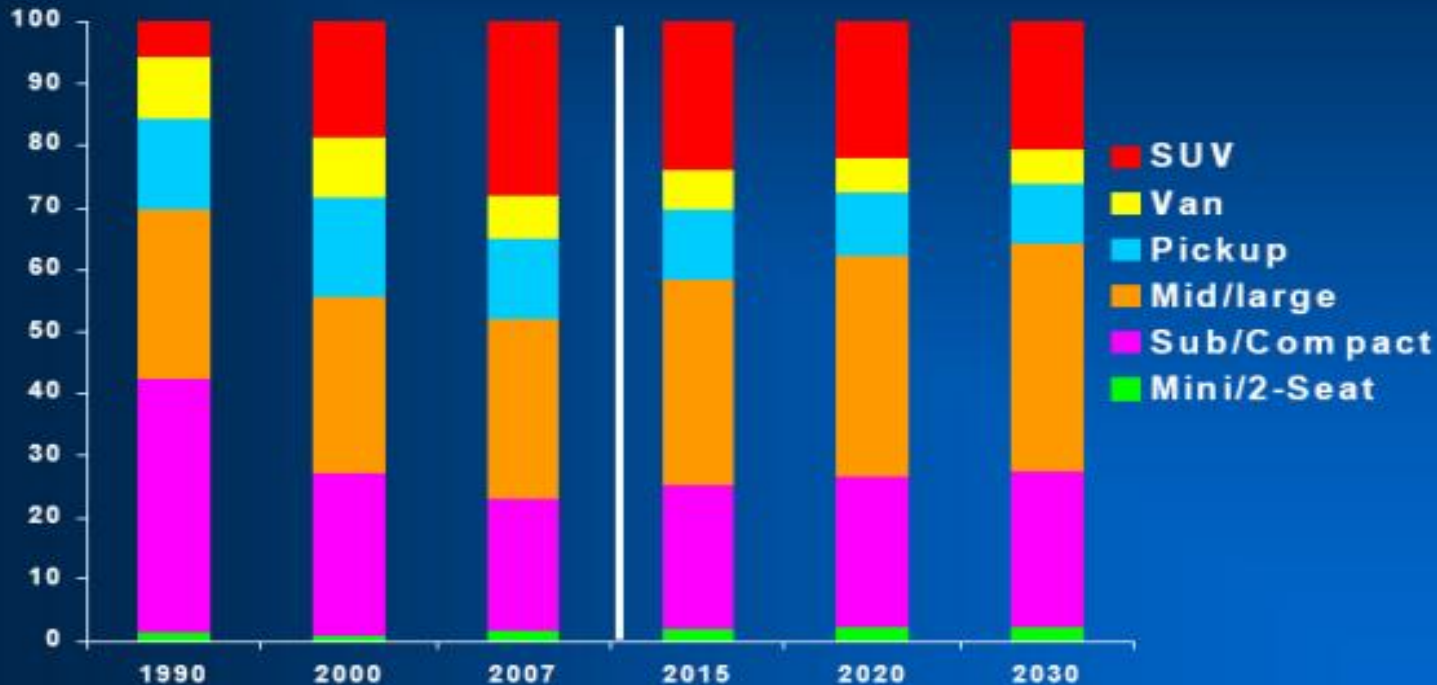
Do you see an opportunity here?

Do you believe the DOE?

What about cars and trucks?

New light-duty vehicle sales shift from light trucks back to cars

percent of total sales



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What kind of drive trains will these cars use?

Mild and full hybrid systems dominate new light-duty vehicle sales by 2030

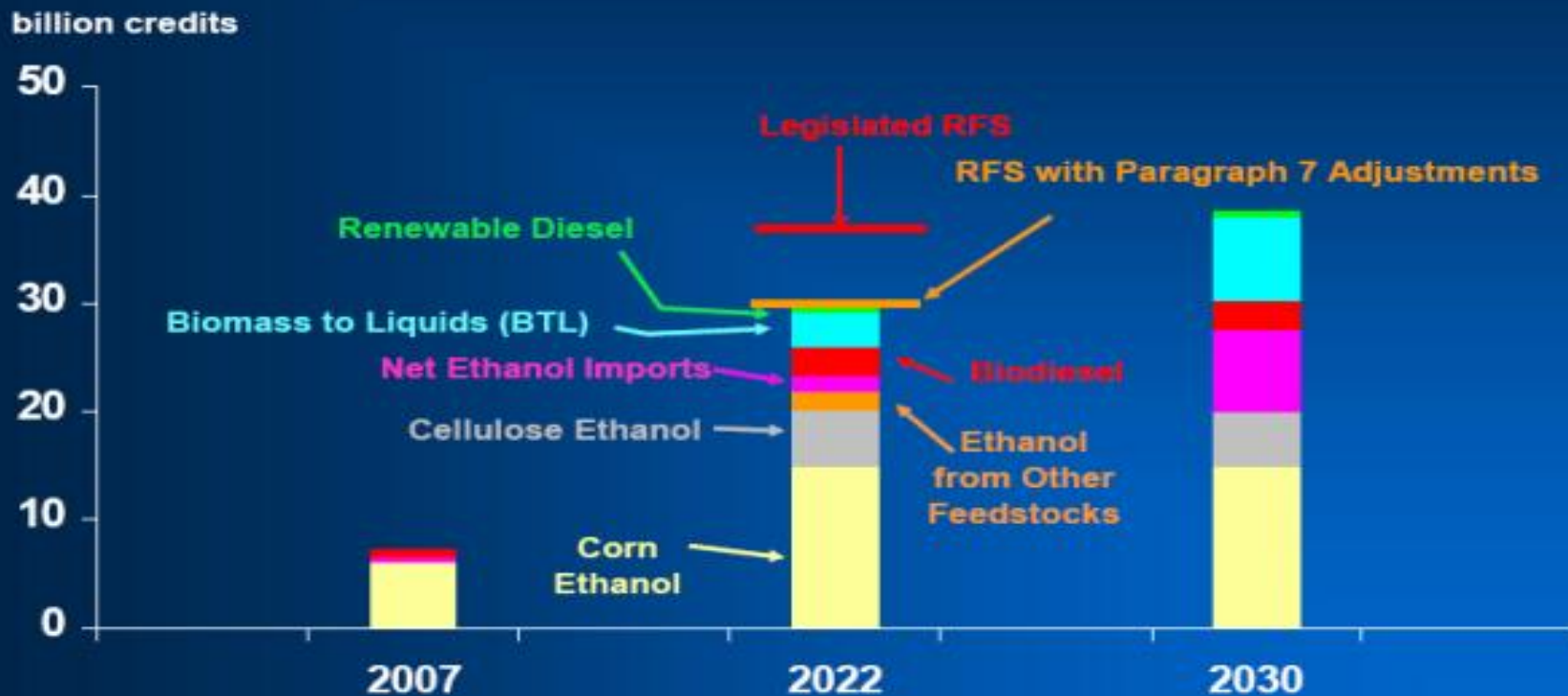


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What kind of fuels will cars use?

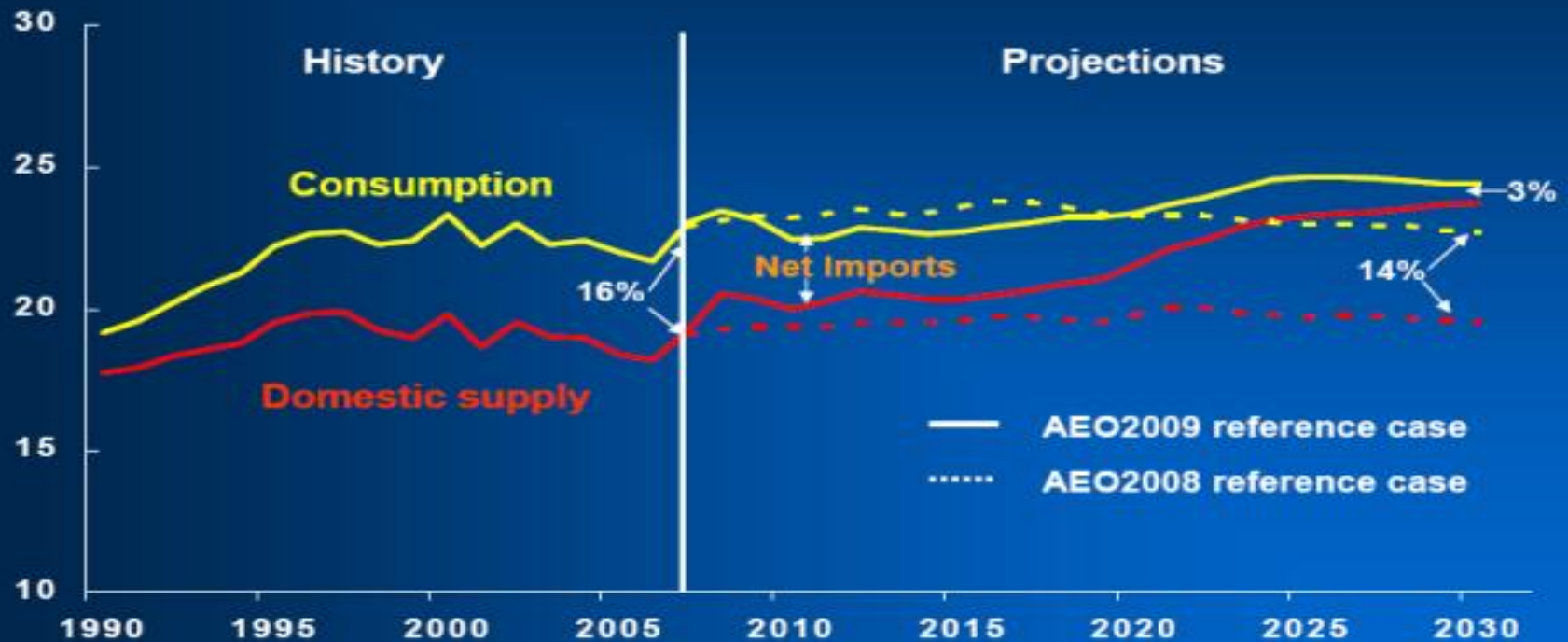
Biofuels use falls short of the 36 billion gallon RFS target in 2022, but exceeds it by 2030



Will we have to import natural gas?

The import share of natural gas supply declines sharply as domestic supply grows

trillion cubic feet



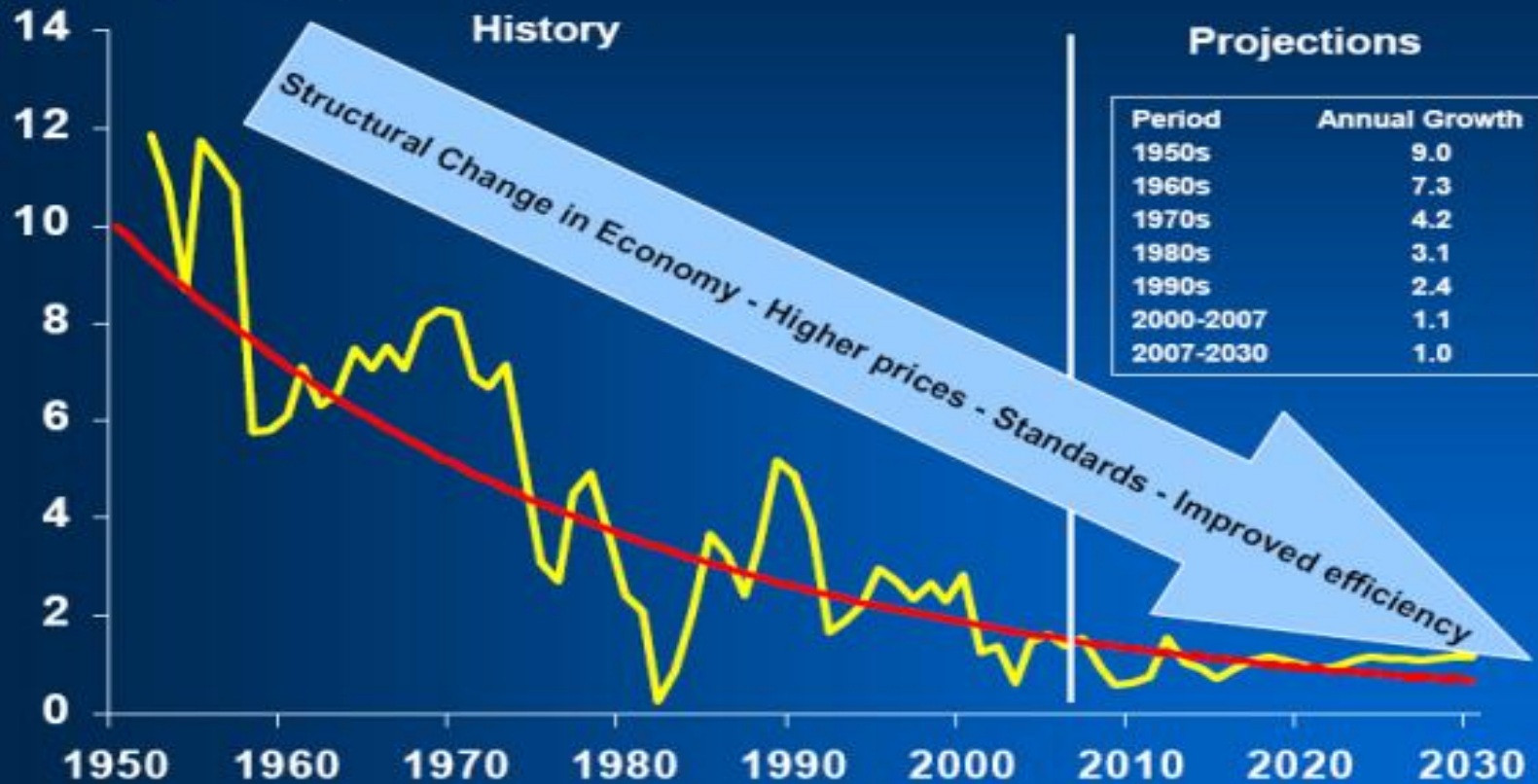
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What about the growth of electricity?

Growth in electricity use continues to slow

3-year rolling average percent growth

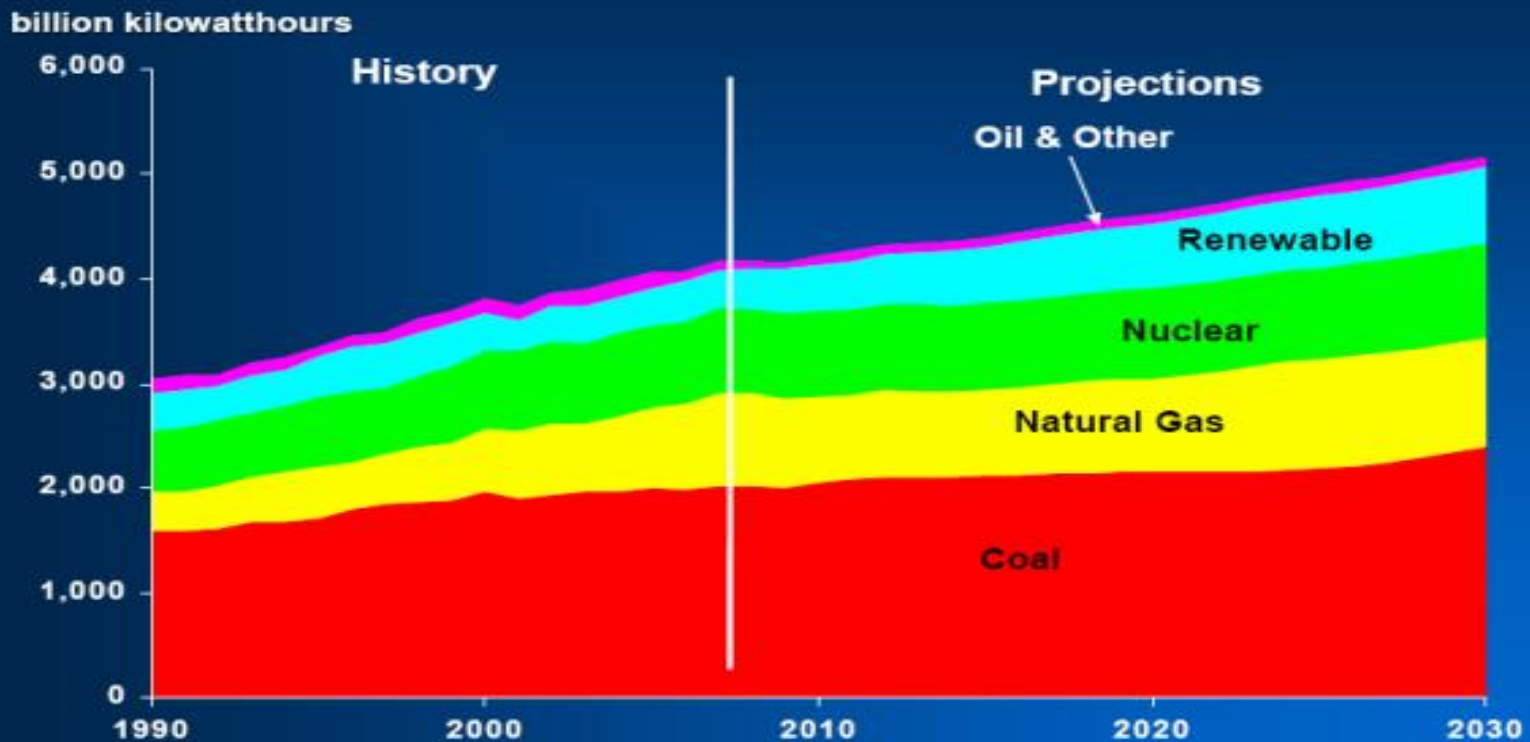


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How will generator's be powered?

Generation mix gradually shifts to lower carbon options

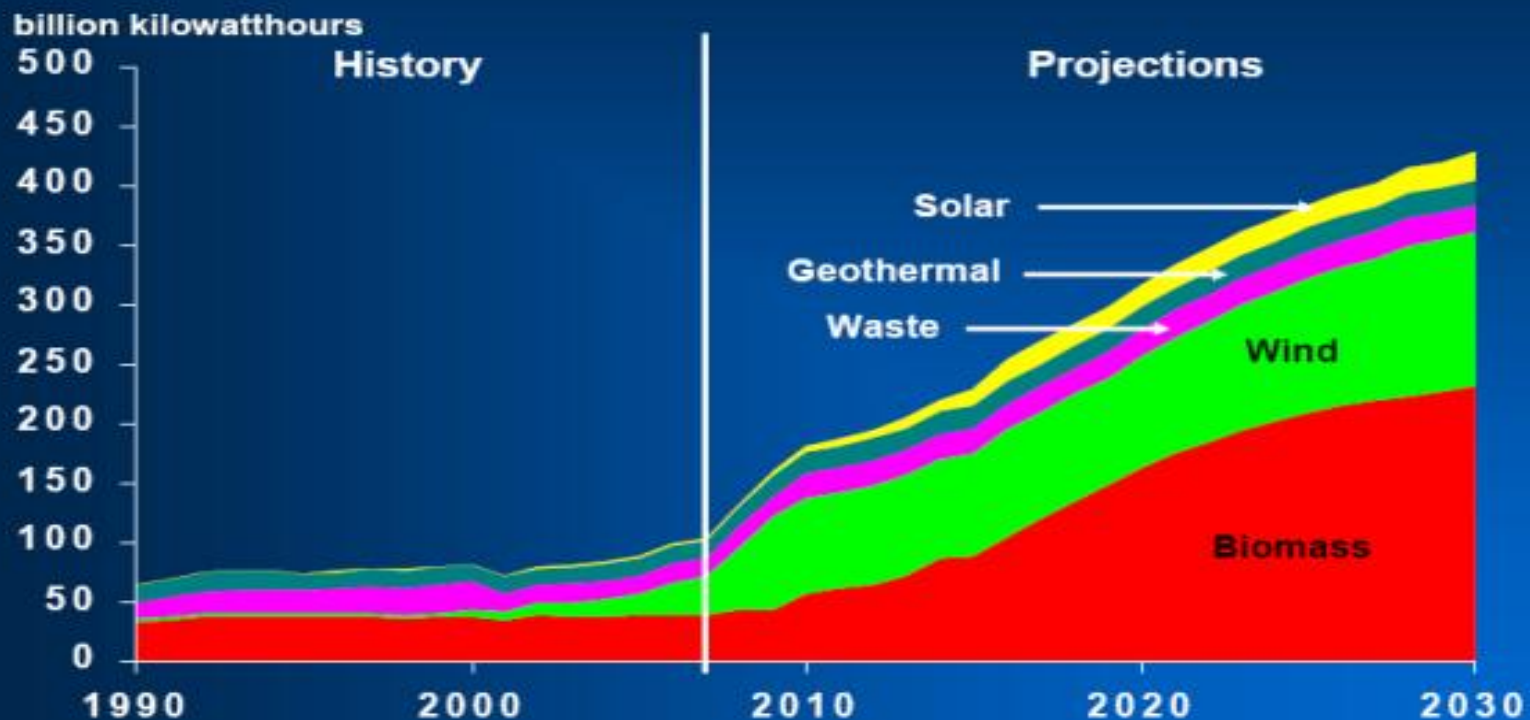


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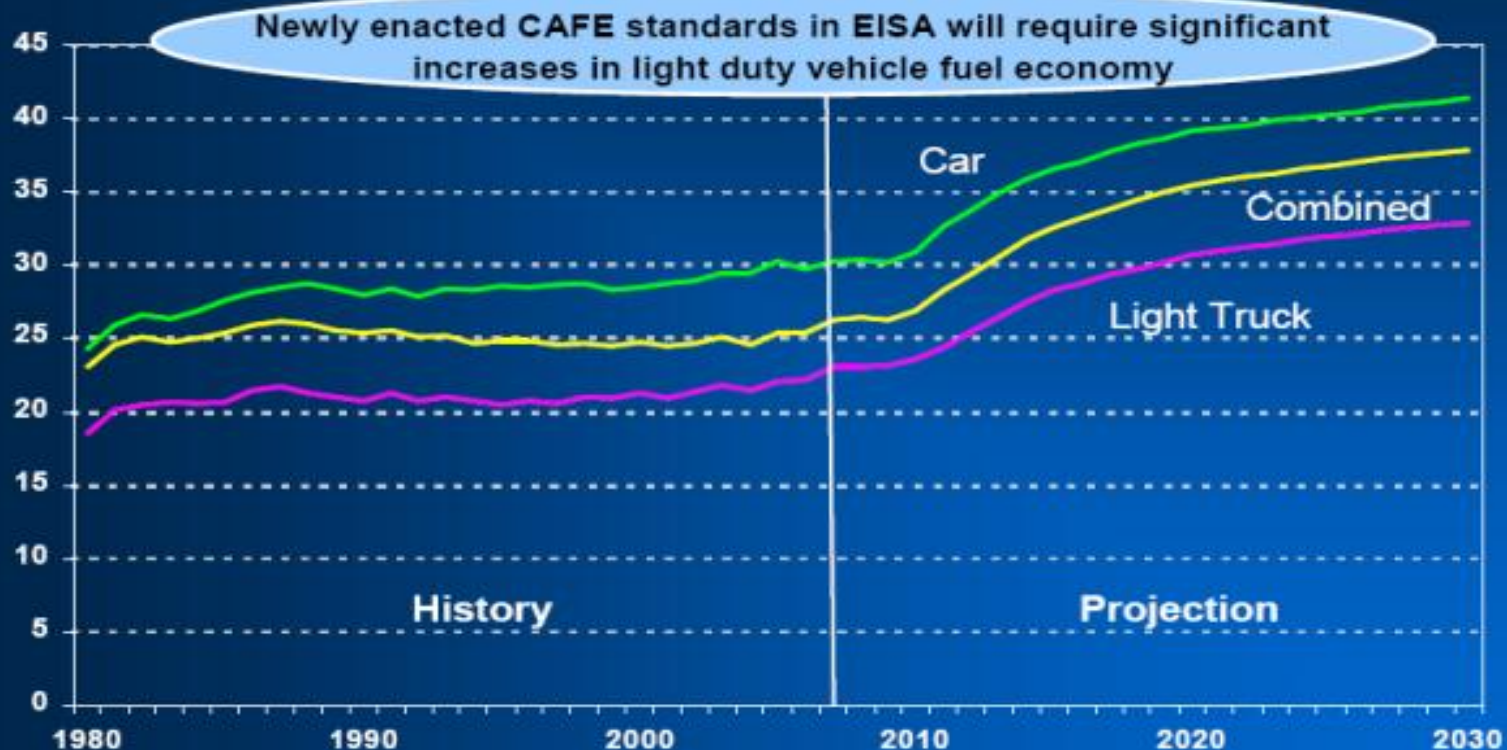
And the renewable winner is –

Nonhydropower renewable power meets 33% of total generation growth between 2007 and 2030



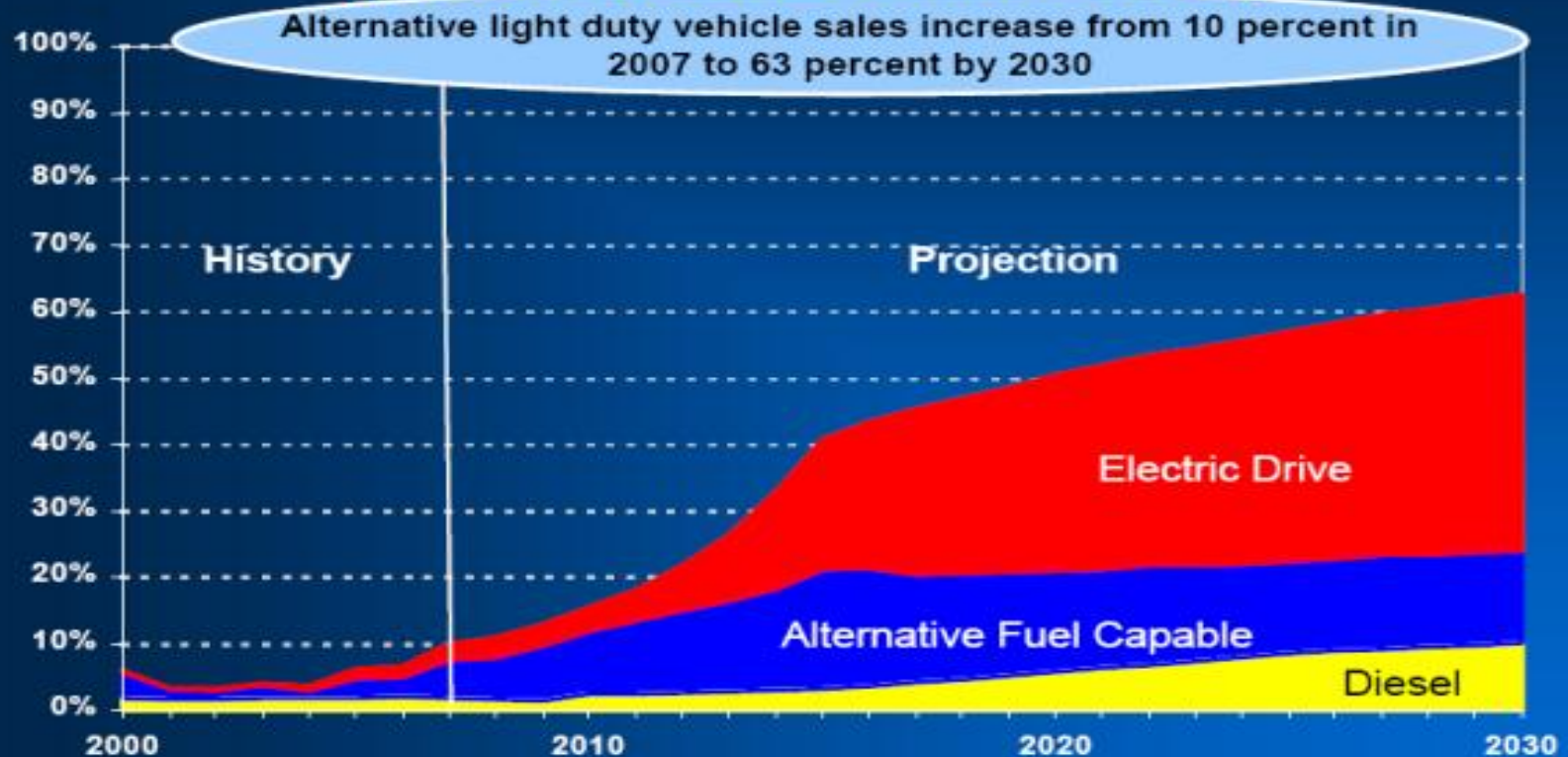
What will happen to fuel economy?

New Light Duty Vehicle Fuel Economy (miles per gallon, based on CAFE test)



What kind of car and fuel will you buy?

New Alternative Light Vehicle Sales (percent of total sales)



My investment advice: Go with the flow!

- **Don't invest in LNG.**
- **Solar energy is growing rapidly but from a small base. It will be a small factor far into the future.**
- **Biomass and wind energy are winners.**
- **Electric car drives in mid to large cars are winners.**
- **Anything related to domestic natural gas is a winner.**

What's the smart money saying?

Watching energy futures is a great way to identify “hot” markets. Go to:

<http://tfc-charts.w2d.com/marketquotes/ZQ.html>

Look for:

Crude Oil ... \$48.37 to 58.58 in 1 year

Coal ... \$59.08 to 59.47 in 1 year

Natural Gas ... \$4.518 to 6.593 in 1 year

Uranium ... \$50.00 to 64.00 in 1 year

These are on my watch list:

- COSWF ... Canadian Oil Shale ... largest Syncrude
- FSLR ... First Solar ... thin film solar cells
- DO ... Diamond Offshore ... Offshore drilling
- RIG ... TransOcean Inc. ... Drilling & services
- XTO ... XTO Energy
- CREE ... Cree ... LEDS
- PBR ...PetroBras ... Brazilian oil & shale
- SU ... Suncor Energy ... Athabasca
- PBEGF ... PetroBank ... active in the Bakken
- CSIQ ... Canadian Solar ... solar cells/systems
- HTE ... Harvey Energy Trust ... Oil and gas producer in Canada

Here are a few more to watch:

SPWRA... Sunpower ... Solar-electric

ESLR ... Evergreen Solar Power ... Solar cells

FSLR ... First Solar ... Solar-electric modules

HTM ... US Geothermal ... Geothermal power

ORA ... Ormat Technologies ... Geothermal

WND.V ... Western Wind Energy ... Turbines

ENOC ... EnerNoc ... Energy Control Systems

COMV ... Comverge ... Energy Capacity Soln's

GEX ... Energy ETF ... Alternative Energy

What about Nanosolar!

Nanosolar developed a process for printing photoelectric cells on a flexible substrate using a lithographic process. They can print photo cells by the mile.

Their current production is sold out for 3-years with the first year's production taken by Germany.

They are currently expanding their production.

They are privately owned!

Better yet ...

Google Energy investment strategies and take a good look at:

<http://www.EnergyInvestmentStrategies.com/peak-oil/>

Click on “Investment Ideas” in the left hand column and remember:

BUYER BEWARE

These are not recommendations, just suggestions.

Want to spend a great couple of hours?

Watch one of CalTech's seminars.

Go to <http://Today.CalTech.edu/theater>

Enter the word "Energy" in the box then choose one of these great seminars:

- ★ Jim Woolsey ... Energy Independence
- ★ Steve Koonin ... Energy Research at BP
- ★ David Goodstein ... Out of Gas
- ★ Nathan Lewis ... Powering the Planet

Here's what you have to watch for when investing in energy!

- ★ The OPEC cartel controls a major part of the world's oil supply.
- ★ They know what they need and what they have.
- ★ They know they have a limited resource that will run out soon.
- ★ They must maximize the total income from their resources because they have nothing else going.
- ★ They need money to keep their mobs quiet.
- ★ They know the western world is short-sighted.

(continued)

- ★ They know that the spread between the supply and demand of oil is very narrow.
- ★ By making small adjustments in the supply that can run the price of oil up or down at will.
- ★ When they run the price of oil down to the break-even price of coal or non-OPEC oil, western financial institutions become reluctant to finance energy projects.
- ★ We stop developing oil fields, mines and everything else related to energy so that we continue to remain vulnerable.