Edison Electric Institute

Power by Association℠

2012 Outlook

Economic, Legislative, Regulatory

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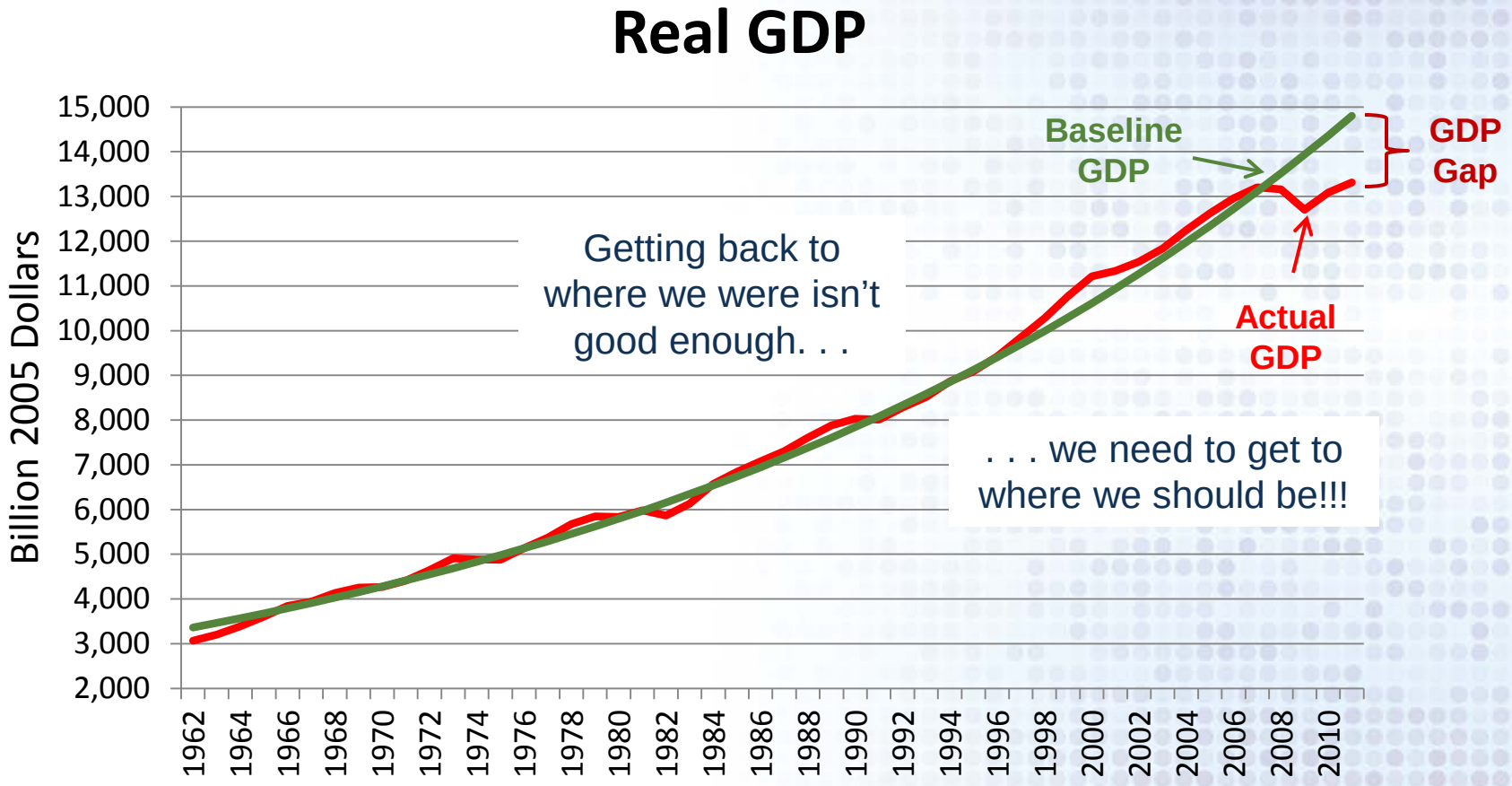
Is the Economy Back to Normal?

Hardly!!!



The Economy in 2011
Expectation vs. Reality

PREDICTED

Real GDP Growth
3.1%

Inflation
2.0%

ACTUAL

Real GDP Growth
1.7%

Inflation
3.3%

Predictions are from 2nd Quarter 2010 Survey of Economic Forecasters, Federal Reserve Bank of Philadelphia

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Severe Snowstorms in the Eastern U.S.

Disasters in Japan

Hurricanes and Severe Flooding in New Jersey and Pennsylvania

S&P Downgrade of U.S. Debt

European Sovereign Debt Crisis

Revolutions in the Middle East and North Africa

Brinkmanship in Washington over Fiscal Policy and the Debt Ceiling

The Great Recession
Recipe for Economic Stagnation

Recession Start Year	GDP Loss	Duration (Months)	GDP Growth in 1st Year of Recovery	GDP Growth in 1st Two Years of Recovery	Avg. Employment Growth in 1st Year of Recovery (Jobs/Month)	Avg. Employment Growth in 1st Two Years of Recovery (Jobs/Month)
1948	-1.6%	11	13%	19%	314,000	211,000
1953	-2.6%	10	8%	10%	129,000	148,000
1957	-3.7%	8	8%	13%	191,000	158,000
1960	-1.6%	10	8%	11%	136,000	111,000
1969	-1.1%	11	4%	12%	120,000	190,000
1973	-3.2%	16	6%	10%	200,000	198,000
1980	-2.2%	6	3%	2%	147,000	(13,000)
1981	-2.9%	16	8%	14%	257,000	300,000
1990	-1.4%	8	3%	6%	(20,000)	58,000
2001	-0.3%	8	2%	6%	(47,000)	(31,000)
2007	-5.1%	18	3%	5%	(43,000)	23,000

Severe Recession + **Weak Recovery** = **Economic Stagnation**

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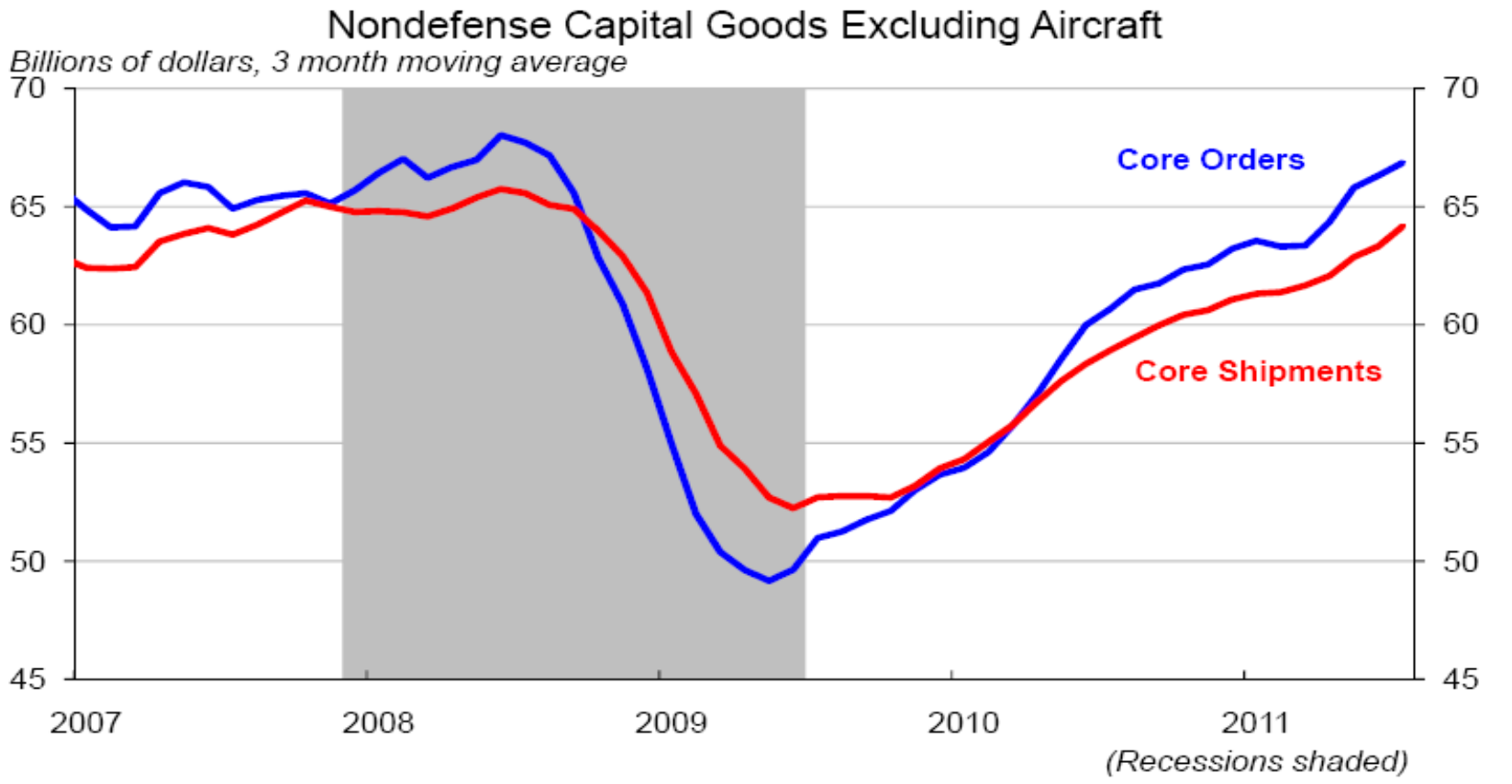
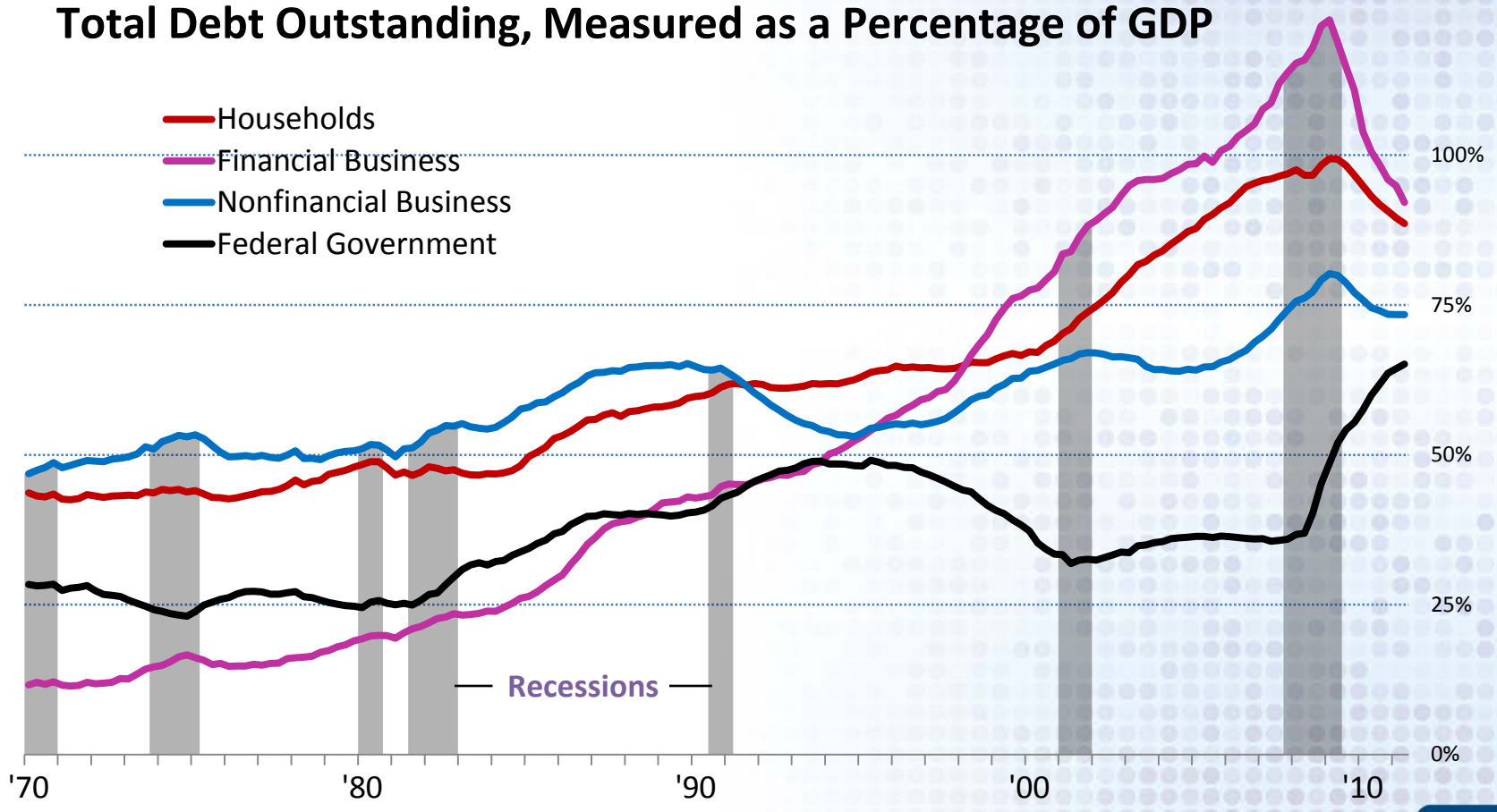
Some "Green Shoots" I: Business Investment Is Growing



Green Shoots II: All Sectors (Except Federal Government) Have Been Reducing Debt

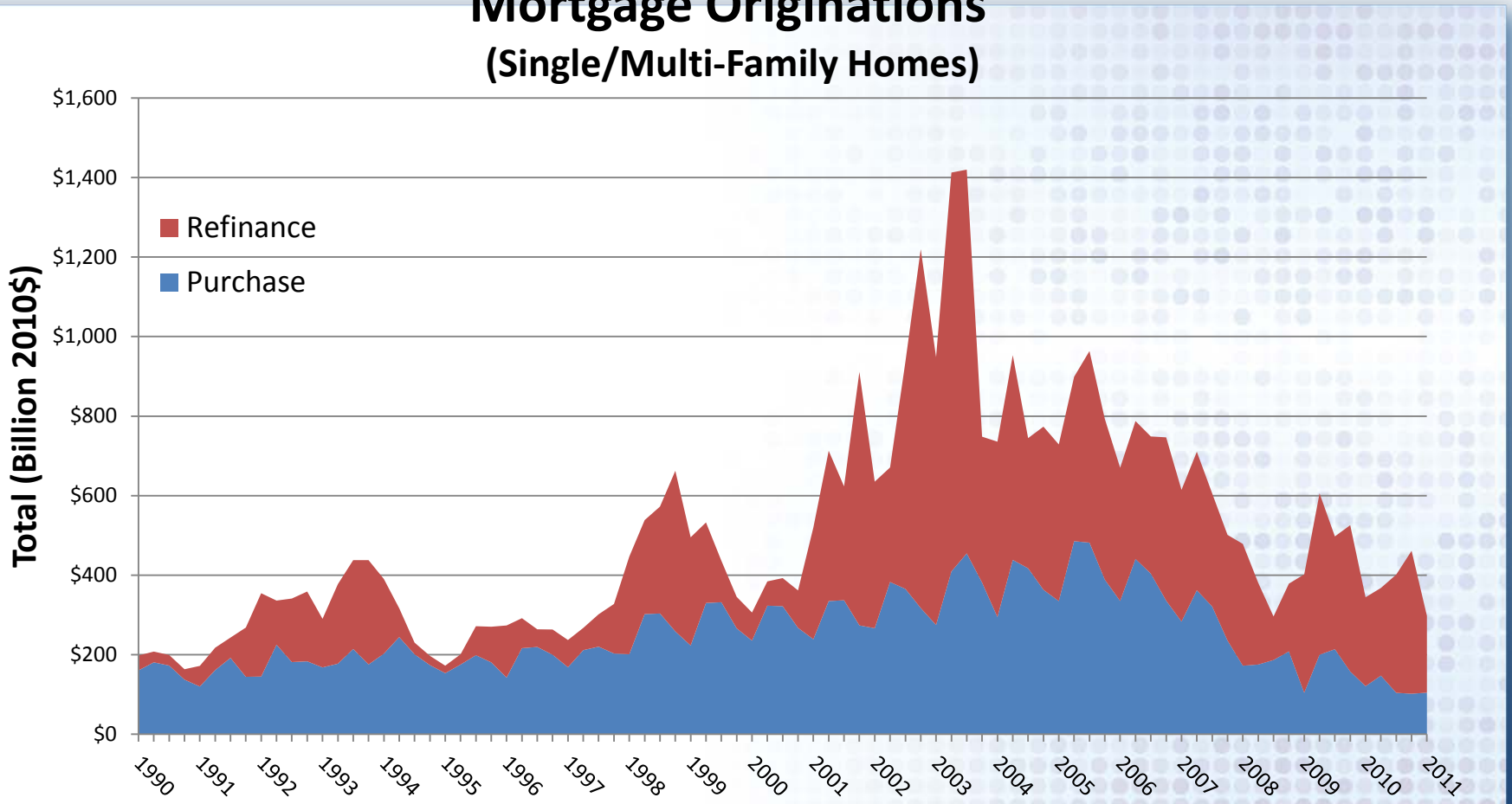


Source: Federal Reserve

Green Shoots III:

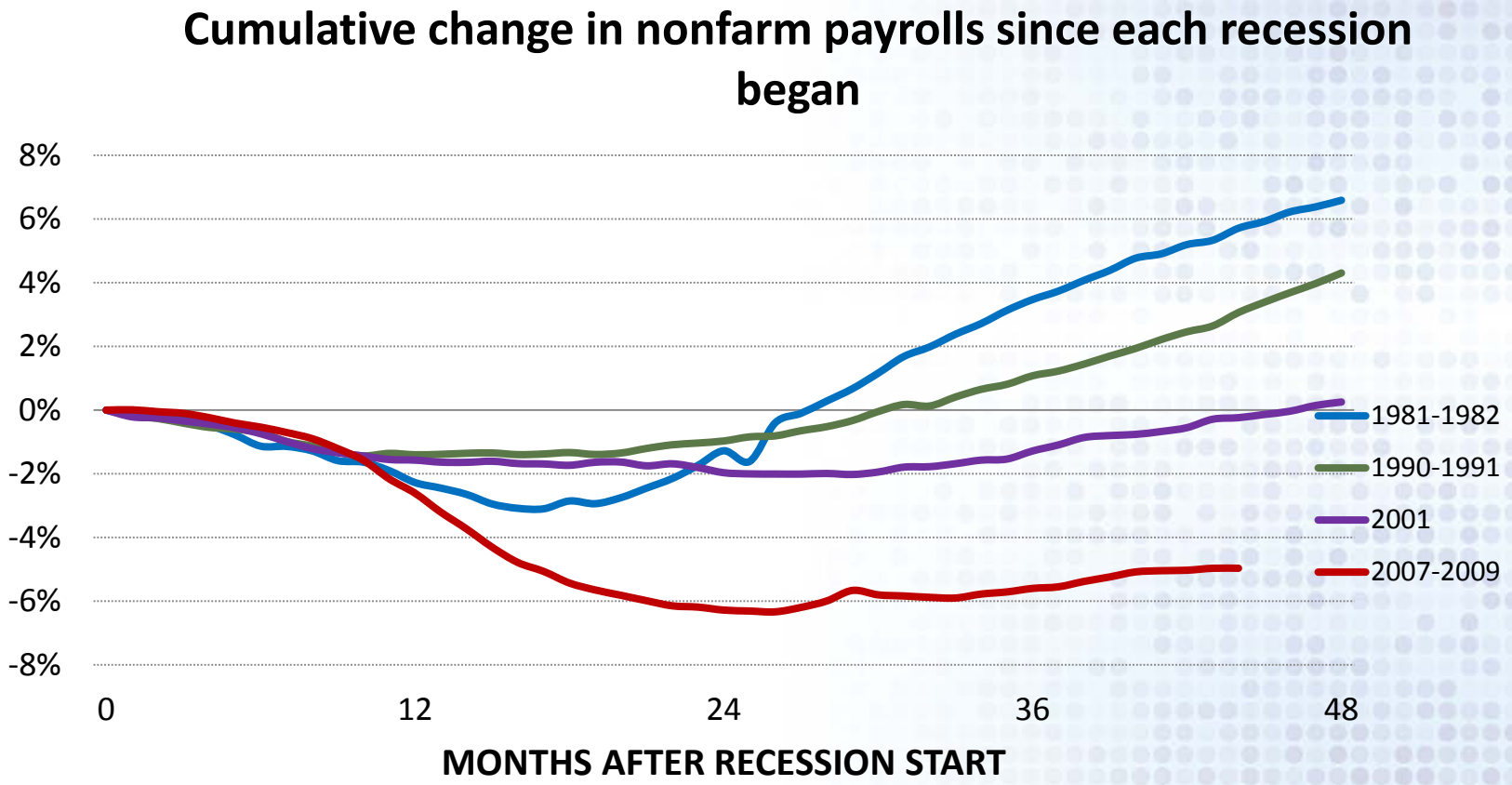
Home Mortgage Loans Have Rebounded

(But in Refinancing, Not Purchases)

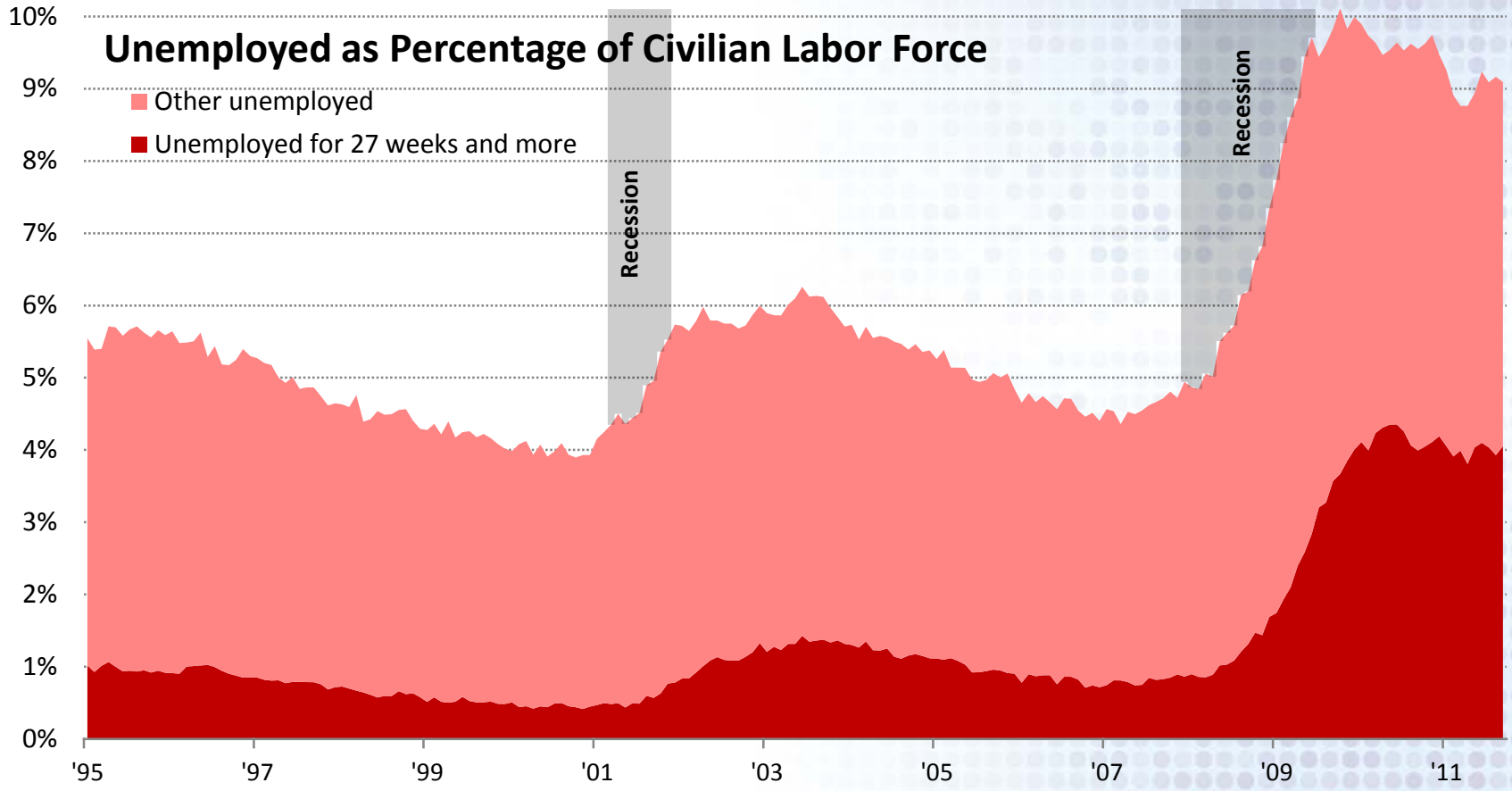


Source: Mortgage Bankers Association

The "Weeds" I:
A Jobless Recovery Unlike Any Other

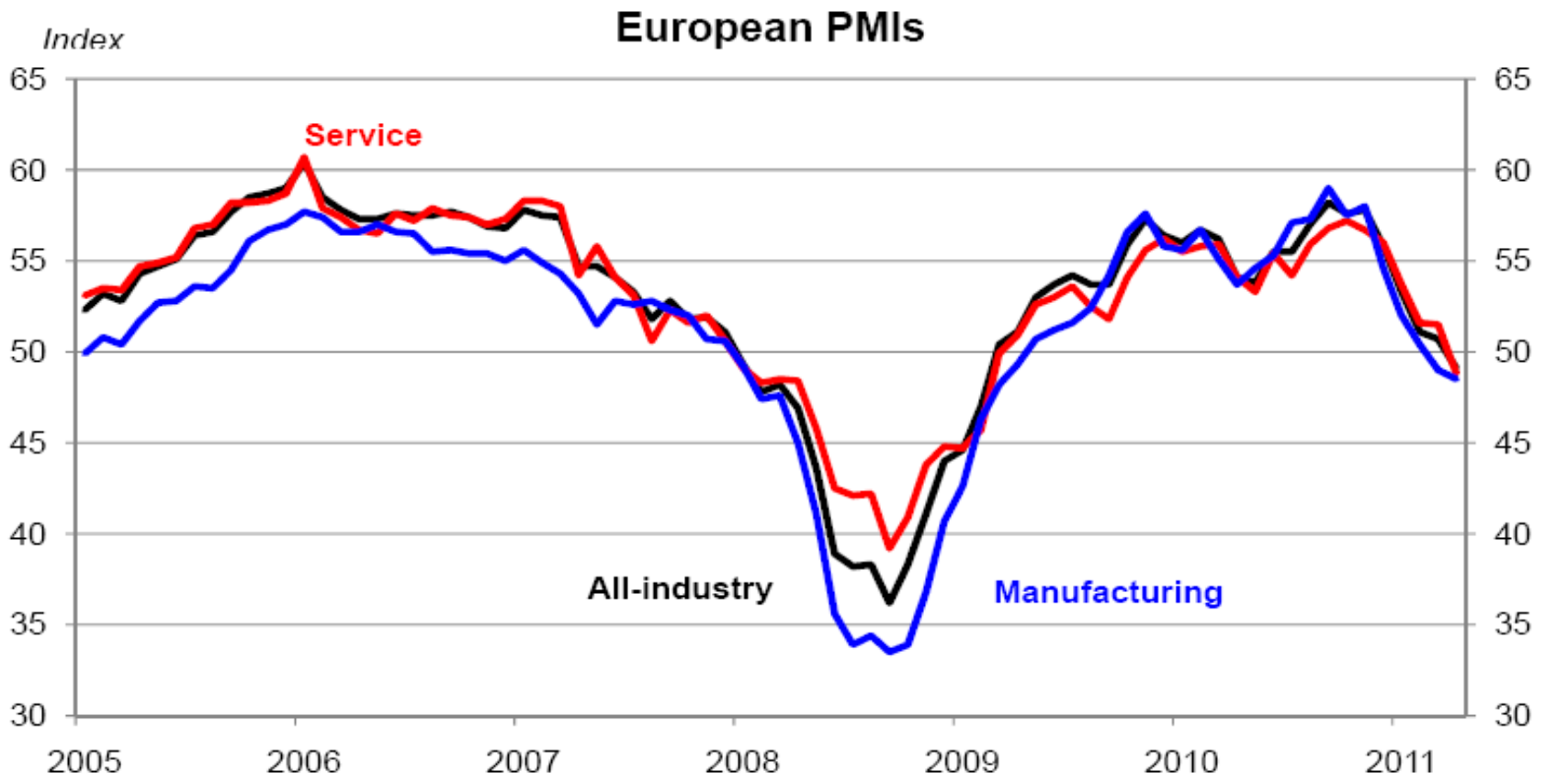


Long-Term Unemployment is at Unprecedented Levels



Source: Bureau of Labor Statistics

The Weeds II: After Initial Indications of a Recovery, European Growth is Waning



Source: Federal Reserve Bank of Kansas City

The Weeds III: Oil Prices

Source: Energy Information Administration – Weekly WTI Spot Price

Source: Energy Information Administration – Weekly WTI Spot Price

The Outlook:
What Other Forecasters Are Predicting

	2012	2013	2014	2015
Real GDP	2.3%	2.7%	3.0%	3.1%
Unemployment Rate	8.3%	7.9%	7.4%	6.7%
3-Month Treasury Bill	0.1%	0.1%	0.8%	1.7%
10-Year Treasury Bond	2.2%	2.9%	3.5%	4.0%
Inflation (CPI)	2.0%	2.2%	2.3%	N/A

Source: Survey of 37 professional forecasters conducted by Federal Reserve Bank of Philadelphia, published on February 10, 2012

Could a "Double-Dip" Recession be in our Future?

- **Most forecasters put the probability of a negative quarter in 2012 at less than 1 I 5 . . .**
- **But a recent study by a Federal Reserve economist puts the probably of a recession in 2012 at greater than 50%!**
- **Possible triggers**
  - Eurozone crisis
  - Stagnation in housing market
  - Chinese economic bubble
  - Natural disasters
  - Continued stalemate in U.S. fiscal crisis

Long-Term Economic Outlook 2012-2020

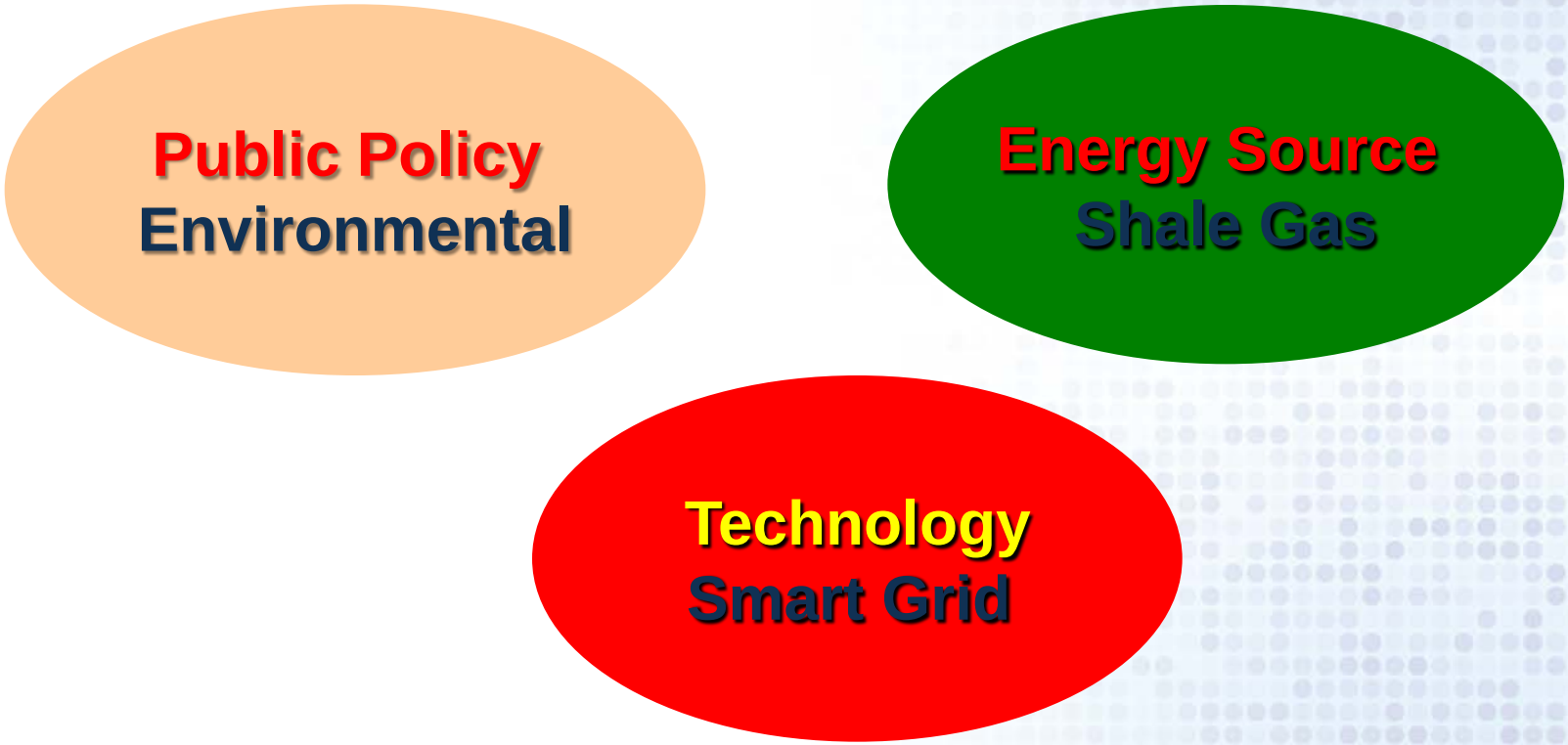
- **Only moderate GDP growth (2%-3% per year)**
- **Slow, steady decline in unemployment rate (≈ 0.3% / year) to 5.7% by 2020**
  - Need 350,000-400,000 jobs/month to return to pre-recession levels in 3 years
  - Anticipate only 100,000-150,000 jobs/month during that time frame and beyond
- **Inflation held in check (CPI <3%)**
- **No significant rise in interest rates until after 2013**
- **Prognosis: A long, slow recovery with many pitfalls**

Potential Pitfalls

- **Failure to effectively address budget/deficit problems leads to:**
  - Serious inflation if Fed continues to monetize debt
  - Downgrade of U.S. debt and resultant rise in interest rates
- **Eurozone crisis expands to general meltdown – Europe is probably already in a recession**
- **Instability in supplier countries and/or strong demand in developing economies cause energy and commodity prices to surge**
- **Bottom Line: Significant probability of a stagnant decade**

Uncertainty Looms!!

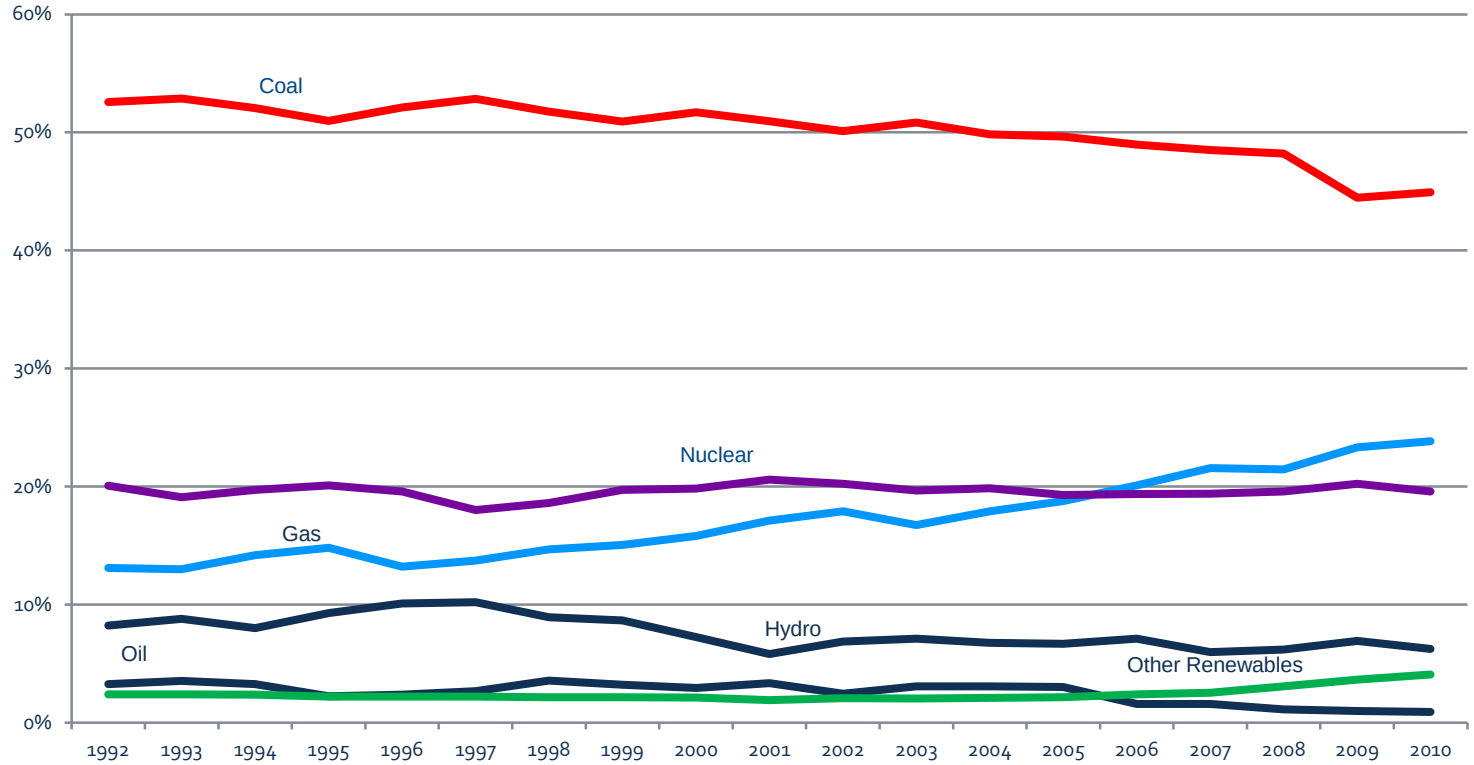
Electricity Game Changers



Divergent Forces

The Power Sector is Getting Cleaner

Electricity mix needs to provide **affordable**, **reliable** energy, e**fficiently**, with minimal **environmental** impact.



Source: U.S. Department of Energy; Energy Information Administration (EIA)

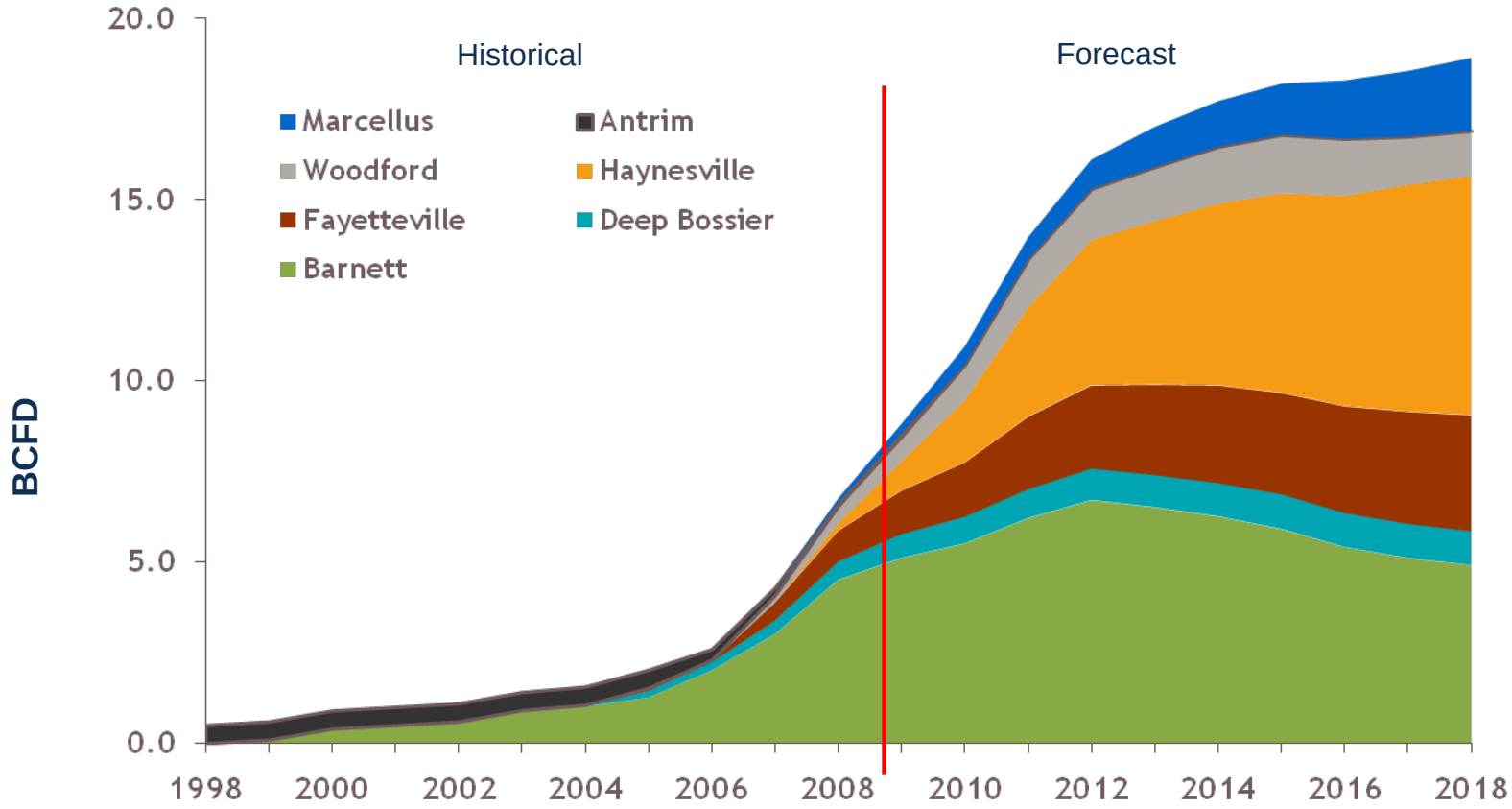
Power Sector Objectives

- Minimize economic impacts to consumers
- Continue environmental improvements
- Maintain system reliability
- Maintain fuel diversity options
- Develop and deploy new technologies
- Obtain access to capital and cost recovery
- Negotiate myriad political landscapes

Environmental Regulatory Challenges:
2012 and Beyond

Air	Climate	Water	Land & Natural Resources	Waste & Chemical Management
Utility MACT	NSPS- New & Modified Sources	316(b)	Transmission Siting and Permitting	Coal Ash
Interstate Transport (CAIR/CSAPR)	NSPS- Existing Sources	Effluent Guidelines Limitations	Avian Protection	PCBs in Electrical Equipment
Regional Haze/Visibility	BACT Permitting	Waters of the United States	Endangered Species	HazMat Transport
Multiple NAAQS	International Negotiations	NPDES Pesticide Permits	Vegetation Management	
New Source Review (NSR)		Waterbody-Specific Standards		

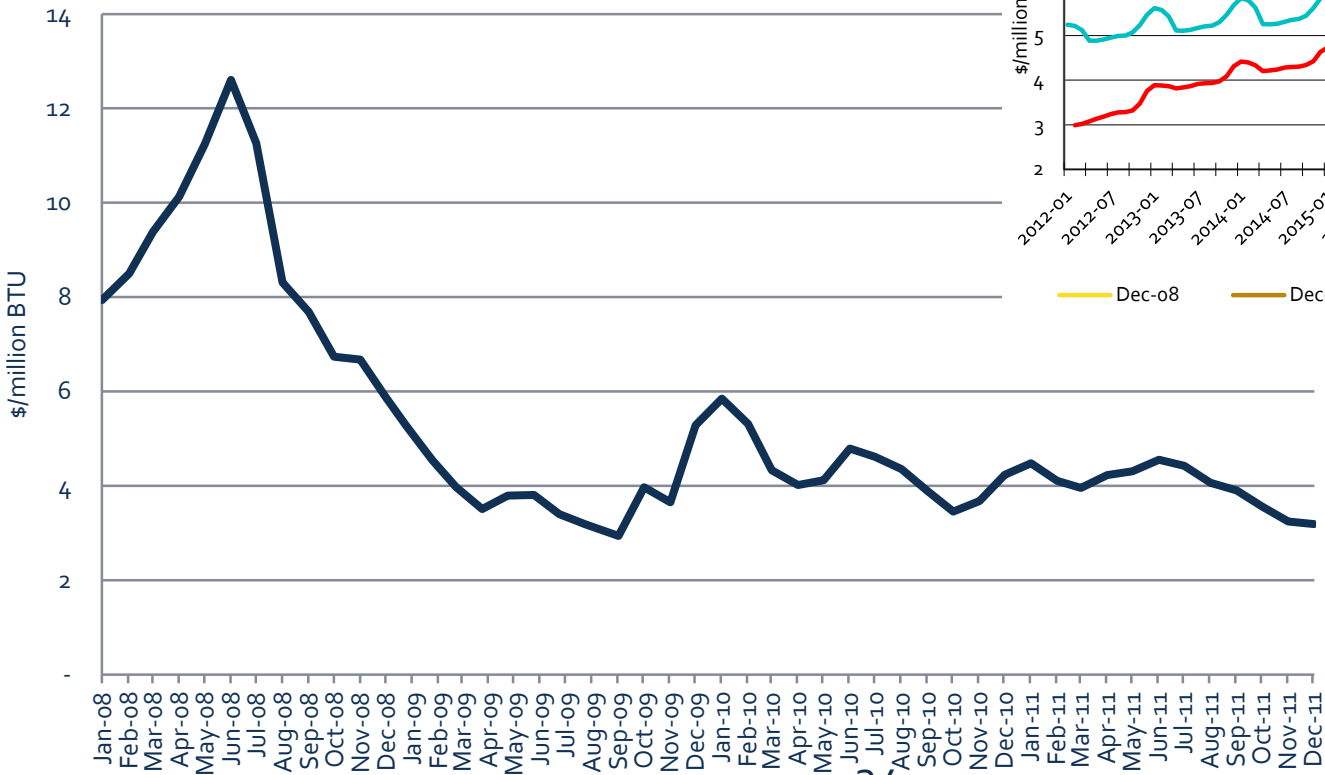
U.S. Shale – A Game Changer? Gas Production Potential



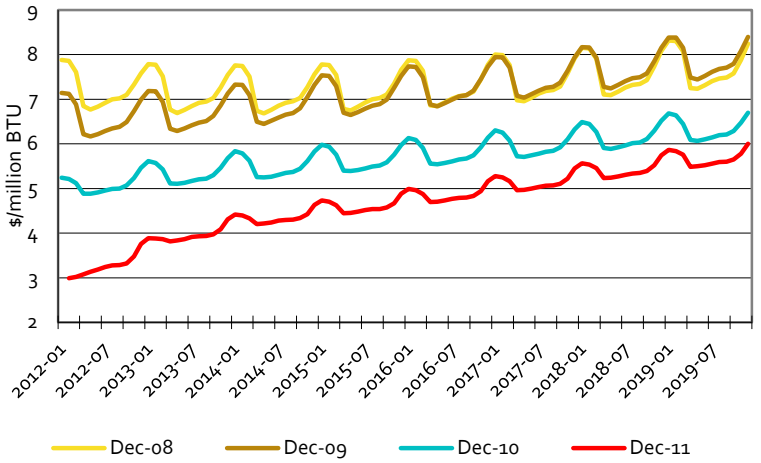
Source: Tristone Capital, Devon Energy

Henry Hub Spot and Futures Prices

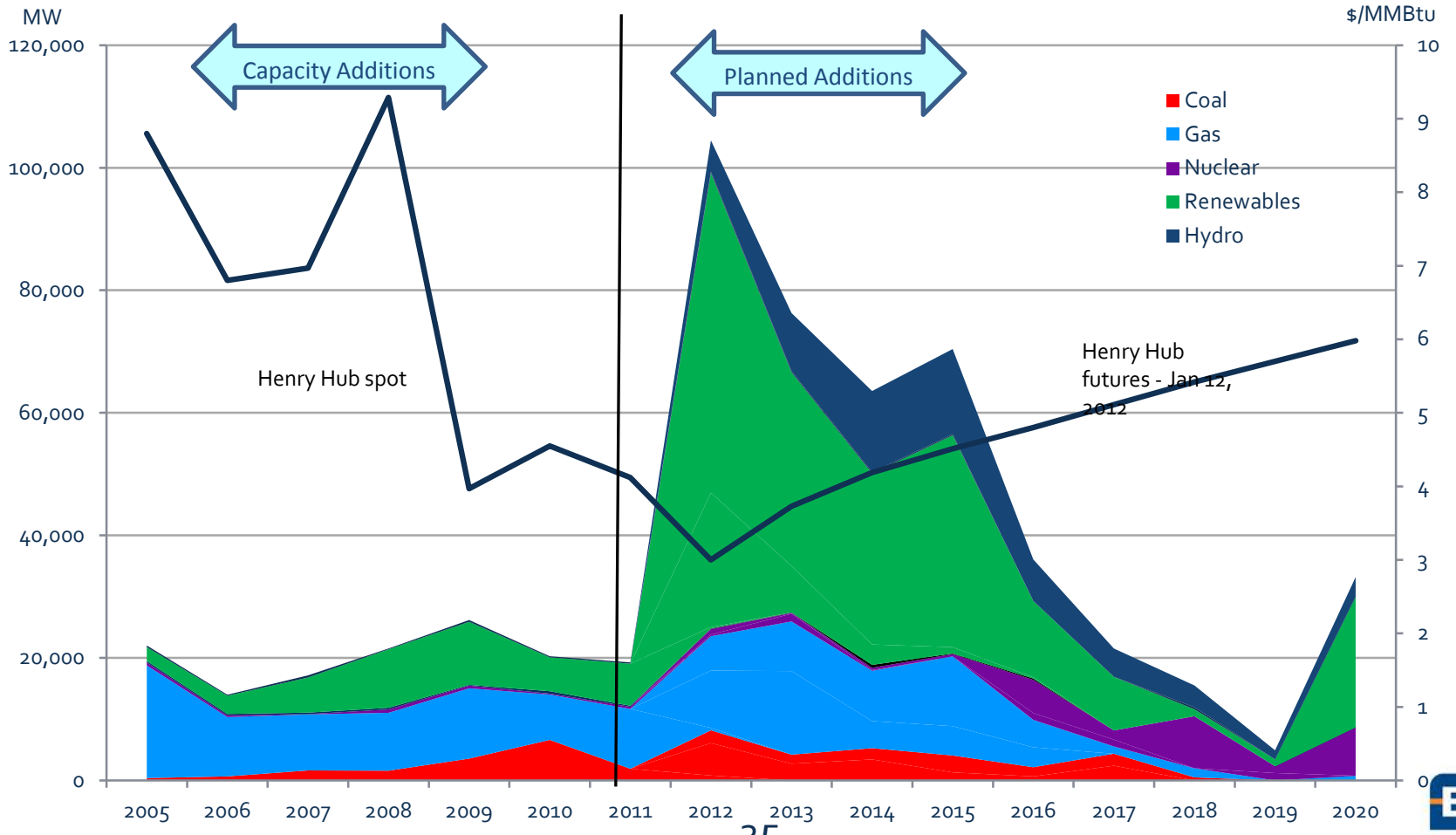
Henry Hub Spot Price



Henry Hub Futures Price



Natural Gas Prices and Generation Investment



Natural Gas Challenges

- **Regulatory**
  - Hydraulic fracturing
- **Public opposition**
  - Drinking water contamination concerns and waste water / surface contamination
- **GHG reduction implications**
- **Price level and volatility**
- **Pipeline access / availability**
- **Seismic concerns**

Why Do We Need A Smarter Grid? (Grid Modernization)

- **A smarter grid will enable utilities to:**
  - Empower customers to control and optimize their energy usage
  - Rely on greater amounts of distributed generation—wind, solar, etc.
  - Use electricity as a fuel for vehicles
  - Enhance the reliability and efficiency of the power grid
  - Provide the framework and foundation for future economic growth
  - Restorate/quicken

A New Kind of Utility/Customer Engagement

- Use of advanced customer service channels to deliver customer benefits, choice and control
- Shift from reactive issue resolution to proactive information transfer
- Information push versus pull customer service model

Smart Grid Implementation Challenges

- **There is tremendous and growing pushback from customers and regulators to the smart meter. It focuses on**
  - Accuracy of meters
  - Health concerns: Radio Frequency Exposure
  - Who decides whether a meter should be installed?
  - Cost of installation
  - Access to information: privacy intrusion
  - Impact "at risk" customers
  - Dynamic pricing
  - Customers are not seeing immediate benefits

Legislative Activity

- **No major energy-related legislation anticipated in 2012**
- **Legislative activity will focus on:**
  - Tax reform

2012 Election Year: The Issues

Jobs!

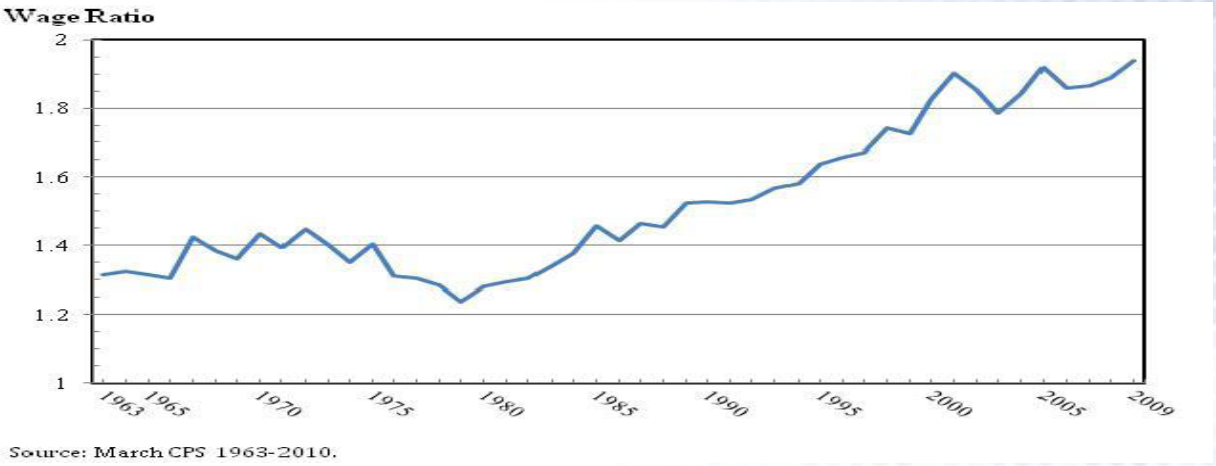
Jobs!!

Jobs!!!

2012 Election Year Challenges

- Deficit Reduction
- Tax Reform
- Energy/Environmental Policy

Income Inequality and the Education Deficit



Source: March CPS 1963-2010.

- The wage premium has widened because the supply of educated workers has not kept up with demand
- Demand for educated workers in the U.S. is projected to grow 2% per year through 2025, while supply is projected to grow by only 1% per year
- This will increase the wage premium to around 100%

The Education Deficit Has Left Its Mark: Reducing it Offers Many Benefits

Change in Male Earnings and Employment: 1969 - 2009

Educational Attainment	Change in Mean Earnings	Percentage Point Change in Full-Time Employment
Less than High School	-29%	-31.8
High School Only	-20%	-26.2
Some College	-13%	-19.2
College Degree	+11%	-6.6

- In 1970, the U.S. had the highest rate in the world of high school and college graduation; today, it ranks 21st among OECD nations in high school completion and 15th in college completion
- A high school graduate earns 50% to 100% more in lifetime earnings than a dropout
- High school and college graduates impose lower costs on society in terms of health, public aid, and the criminal justice system

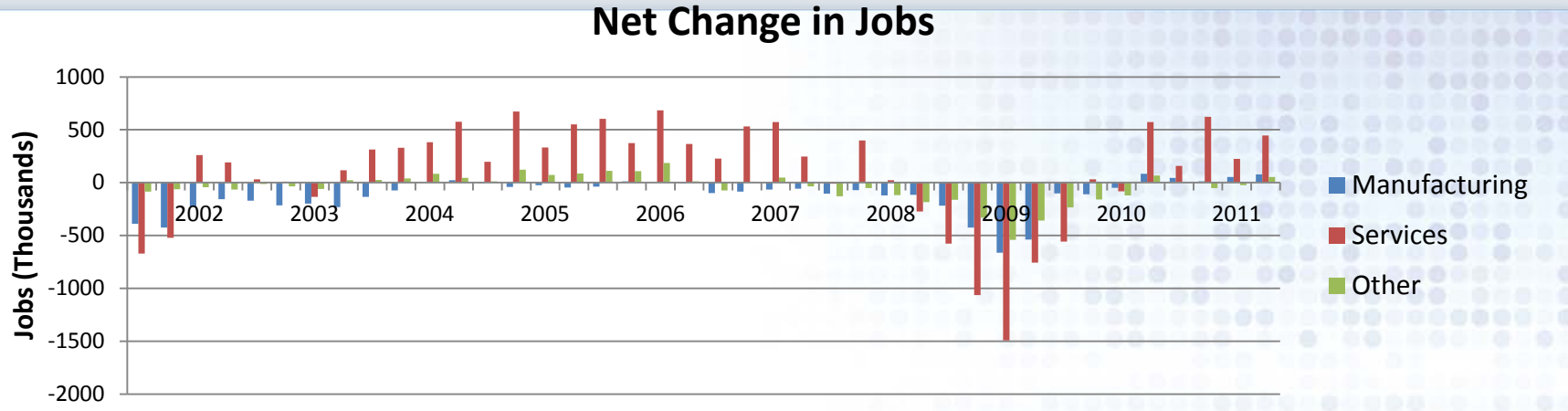
America's Education System Needs an Overhaul
How to Retool it for the 21st Century

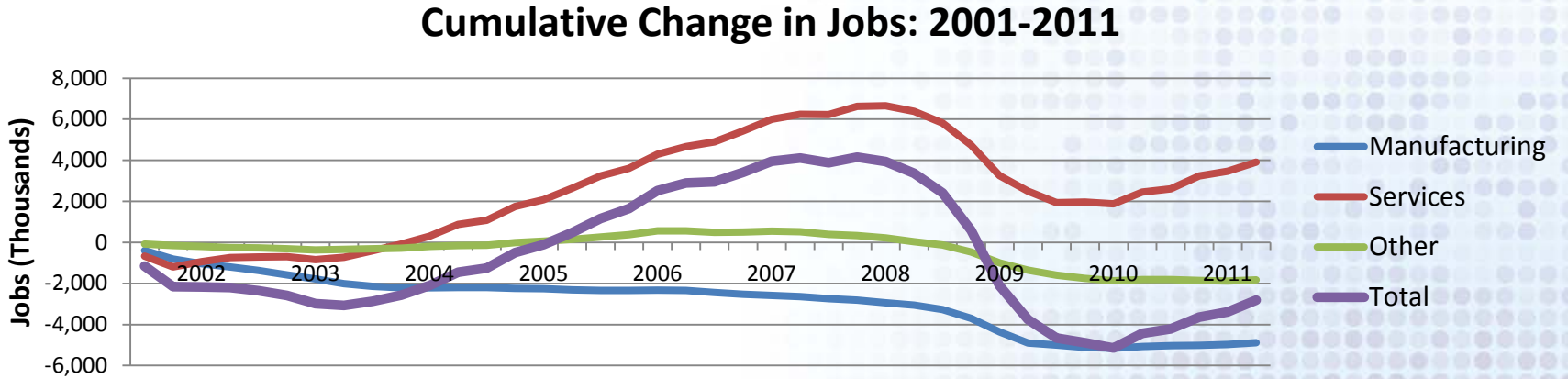
1. Put more emphasis on how to process and use information; less on simply acquiring it
2. Recognize the increasing importance of collaboration relative to individual effort
3. Embrace new technologies (e.g., electronic readers, video lectures)
4. Supplant passive learning with dynamic learning
5. Introduce a more cosmopolitan (international) focus
6. Provide more guidance on how to analyze data

Source: Lawrence H. Summers, "What You (Really) Need to Know", *New York Times*, 1/22/2012

Fewer Jobs Today than 10 Years Ago

Gains in Services Jobs More than Offset by Losses in Other Sectors





Source: Bureau of Labor Statistics

What is AABE doing?

- **Enhancing its voice in public policy**
- **Established working groups**
  - review current principles
  - develop and recommend policy positions
  - conduct education and outreach forums

Legislative and Public Policy (LIPP) Committee Working Groups

- Cyber Security
- Energy Delivery
- Energy Efficiency
- Energy Supply
- Environment
- Environmental Justice
- Smart Grid
- Supply Diversity
- Taxes
- Transportation

CONCLUSION

- Energy is the foundation of America's strength and competitiveness.
- Energy policy must ensure that consumers and businesses have access to reliable and affordable energy.
- The utility business model is changing; we are getting "greener", and we need to learn how to do it profitably.
- The education pipeline is leaking. We must excite our young people to pursue Science, Technology, Engineering, and Mathematics (STEM); they are our future for new technology development and American's competitiveness.