

# The 21<sup>st</sup> Century Energy Initiative

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## You think it's bad, now?

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### Supply is Peaking; What about Demand?

Earlier in this book, supply (peak oil) was discussed, which is one half of the supply & demand equation. We also discussed the impact that energy-shifting from oil to electricity will have for utilities and infrastructure. But the book did not go into *detail* about the intense upward price pressure caused by developing countries.

That's what this appendix is about: Soaring demand.

### The "uh-oh" moment

In the course of writing this book, it became clear to me that our current oil-dependency problems are going to become far worse. The price of gas at the pump will become much higher. There will be rationing at the pump – far worse than in 1973. In fact, the memories of the 1970s will be much tamer than the probable future.

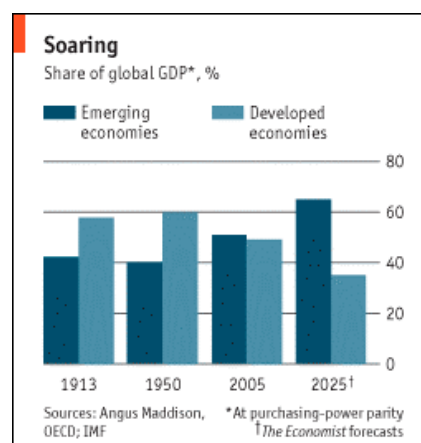
### Very soon, or in the near future

If the financial meltdown continues, the scenario provided above and described below will be postponed. It could be 3 to 5 years, or even longer... if a depression hits.

But it will happen.

Why am I so sure? Very simple: the numbers don't lie. What numbers am I talking about? The *current* growth statistics in developing countries.

Emerging economies share of global Gross Domestic Product (GDP) surpassed that of developed countries in 2005. They will continue to grow, too.



By looking at how (just) two of the developing countries' automobile adoption rates compared with the United States', you will quickly realize we are in an "Uh-oh" moment, and that things will get far, far worse.

### The numbers don't lie

With a little research and a little more math, one can determine that by the time China and India catch up with America's standard of living (as measured by the number

of cars per 1000 people), by 2024 the world will need over 12 times as much oil as it uses now.

The United States has 770 cars per thousand people, while China has 22/1000 and India has 25/1000. This alone is not unsettling. Their growth rates – and what these rates portend – are.

The annual growth rate for vehicles in China is 25%, while India's is 30%. Extrapolating these rates... to where China & India's cars per thousand people equals the U.S.'s, one can quickly see that by the year 2024 (assuming the U.S growth rate is 6% and India's growth continues), the world will need twelve times more oil than it is currently using, now.

Of course, this assumes the current fuel efficiencies and sustainable growth rates. Clearly, neither the

growth rate nor oil consumption is sustainable, but it gives one pause. And it points to [1] a large push toward electric cars and [2] the need to *innovate* our way out of this conundrum. Which (again) points to the need for renewable energy technology acceleration.

What if China & India's standards of living come up to the U.S.?

China		India		Sub-Total		Total		Factor x current production	
Year	Million cars	Year	Million cars	Million cars	U.S.	Plus U.S.	World capacity	World capacity	Factor x current production
2008	29	2008	28	57	231	288	100%	1.00	x
2009	36	2009	36	73	246	319	111%	1.11	x
2010	45	2010	47	93	262	355	123%	1.23	x
2011	57	2011	62	118	279	397	138%	1.38	x
2012	71	2012	80	151	297	448	156%	1.56	x
2013	89	2013	104	192	316	509	177%	1.77	x
2014	111	2014	135	246	337	583	202%	2.02	x
2015	138	2015	176	314	359	673	234%	2.34	x
2016	173	2016	228	401	382	783	272%	2.72	x
2017	216	2017	297	513	407	920	320%	3.20	x
2018	270	2018	386	656	433	1089	378%	3.78	x
2019	338	2019	502	839	461	1301	452%	4.52	x
2020	422	2020	652	1074	491	1566	544%	5.44	x
2021	528	2021	848	1376	523	1899	660%	6.60	x
2022	659	2022	1102	1762	557	2319	806%	8.06	x
2023	824	2023	1433	2257	594	2851	990%	9.90	x
2024	1030	2024	1863	2893	632	3526	1225%	12.25	x

Notes:  
2008 - for the U.S., China & India is "normalized" such that current # of cars = current oil production  
China hits it "US-standard" of 770 cars / 1000 people in 2024 and India does so in 2022

Sources:

- ⇒ China: [www.chinadaily.com.cn/bizchina/2007-02/16/content\\_811160.htm](http://www.chinadaily.com.cn/bizchina/2007-02/16/content_811160.htm)
- ⇒ India: [www.indiacar.net/news/n9610.htm](http://www.indiacar.net/news/n9610.htm)

**About the Author:**

Mark has led small to public companies in interim executive roles, and has consulted with hundreds of small to mid-sized companies. He has successfully brought advanced technology to market over the past 30 years. He held senior executive positions at a Northrop Corporation, where he built an international technology business unit in 2 years. Mark had full P&L responsibility for this business unit. He is an Executive-in-Residence at Oregon's Technology Business Incubator, published *The Entrepreneur's Survival Guide*; and *How to Attract Significantly More Customers*; has a degree in Physics (U.C.I.), a patent and is passionate about enabling the United States to be a net-exporter of renewable energy / technologies. He is President & CEO of NXergy, Inc. – a Renewable Energy Technology Accelerator.

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