

## Peak Oil and The Madison Peak Oil Group

*"America is addicted to oil."* -President Bush, State of the Union Address 2006"

*"I believe we have peaked out at 85 million barrels of oil a day globally."* -T. Boone Pickens, 2008.

*"The Peak Oil Debate is essentially over and we have won. What remains is a quibble over timing."* –  
Dr. James Schlesinger, first Secretary of Energy, former Secretary of Defense and Director of the CIA,  
2010.

*What we need to do is to alarm the governments. [Big] growth in demand is coming from China, the Middle East, India... The question is whether... we can [sufficiently] increase production... Even if demand did not grow for the next 20 years, to compensate for the decline in existing fields,... we would have to find and develop four new Saudi Arabias....*

*Inadequate investment by oil producers risks an "oil crunch" in the next five years which will jeopardize any hope of world economic recovery.*

Fatih Birol, Chief Economist, International Energy Agency (IEA) 2008 and 2010

### UNDERSTANDING PEAK OIL

**The "Peak Oil" pattern is an essential key to understanding the history and the future of energy resources.** Oil production from finite resources can not increase ever upward or follow a straight line forward. The natural pattern for exploitation of a limited natural resources in a limited geographic area is a bell-shaped curve peaking at approximately the mid-point of resource extraction. This was discovered by M. King Hubbert, a petroleum geologist, observing the pattern in individual oil fields and production regions. In the beginning, discovery and consumption accelerate to a peak (or wider plateau) until half of the resource has been consumed. Past this point, the most easily accessible deposits have been exploited and production must shift to more difficult and expensive sources. **Production eventually dips into permanent decline--at varying rates and with temporary humps along the way.**

**Those who claim that this pattern is not universal are the widespread "cornucopians"—largely economists—who believe that oil production can be expanded almost without limits as new technology and investment are applied.** A related fallacy is that production will continue on an even plateau to exhaustion and that constant future oil supply can be anticipated by dividing total reserves by current consumption.

Hubbert successfully confounded these views when he predicted the peak of oil production in the U.S. in 1970 (see above chart.) **Based on similar analysis, a majority of world geologists and energy analysts predict a peak of world oil production somewhere between now and 2035, with steadily declining production thereafter.**

**Without adaptation, high fuel prices and supply shortages may render a severe shock to the U.S. economy, because we are highly dependent on a high constant flow of oil from world markets at relatively low prices.** Relatively small and temporary oil supply short falls and speculative price spikes in 1973, 1979 and 2008 caused very high gas prices and shortages and triggered severe recessions.

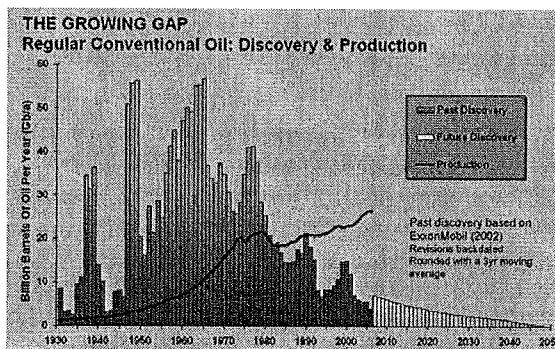
**When oil demand finally outpaces supply, the U.S. will face a severe and permanent drag on its oil-based economy. Without unlimited cheap oil, our car-based life-style and dispersed communities will be difficult to maintain. We can adapt successfully, but not without effort and change. Preparation now avoids suffering later.**

### WHY IS PEAK OIL A THREAT?

**#1 The key issue is the daily FLOW of OIL to the world market—not the ultimate oil in the ground—because operation of the modern economy depends on a continuous flow of liquid fuel.** Complex physical, economic and governmental factors can combine to limit flow below potential. Lately, many of these forces are becoming unfavorable.

**#2 The MIX OF "OIL" (or liquid fuels) of the future will be more difficult and expensive to extract per unit of energy produced.** According to the International Energy Agency, the availability of "Conventional" cheap, free-flowing, reasonably-accessible crude oil peaked in 2007, and will continue to decline in the future. This oil will be largely replaced by "unconventional oil" that must be extracted from deep offshore wells, remote Arctic locations, or heavy oil embedded in sand and rock. The energy produced versus the energy required for its production will be much less favorable than for crude oil.

**#3 The pace of OIL DISCOVERY has long ago fallen behind accelerated consumption.** The rate of world oil discovery peaked in the 1960s and there have been few new "giant" fields found since then.



**#4 The rate of DECLINING PRODUCTION from existing oil fields is very close to current capacity additions.** An International Energy Agency (IEA) survey of existing world oil fields found a depletion rate of 4.5% per year (twice previously estimated). If new projects falter, there is a serious risk of oil shock in the next few years.

**#5 NEW TECHNOLOGY OFFERS HOPE, but has not significantly changed the amount of oil discovered or the amount of oil that can be extracted from crude oil fields.** This is despite such advances as 3-D seismic exploration mapping, directional drilling, hydraulic fracturing, and deep sea technology—and in spite of high market prices and increased investment.

**#6 COST WILL LIMIT our ability to produce and use oil:** Oil prices above perhaps \$100 per barrel may drive our economy into recession. Unfortunately, these higher prices are needed to produce the new difficult oil. Some oil may prove too costly to produce.

**#7 THERE MAY BE A "PEAK EXPORT" POINT IN WHICH OIL SUPPLIED TO THE WORLD MARKET MAY DECLINE BEFORE TOTAL PRODUCTION PEAKS.** The International Oil Companies now control only 10% of the world's oil reserves, and must work in partnership with the OPEC cartel and National Oil Companies, which may not permit maximum production. 35 exporting nations have ceased exporting oil after their own production peaked.

**#8 HUGE NEW CONSUMERS NOW COMPETE for limited world supplies:** The oil demand of China, India and emerging nations is growing at over 10% per year. In the event of a price spike, they may be more able to pay inflated prices because of their larger financial reserves.

### WHEN WILL TROUBLE COME

The peak of world oil production cannot be precisely predicted because of the complex interaction of the many forces above.

- Many informed sources see oil production precariously balanced on a bumpy plateau since 2005—about 86 million barrels/day—subject to periodic "oil crunches" as demand recovery bumps into supply limits.
- Disruptions in the next five or so years may still be followed by production growth, but a growing number of expert fear that world oil supply is nearing permanent decline.
- Major Energy Agencies—the International Energy Agency and U.S. Energy Information Agency—implicitly recognize limits on oil production in 10 to 20 years, but do not want to be responsible for predicting an early or severe crisis.
- Cambridge Energy Research Associates (CERA), consultants noted for optimism, predict a peak plateau of oil production in 2025 through 2040—hardly very reassuring.

### WHAT IS TO BE DONE

**Personally understand the near term risk and long term inevitability of reduced energy supplies.** Overcome the psychological and political forces for denial.

**Support a dynamic national energy program to encourage reduced gasoline consumption and development of replacement fuel capabilities.** Prepare to support a range of measures from mileage standards to higher fuel taxes.

**Support a ten year restructuring of our transportation system locally and nationally.** Encourage robust local transit systems, high-speed intercity passenger rail, shifting freight from road to rail and water, and overall electrification.

**Personally reposition ourselves to use less transportation.** Use public transit or buy an electric or hybrid car. Live near work and vital services.

**Adopt a transition lifestyle** based on local resources of food and mutual assistance. Plant a garden.

### THE MADISON PEAK OIL GROUP

The Madison Peak Oil Group (MPOG) was founded under the leadership of RENEW Wisconsin, an organization promoting renewable energy, to broaden the community discussion of the energy future. MPOG members closely follow of the research of the Association for the Study of Peak Oil and Gas-USA (ASPO), which leads the discussion of the risks of constrained fossil fuel supplies. Locally, MPOG supports the restructuring of the area transportation system through a strong Region Transit Authority, and improved intercity bus and local transit systems. It is also participating in development of transitional lifestyles for the post carbon era.

### **What Can You Do Now?**

First, educate yourself from the abundant online resources: the Madison Peak Oil Group , ASPO-USA, The Oil Drum, and Post Carbon Institute.

Then come to a Peak Oil Group meeting at 222 S. Hamilton on the first Thursday monthly. Or invite a presentation to your group.

### **Contact Us**

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