NARUC
2015 Winter Meeting

Staff Subcommittees on Electricity and Electric Reliability
February 15, 2015

Future of the Grid
and
2014 Grid Modernization Index

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GridWise Alliance

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GridWise Alliance Members

A consortium of passionate stakeholders focused on modernizing our electric grid, collaborating to transform the nation's electric power grid

www.gridwise.org

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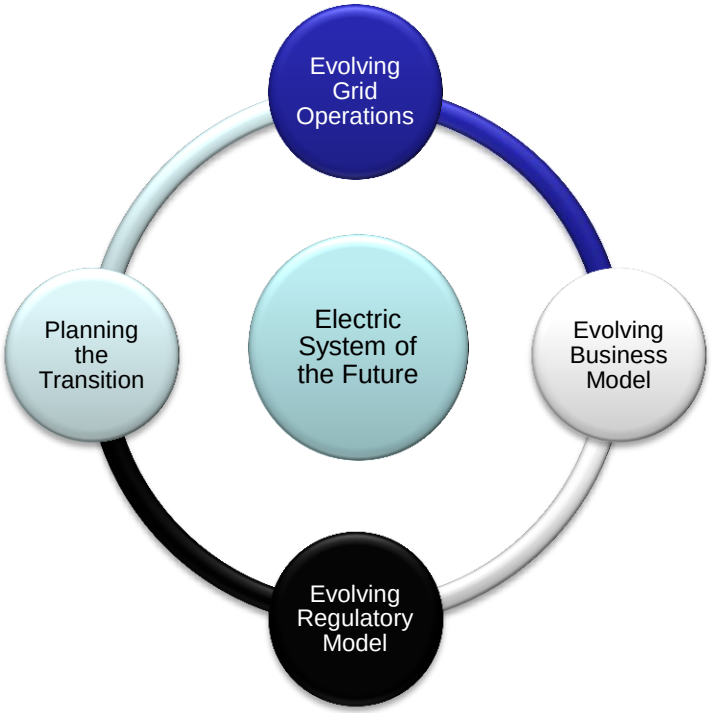
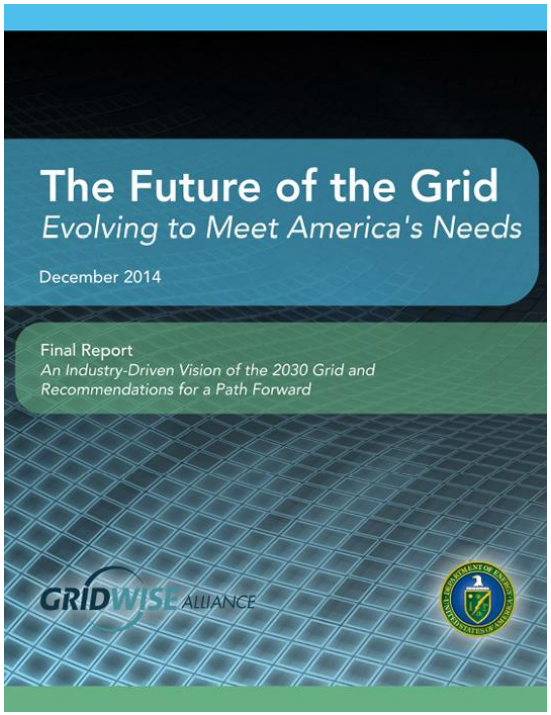
Future of the Grid – Evolving to Meet America's Needs

- Developed through a public/private partnership with the Office of Electricity Delivery and Energy Reliability at Department of Energy
  - Four Regional Workshops & National Summit
  - Final report issued in December





Characteristics
Electric System of the Future

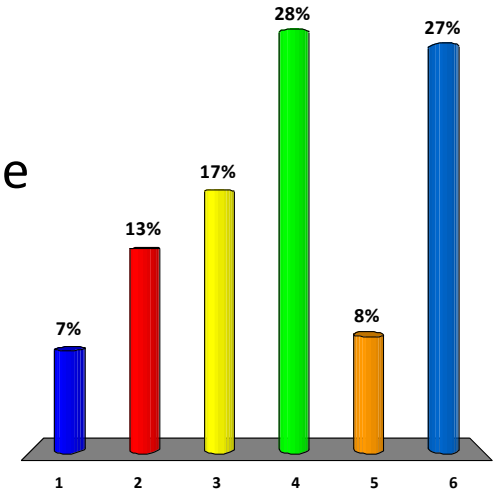
- Generation
  - Centralized and distributed
  - Dispatchable and non-dispatchable
  - Microgrids – complementary not replacement
- Energy storage – won't replace the need for "dispatchable" options
- Balancing supply and demand increasing complex and important
- Consumers
  - Different expectations and options
  - Prosumers
- Markets
  - Wholesale and retail
  - Third party non-regulated competitive players

Evolving Grid Operations
Key Themes from Workshops

- Will still want and need a grid
- No longer just a delivery “pipe” => multi-way power flow
- Must be agile and “fractal” - flexible, adaptable, responsive
- Enabling platform for very dynamic and complex system
- Enabling a robust retail market
- Distribution grid will look and act more like transmission grid
- Balancing supply and demand will be increasingly complex and important
- Connecting wholesale and retail markets will be essential

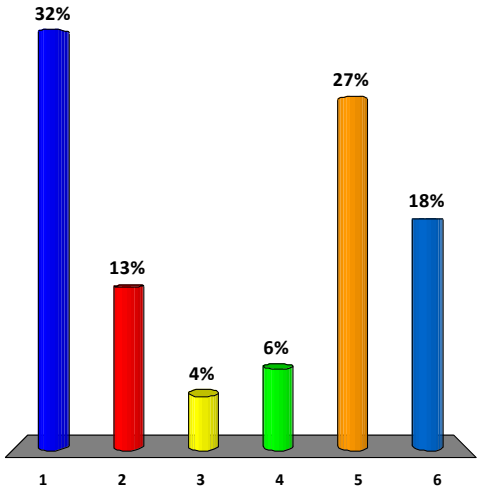
What is the most critical technology challenge that needs to be addressed in the next 15 years?

1. Improving situational awareness down to end device
2. Implementing high bandwidth, low latency, cost effective and interoperable communications systems
3. Leveraging “big data” analytics and integrating into real-time operations
4. **Incorporating distributed energy resource management**
5. Integrating multi-customer microgrids
6. **Achieving cost effective energy storage**



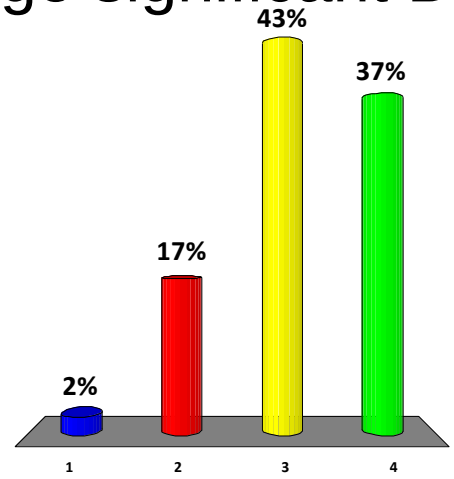
What is the most urgent technological challenge today?

1. **Dealing with intermittency of renewable generation**
2. Dealing with extreme weather events
3. Incorporating advanced weather modeling into operations
4. Reducing peak demand
5. **Dealing with "big data"**
6. Meeting environmental mandates



How many years will it take from project start to finish for distribution utilities to install and implement systems and tools to effectively manage significant DERs?

1. 0-2 years
2. 3-5 years
3. **6-8 years**
4. **More than 8 years**



NOTE: DERs defined to include all distributed energy resources including DR and responsive loads

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Evolving Business Model
Fair Compensation for Value Delivered

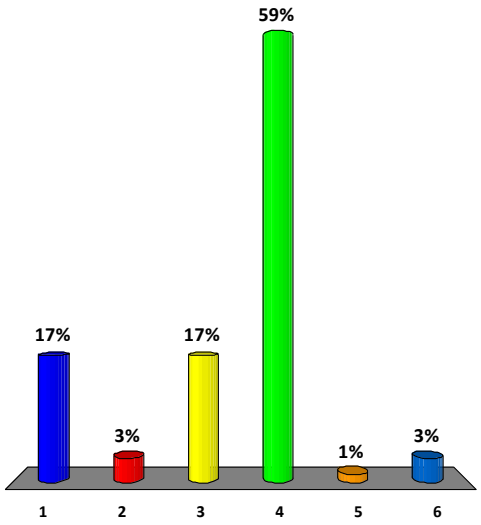
- Future value props for grid operators:
  - Integrating all types of generations
  - Being agnostic as to where supply comes from
  - Increasing grid efficiency
  - Enabling customers to provide services back to grid
  - Facilitating a retail market for consumers to buy and sell services
  - Optimizing assets utilization
  - Supporting/implementing public policies
  - Maintaining a safe and reliable grid
  - Enabling highly reliable and resilient energy services to end consumers
  - Identifying most cost-effective way to achieve outcomes

Evolving Business Model Portfolio of Selectable Services

- Basic service
- Enhanced service
- High-reliability services
- Microgrid services
- Financing services
- Buying/selling ancillary services, such as:
  - VAR Support
  - Voltage Support
  - Frequency Response
  - Spinning Reserve
  - Backup Power Support

In 2030, your vision for the future electric market structure is:

1. Looks similar to today
2. Optimal market design emerges and is the same across all states
3. Only ISO/RTO markets will have retail market exchanges
4. States will establish new retail market exchanges independent of ISO/RTO or vertically integrated market structure
5. No market structure needed – grid will go away and all generation will be "local"
6. T grid will go away and the D grid will support a robust network of connected microgrids

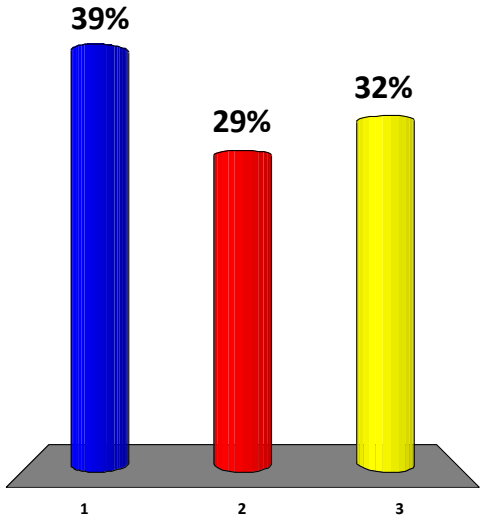


Evolving Regulatory Model
Challenges for Regulators

- Providing regulatory clarity in time of significant change
- Align regulatory process to embrace speed of change and technology innovation
- Balancing pubic good with the needs and desires of individual consumers
- Addressing consumers' obligations to the grid as well as utilities' obligations to consumers in the future

Which is the highest risk scenario in transitioning utility pricing to a products and services model:

1. Debating change but continuing with status quo
2. Transitioning to a services pricing model and eliminating all policy related cross subsidies built into today's rates
3. Transitioning to services pricing model while continuing current policy related cross subsidies



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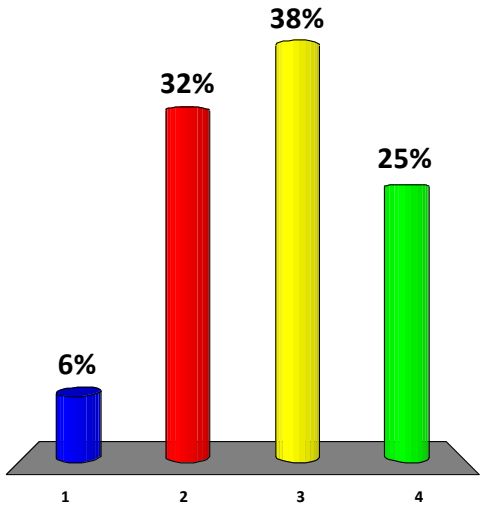
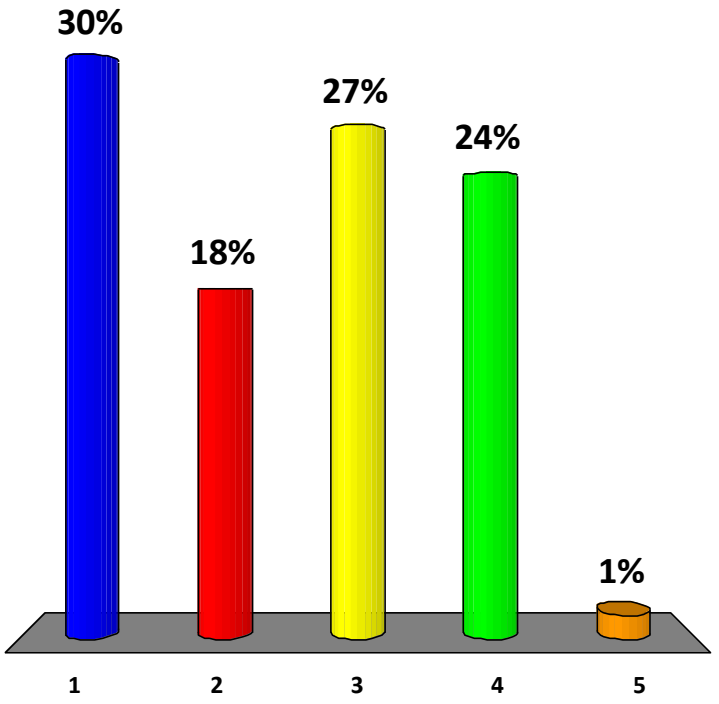
Which of the following statements do you agree with the most:

1. T&D should continue to be compensated based on electricity sales
2. T&D should be compensated based on services provided
3. T&D should be compensated based on a electricity sales and services
4. T should continue to be compensated based on electricity sales, but D should move to services model



What is the biggest risk if we don't get this right

1. Significant impact to our national economy
2. Significant impact to the cost of electricity
3. Significant impact to the reliability and resiliency of electric service in US
4. Will create a new "electricity divide" in US
5. No big risk – everything will work out over time



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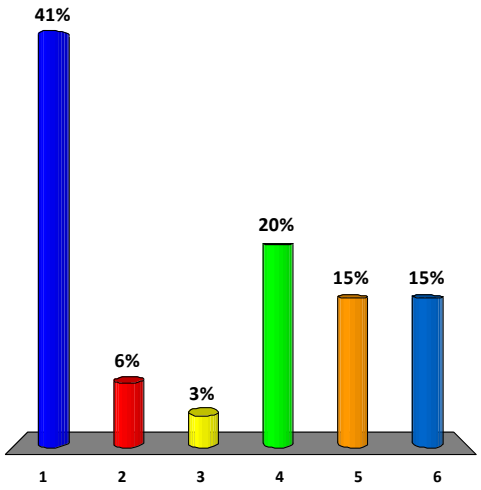
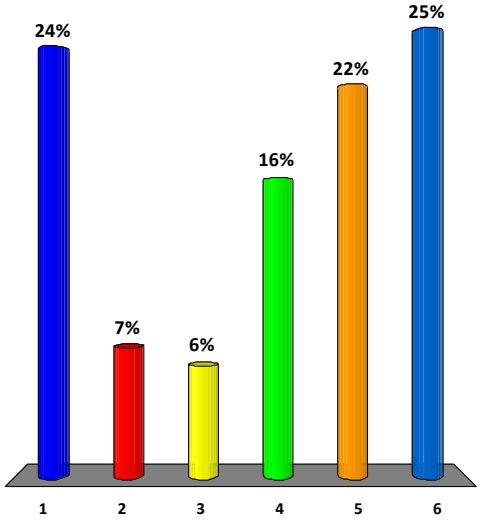
What will be the most challenging element of evolving regulation at the state level:

1. Establishing new pricing structures and addressing societal policy issues (i.e. cross subsidies, obligation to serve)
2. Establishing retail market rules
3. Establishing DER interconnect rules
4. Emerging unregulated market for DER and "behind the meter" products and services
5. Stranded assets created in transition
6. Educating and engaging customers in the change



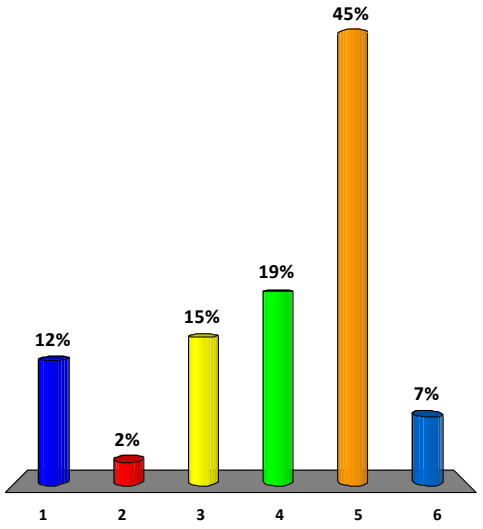
What will be the most challenging element of evolving regulation at the federal level:

1. Dealing with emerging retail market exchanges
2. Planning for DERs
3. Dealing with stranded asset issues
4. Transitioning pricing model/rate structures for transmission services
5. Cybersecurity across the entire grid
6. Grid reliability



What do you see as the biggest barrier to evolving grid operations?

1. Lack of a clear vision for the future electric system
2. Lack of national policy to achieve the vision
3. Lack of a business model to support the transition
4. Lack of a regulatory model to support the transition
5. All of the above
6. None of the above

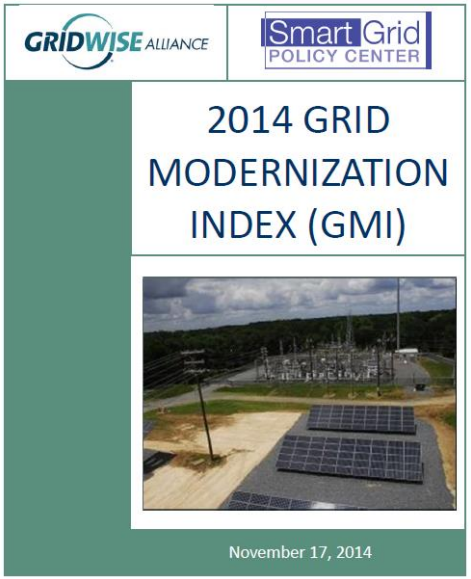


Recommendations

- Establish clear and comprehensive guiding principles
- Develop a unifying architecture to ensure interoperability across the entire grid
- Create a framework for guiding investments and the development of state/regional roadmaps.
- Drive solutions through stakeholder engagement and education.
- Address technology challenges and limitations through robust research and analysis.

2014 Grid Modernization Index

- The GMI is a simple, easy to understand scorecard with three components:
  - **State Support:** State policies and regulatory mechanisms that facilitate grid investment;
  - **Customer Engagement:** Investments throughout the state in customer–enabling technologies and capabilities; and,
  - **Grid Operations:** Investments throughout the state in grid-enhancing technologies and capabilities.



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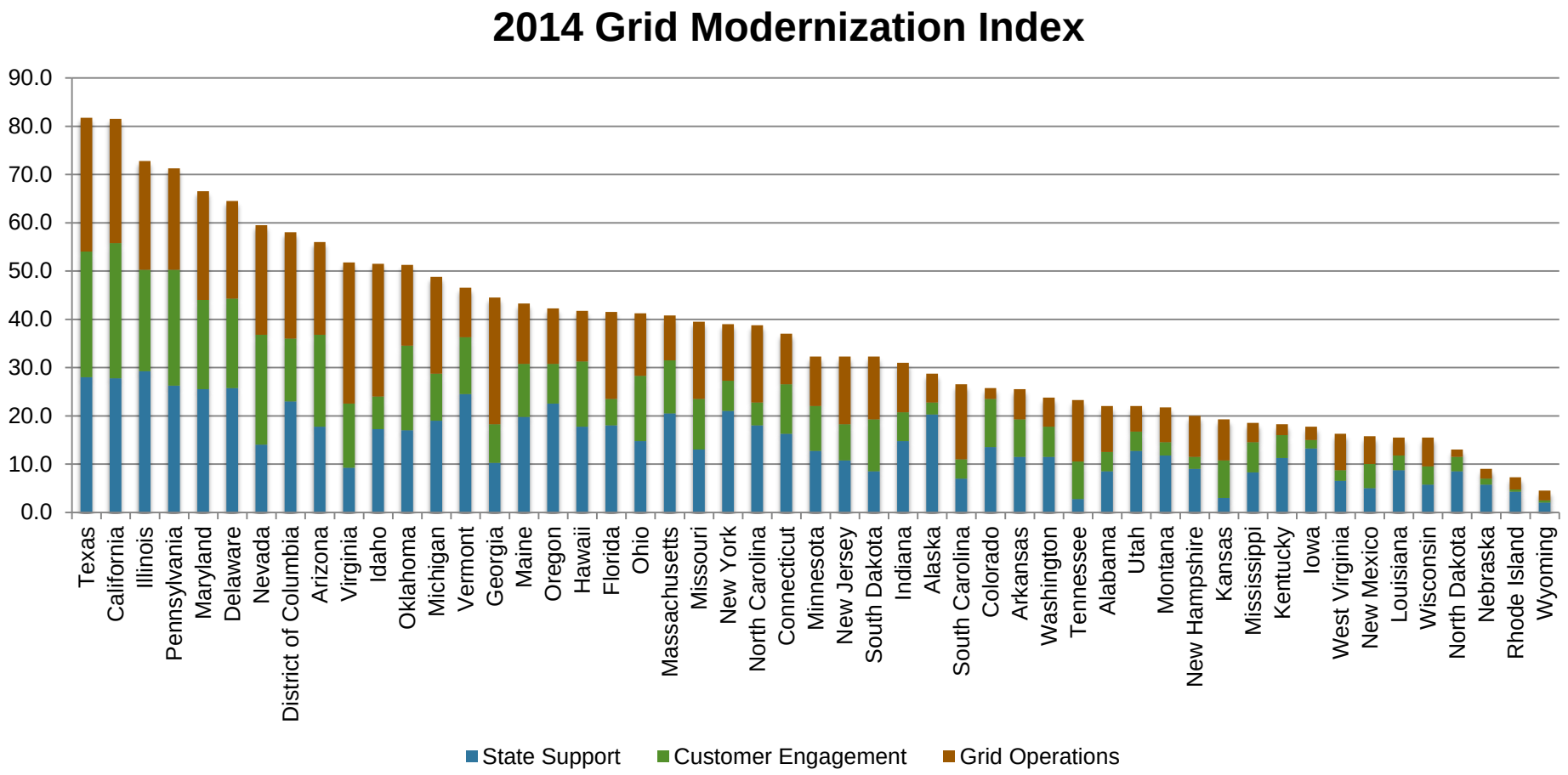
2014 Results



2014 Key Insights

- Energy policies not directly targeted at Grid Modernization are driving investments in grid modernization. These state policies include:
  - Mandatory Renewable Portfolio Standards (RPS);
  - Energy Efficiency Resource Standards (EERS);
  - Retail Deregulation;
  - Wholesale Deregulations;
  - Independent System Operator (ISO)/Regional Transmission Operator (RTO) Markets and,
  - Mass Market Demand Response Programs.
- The states that received significant ARRA SGIP grants dollars have higher overall GMI scores with the most significant impacts reflected in their Grid Operations scores.
- Higher penetration of DERs, particularly rooftop PV, is starting to drive an increasing urgency for grid modernization in order to enable the effective integration of these resources in many jurisdictions.

2014 Key State Activities

- **California**
  - Distribution Resource Planning – fully leverage DERs on Distribution – locational value
  - Energy Storage – IOUs plan for achieving targets
- **Texas**
  - Leader in the implementation of deregulated retail services
  - Leader in effectively integrating large-scale wind generation including large-scale energy storage.
  - ERCOT has an effort underway to “rethink” the entire existing set of ancillary services.
- **Illinois**
  - 2014 GMI ranking having increased by 13 points over its prior year’s ranking
  - Reflects the implementation of it’s "Energy Infrastructure and Modernization Act" passed in October 2011

2014 Key State Activities

- **Massachusetts**
  - Developed Commonwealth-wide Grid Modernization Plan
- **New York**
  - Initiated a State-wide Reforming the Energy Vision (REV) process in April 2014.
  - Defining new role for distribution utilities and establishment of retail market
- **Hawaii**
  - Increasing penetrations of rooftop solar have led to the need to focus on the modernization of the electric grid to be able to effectively integrate and utilize DERs.

2015 GMI Questions

- Evaluating questions to see if any need to change or be modified
- Building on information we have gathered over last two years
- Welcome your feedback - How we can make the index more valuable to you?

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Q&A

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Reports can be down loaded from:

www.gridwise.org

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Winter Committee Meetings

Staff Subcommittees on Electricity, Electric Reliability, and Energy Resources and the Environment

Demand Response and EPA's Clean Power Plan: Major Manufacturers Respond

Paul Cicio,

President

Industrial Energy Consumers of America

Panelists:

Darren MacDonald:	Gerdau Ameristeel
Susan Misconish:	Timken Steel
Richard Notte:	Alcoa
Bruce Ray:	Johns Manville
Larry Stalica:	Linde

Demand Response and EPA's Clean Power Plan: "Industrial Perspective"

Presentation to NARUC
February 15, 2015

Paul N. Cicio
President
Industrial Energy Consumers of America

Industrial Energy Consumers of America

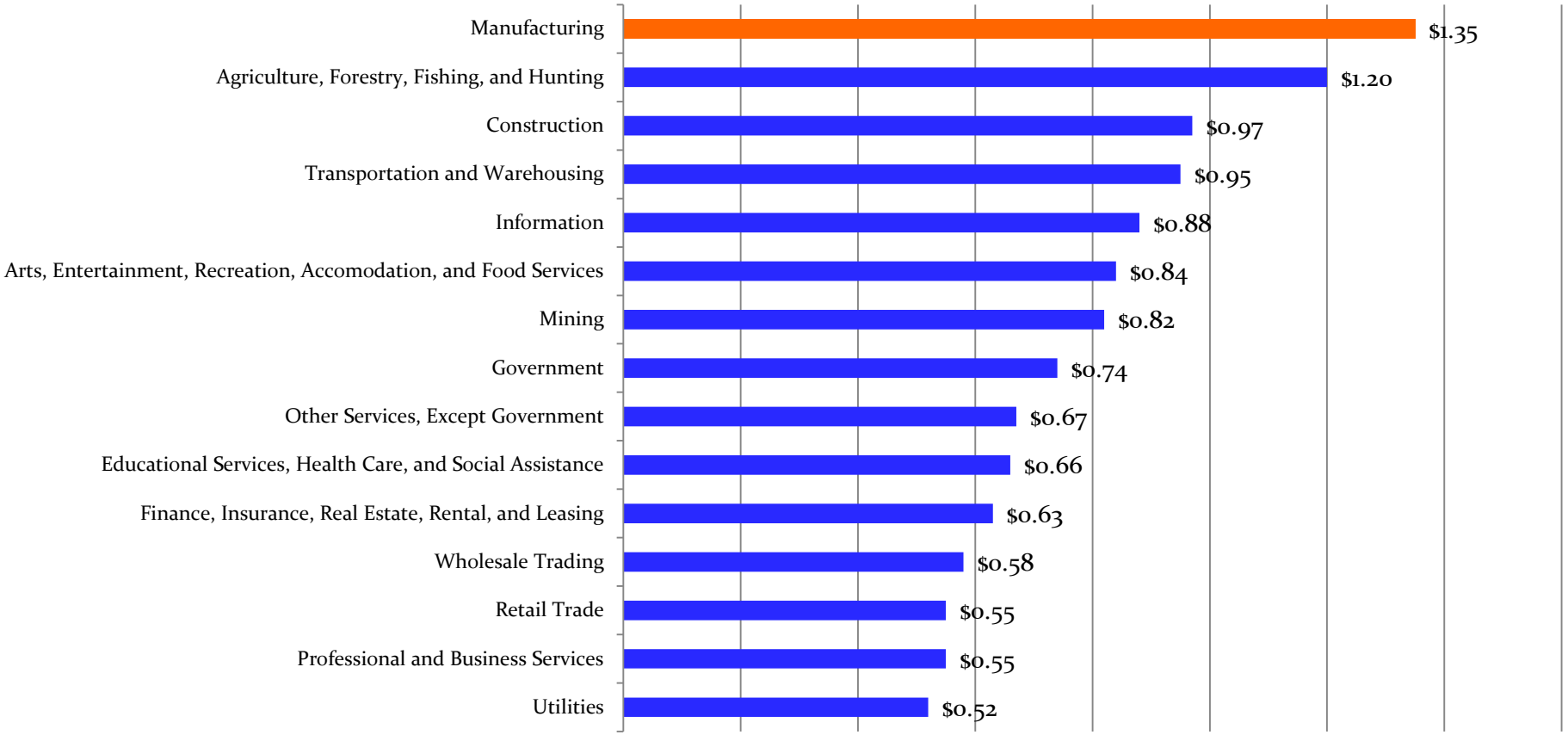
- The Industrial Energy Consumers of America is an association of leading non-partisan manufacturing companies with $1 trillion in annual sales. More than 1.2 million employees.
- Focused exclusively on availability, use and cost of energy, power.
- IECA membership represents a diverse set of mostly energy-intensive industries including: steel, iron ore, aluminum, commodity and specialty chemicals, fertilizer, paper, refining, food processing, glass, cement and plastics.

Manufacturing is Important to U.S. Economy

- Contributed $2.09 trillion to the economy, up from $1.73 trillion in 2013.
- 12.0 percent of GDP.
- Supports 17.6 million jobs, one in six private sector jobs (12 million direct or 9 percent).

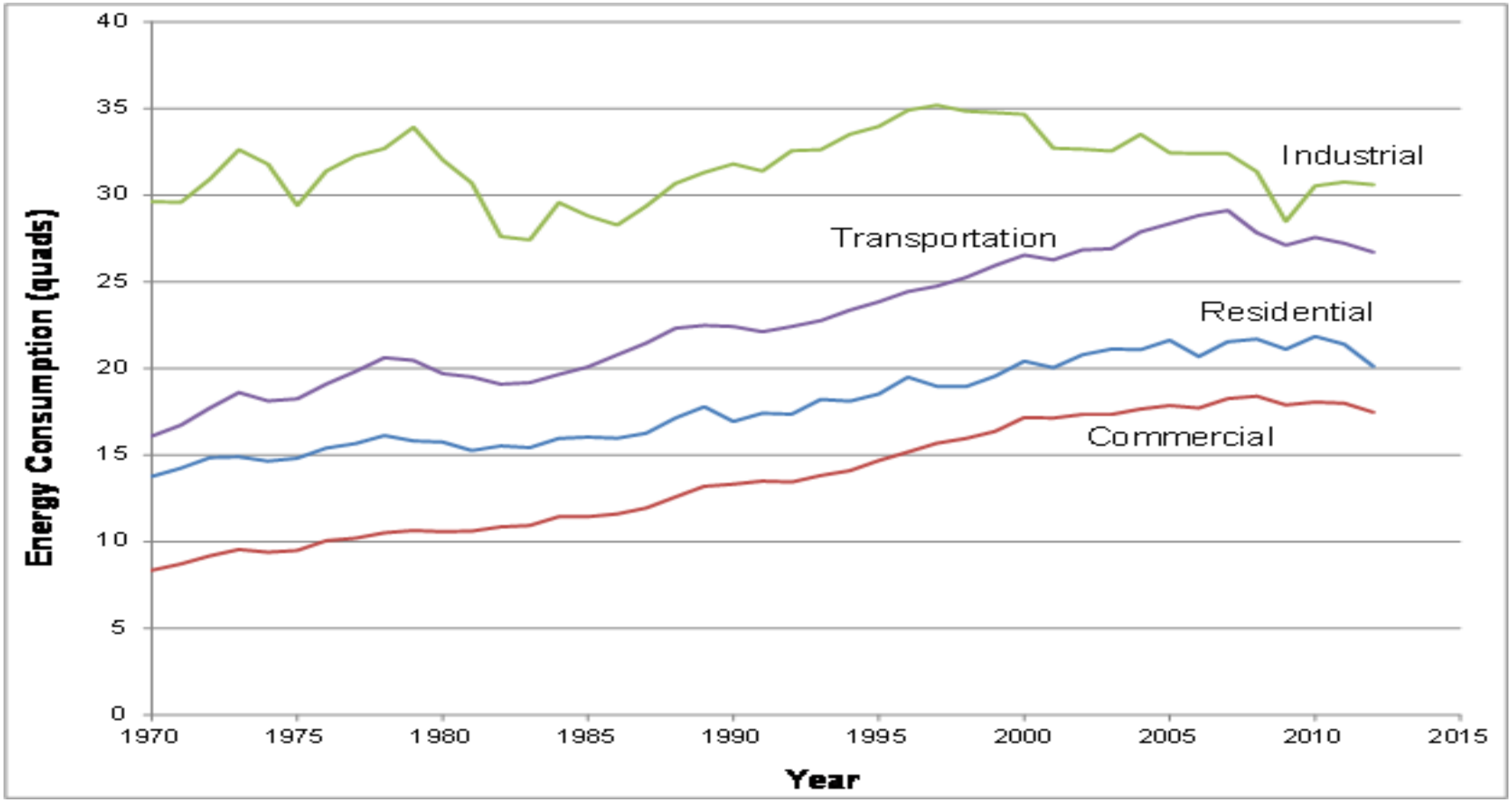
Manufacturing's Multiplier Effect

For every one dollar – returns $1.35 in indirect economic activity



Source: Bureau of Economic Analysis, 2010 Annual Input-Output Tables

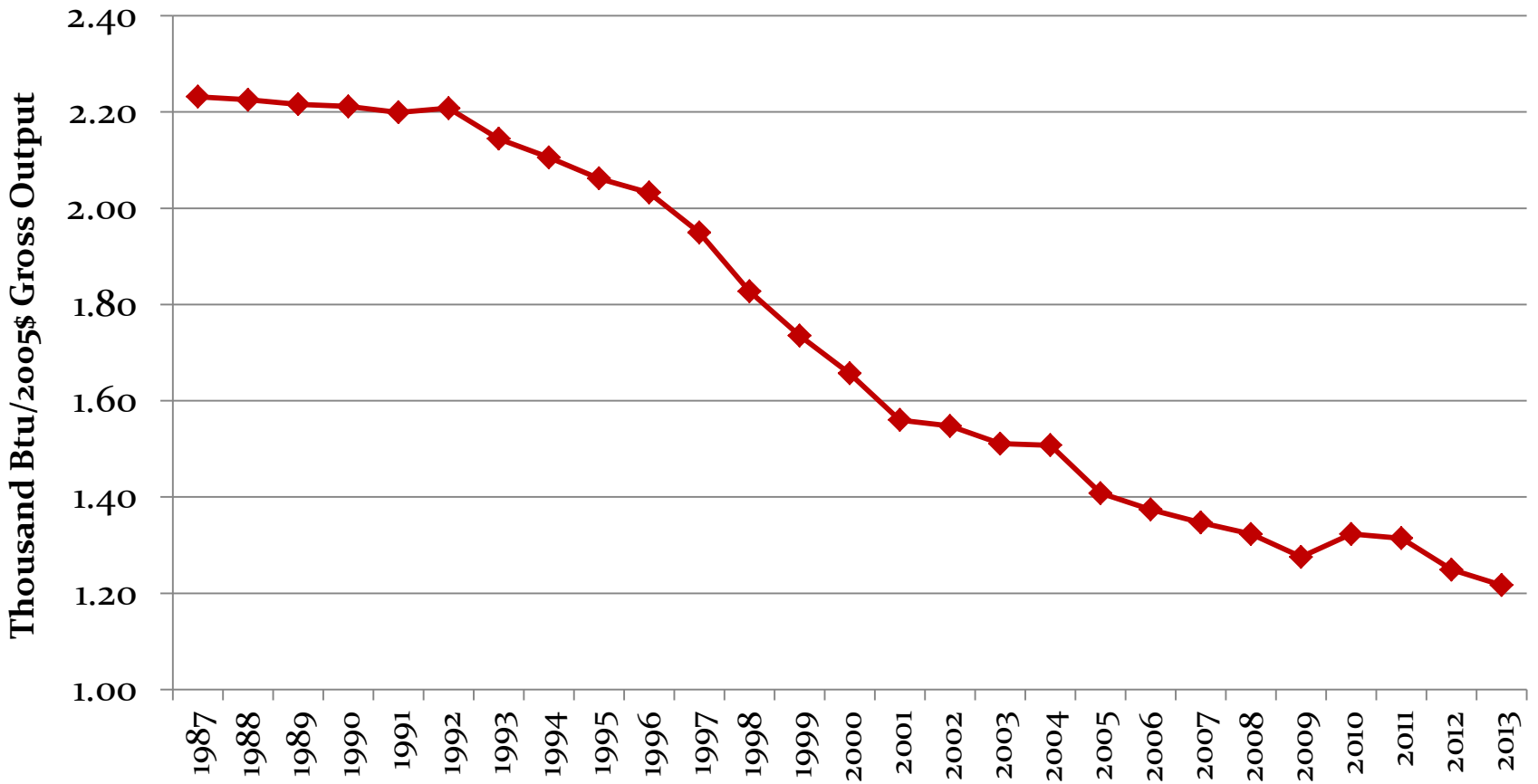
A Success Story: Industrial Energy Consumption has been Relatively Flat for 44 Years



Source: Energy Information Administration, AEO 2014

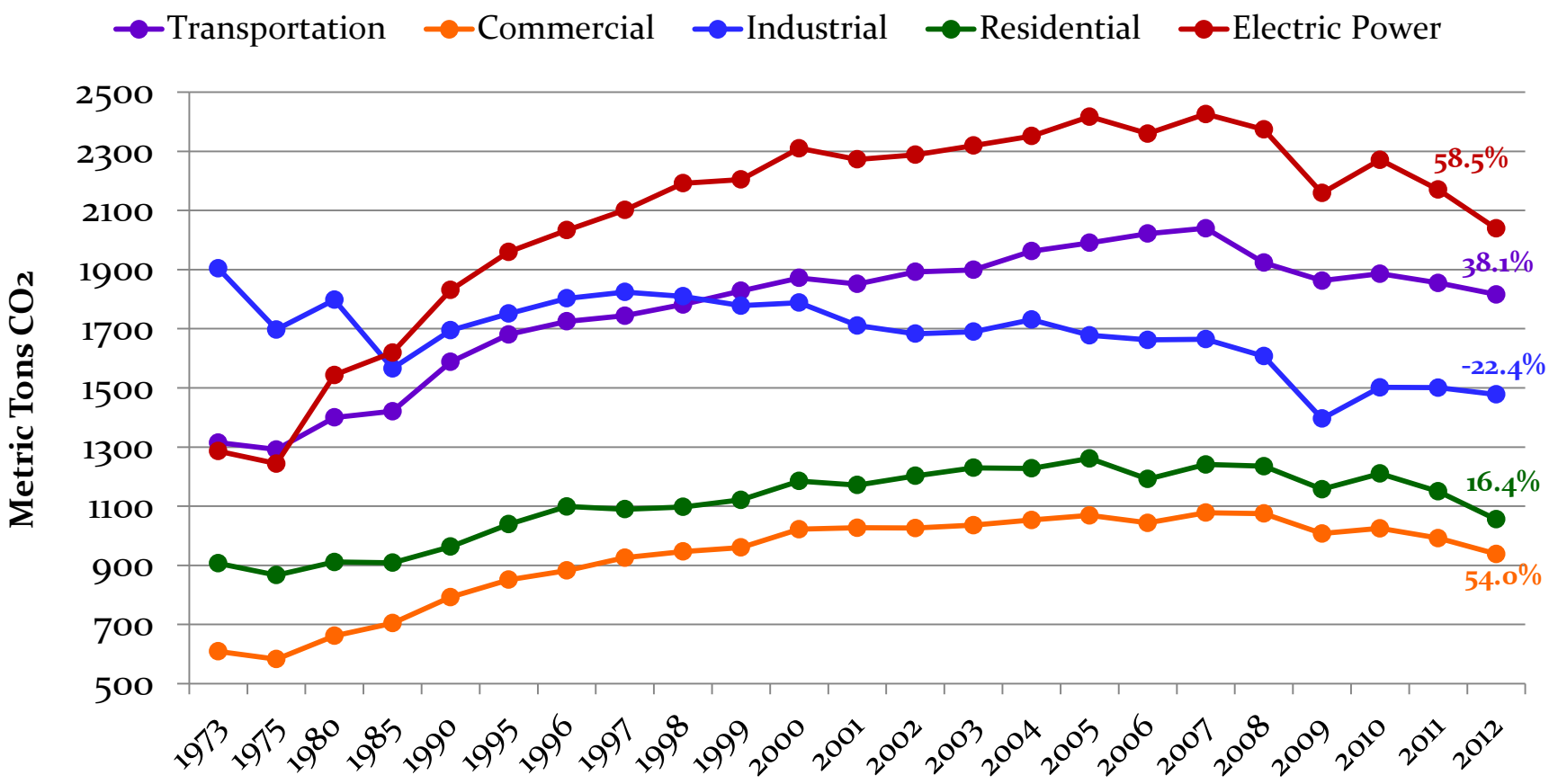
Industrial Energy Consumers of America (IECA)
The Energy Voice of Industrial Energy Consumers

A Success Story: Industrial Energy Intensity Decreased by 45.5% Since 1987



Source: Energy Information Administration, Bureau of Economic Analysis

A Success Story: Industrial Sector – Only Sector with Lower CO2 Emissions than 1973



Source: Energy Information Administration

Manufacturing Use of Energy

- 26% of total U.S. electricity
- 29% of total U.S. natural gas
- 5% of total U.S. coal

- ***Energy-Intensive Trade-Exposed (EITE) industries consume 82% of the energy of the entire manufacturing sector!***

Source: Energy Information Administration

The Energy-Intensive Industrial Sector is Unique

- The only sector that requires globally competitive energy.
- Electricity and natural gas intensive.
- Compete globally and in an environment of unfair competition / Other countries subsidize energy and manufacturing.
- Unlike other sectors – shift production or relocate facilities to be competitive.

Energy Price Sensitive Products are Essential for Economic Growth

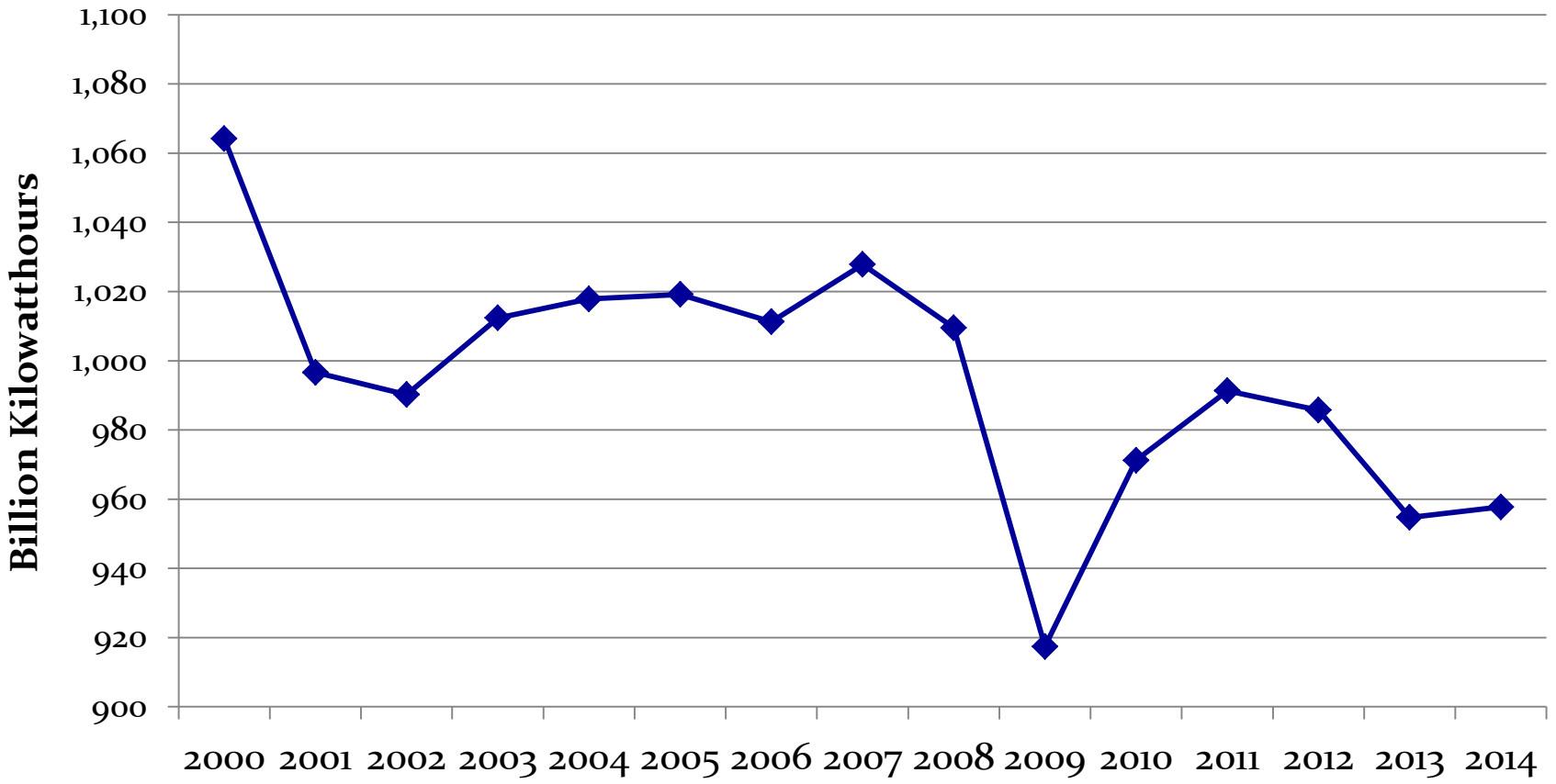
Building Block Industries	Convert to	Commercial & Consumer Products
Chemicals	→	Food Production
Plastics	→	Automobiles
Fertilizer	→	Consumer goods
Glass / ceramics	→	Construction
Steel	→	Medical Supplies
Aluminum	→	Energy Production
Pulp and Paper	→	Appliances
Cement	→	Household products
Food Processing	→	Defense industries
	→	Telecommunication

Examples of Energy Intensity
(Small Energy Price Increases Have Large Competitive Impacts)

Sector	% of Operating Cost
Aluminum	30-35%
Recycled Steel	25%
Integrated Steel	85% (energy and raw materials)
Plastics	80% (feedstock)
Chemicals	Varies greatly 15-20% (fuel only)
Paper	10-20%
Glass	20-25%
Fertilizer	80% (feedstock)
Food Processing	30%
Cement	25-35%
Refining	15-20% (fuel only)

Industrial Electricity Consumption

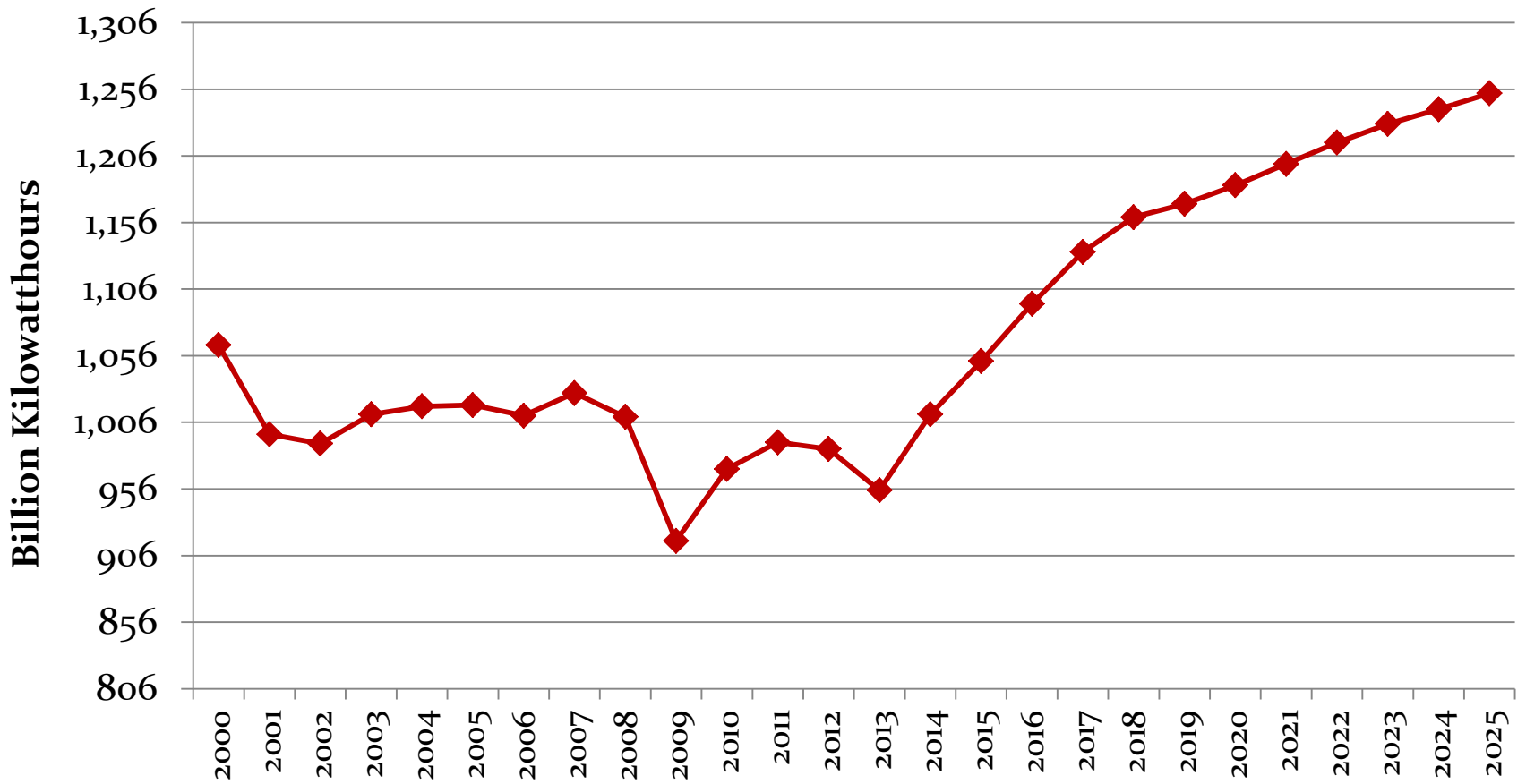
Demand has decreased by 10.0% from 2000 to 2014



Source: Energy Information Administration

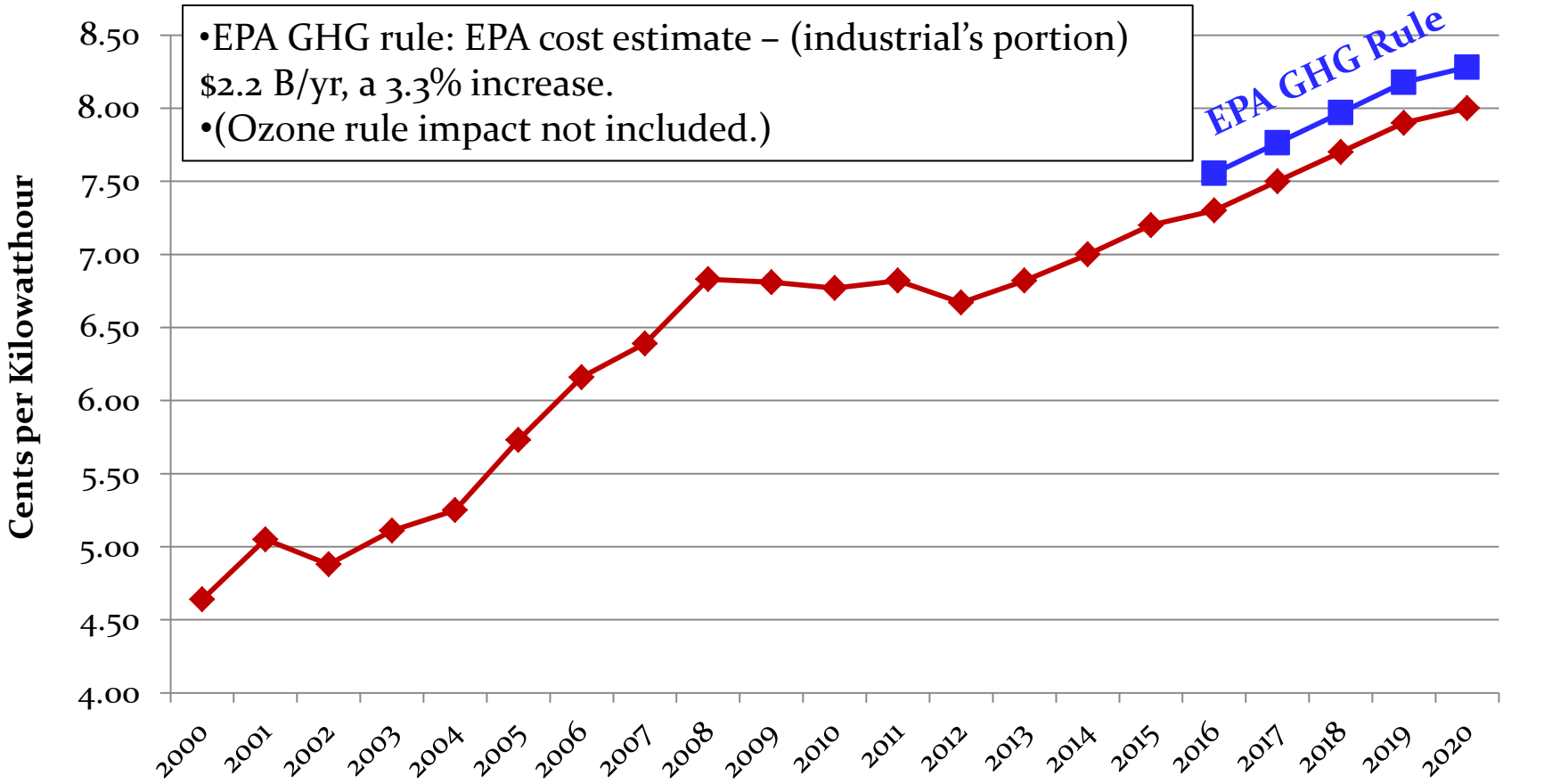
Industrial Energy Consumers of America (IECA)
The Energy Voice of Industrial Energy Consumers

Industrial Electricity Demand to Increase 17.8% by 2025



Source: Energy Information Administration, AEO 2014

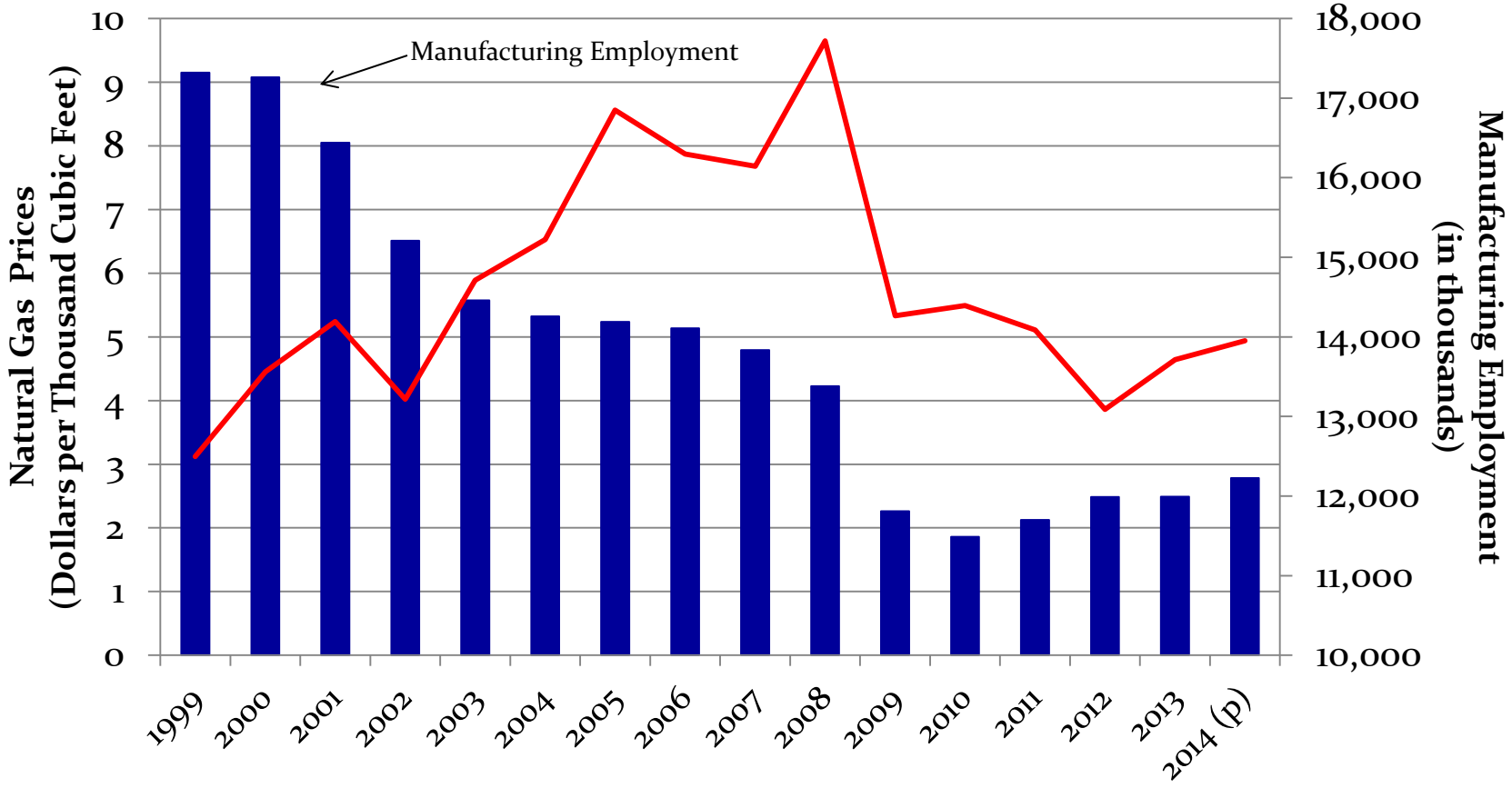
Industrial Electricity Prices
(2013-2020 +21% with GHG Rule)



Source: Energy Information Administration, AEO 2014, Environmental Protection Agency

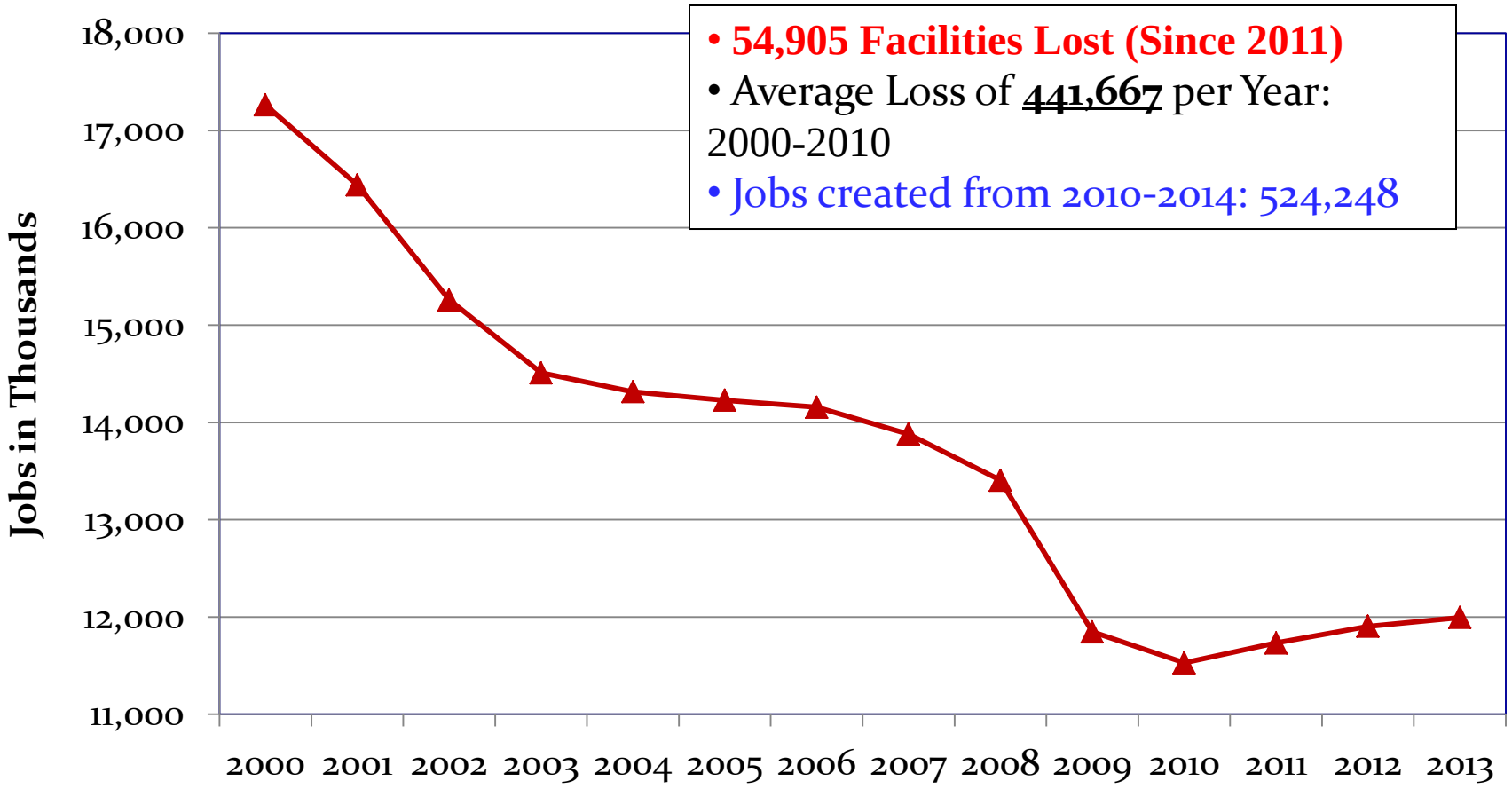
Example of Industrial Leakage: When Natural Gas Prices Increased, Manufacturing Jobs Decreased

(Natural Gas Prices Increased 209% from 1999 to 2008, or 23% a year)



Source: Energy Information Administration, Bureau of Labor Statistics

Energy Prices Significantly Contributed to the Loss of 5.3 Million Manufacturing Jobs (-31%)



Source: Bureau of Labor Statistics

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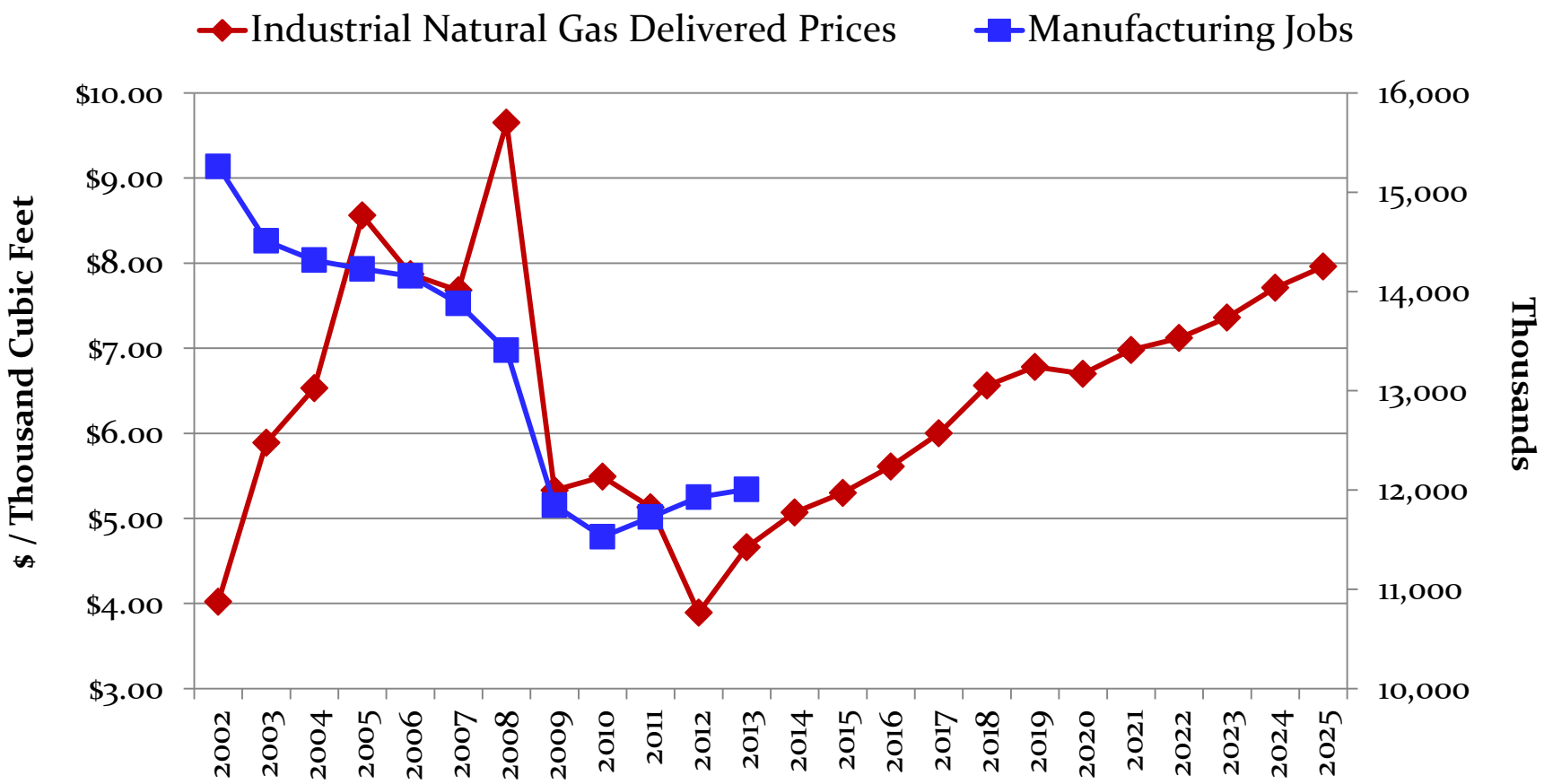
Industrial Natural Gas Delivered Price to Increase 71% by (2013-2012)



Source: Energy Information Administration, AEO 2014

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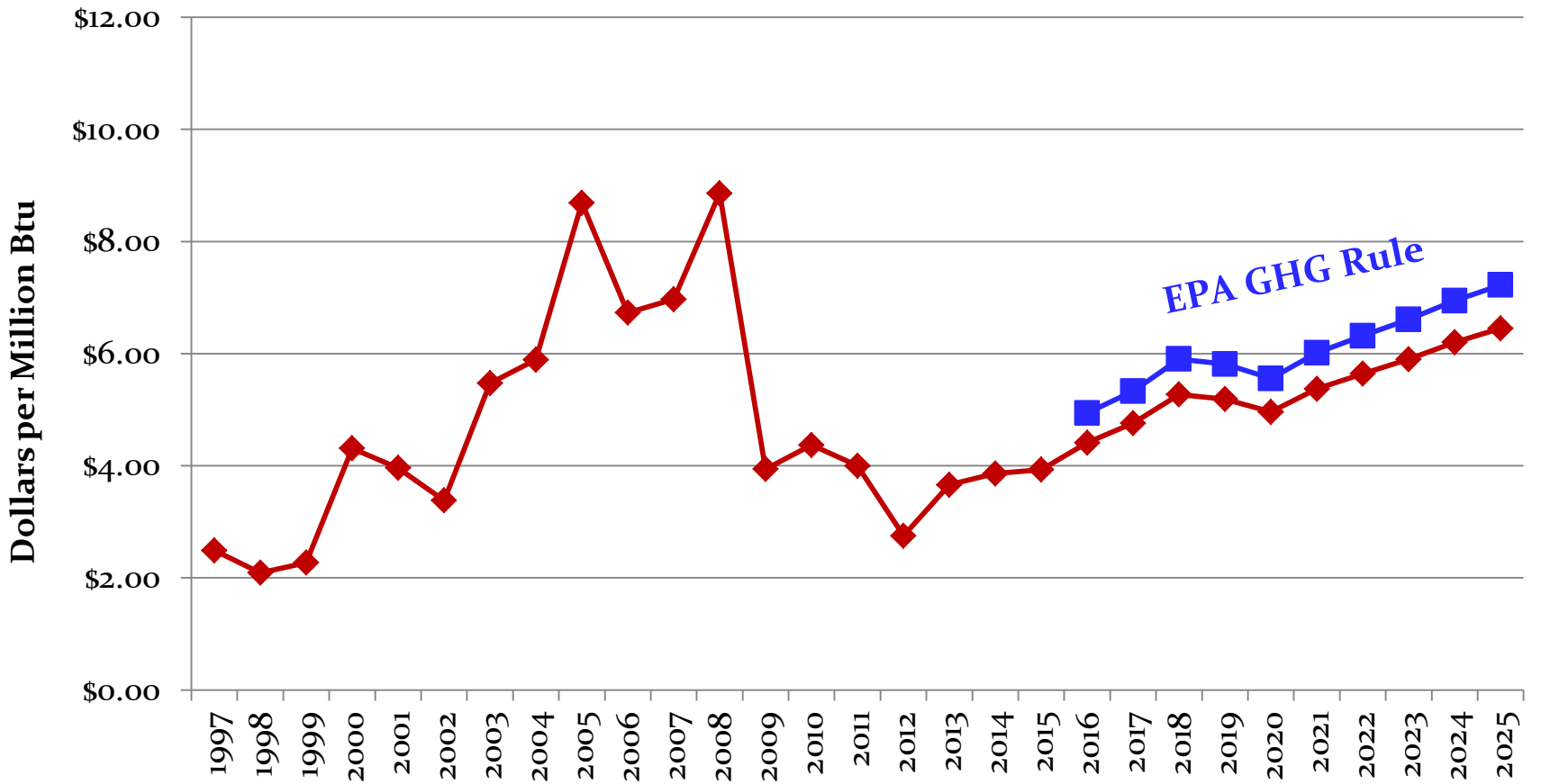
Henry Hub Natural Gas Price to Increase 97% with EPA GHG Rule (2013-2025)



Source: Energy Information Administration, AEO 2014, EPA forecasts up to 12% increase

Industrial Energy Consumers of America (IECA)
The Energy Voice of Industrial Energy Consumers

Industrial Perspectives on EPA's Clean Power Plan

Industrial Perspective

- A major stakeholder. Will pay up to a third of the costs of implementation.
- Urge states to partner with industrials.
- Focus is on **cost-effective** implementation and policy that will support job creation.
- *Allocation of costs is important. Allocation by volume negatively impacts high load factor industrial customers.*

If State Electricity Prices Rise…

- Industrial "GHG leakage" will occur.
- Industrials will shift production to locations in other states, reducing load, shifting GHG emissions to other states, and increasing electric rates for the remaining electric consumers.
- If industrials cannot be competitive operating in the U.S., their offshore competitors will prevail.
  - *"A lose-lose for the economy and the environment."*

Industrial Perspectives on the CPP

- **State SIP Filing Timing:**
  - File SIPs only **after** judicial review. Seek more time to file SIPs.
    - Consumers will get stuck with all of the costs, including stranded costs.
  - Wait to file SIPs until there are federal model rules for offset credits, energy efficiency, and renewable energy.

Industrial Perspectives on the CPP

- **CO_2 Reduction Targets:**
  - Set reduction target inside-the-fence line, but use outside-the-fence line reduction options.
    - Outside-the-fence line reduction options should be voluntary, not mandatory.
  - Support 2005 baseline year.
- **Energy Efficiency:**
  - Opportunity is in res/comm buildings, not industrial EE.
  - Industrials must be able to opt-out and maintain ownership of EE-based reductions (RECs).
  - Use attainable EE assumptions (cost and availability).

Industrial Perspectives on the CPP

- **Protect Industry & Jobs:**
  - *CPP must not set precedent for regulating industrial GHG emissions.*
  - Include a cost safety valve.
  - Include a reliability safety valve.
  - *Support ratable emission rates, allows for economic growth.*
  - Provide credit for actions already taken.
  - Consider CHP/WHP as a compliance option.
  - Exclude industrial CHP/WHP emissions from regulation under CPP.

Industrial Perspectives on the CPP

- **Protect Jobs:**
  - Avoid Leakage
    - Before finalizing SIPs, complete industrial GHG leakage study to understand impact to the state economy, jobs, and GHG emissions.
    - *Seek to ensure that imported products share at least the same economic pain from CPP costs.*
  - Reduce Cost
    - Eliminate the 2020 interim target.
    - More time will reduce costs, especially stranded costs.

Energy Efficiency

Industrial Sector Has Best Record on Energy Intensity

- EIA data confirms that the industrial sector has perhaps the best record on energy intensity reduction – 45.5% reduction since 1987. Reasons for this include:
  - Energy-intensive industries are often trade exposed.
    - **Competition drives energy efficiency improvements**
    - *Must continuously analyze how to cost-effectively reduce energy usage*
  - Most have professional energy, engineering, and finance staff.
  - All are experts on their processes and equipment.
  - And most have access to capital funds for energy reduction projects that meet company-specific timing, process, and ROI requirements.
- Most low-hanging fruit harvested long ago.

Industrial Energy Efficiency Policy

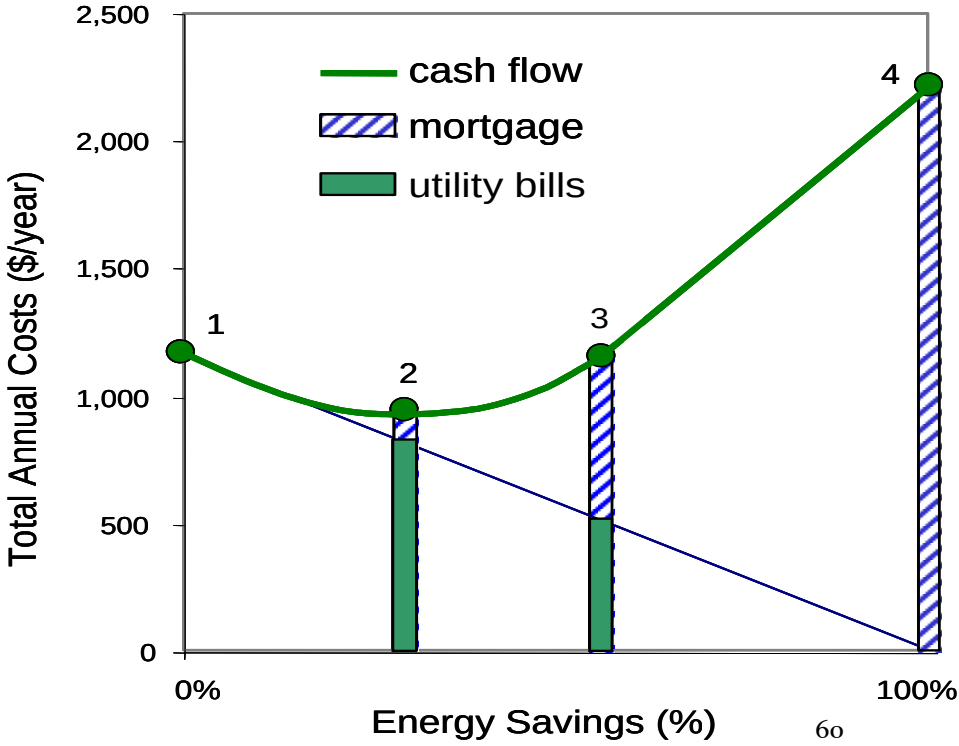
- *Must have ability to opt-out of utility rate programs including allocation of program costs.*
- Oppose mandates that would require facilities to certify as, for example, ISO 50001. (Costs $200,000 - $300,000 per facility or more.)
- Support voluntary programs like EPA Industrial Energy Star Program.

Buildings Provide Best Opportunity for Energy Efficiency

- Buildings consume 41% of our nation's energy. 22% commercial; 19% residential. (EIA)
- U.S. buildings is largest consumer of electricity – 71%. (EIA)
- Accounts for over 40% of U.S. GHGs. (EIA)
- McKinsey study concluded that building insulation is single most cost-effective solution to reduce GHGs.

Residential Energy Efficiency Improvement Has Lagged

- Tens of millions of energy inefficient existing homes.
- New construction
  - Codes have advanced slowly and are not consistently adopted or enforced.
  - Split incentive: home builders have a tendency to reduce upfront purchase price by increasing home buyers' energy operating expenses.



Industrial Energy Consumers of America (IECA)
The Energy Voice of Industrial Energy Consumers

Address Issues to Harvest Residential EE Opportunity

- Implement better education/outreach.
- Provide better funding.
  - Utility residential ratepayer dollars under new utility models
  - Air quality improvement programs
- Deploy new products and EE upgrade installation approaches that increase contractor productivity, reduce homeowner inertia.
- Clarify ownership of energy savings benefits, especially of utility emissions reductions.
- Ensure effective integration of non-utility energy efficiency contractors and projects into CPP compliance programs.

Demand Response

Demand Response Programs? What Do We Mean?

IECA companies participate in all forms of Demand Response programs across the country include energy, capacity and ancillary services:

1. Interruptible contracts or tariffs (stand by credit)
2. Peak shaving (reduce demand charges)
3. Peak Avoidance (reduce Capacity and/or Transmission obligation)
4. Economic Demand Response (credit/avoided cost for curtailing during high prices)
5. Load Shifting (reduced costs for operating during off peak periods)
6. Dispatchable Load/Synchronized Reserve (market-based programs)
7. Regulation Service
8. Self-Generation

Demand Response is Not New!

- **Interruptible Contracts (Historically)**
  - Now a Tariff, a Contract or a Market-based solution.
- **Utilities use Interruptible Contracts for energy, capacity, emergency, transmission congestion, regulation and spinning reserve.**
  - Avoid building expensive new generation that may only be required for a few hours each year.
  - Emergency, Reliability or Economics drive notice and compensation.
  - Utilities "call" the curtailment and provide energy payments or capacity credits to participants roughly equal to the utilities long-range replacement capacity costs.
- **Today - In the deregulated environment the customers have been left to fend for themselves in the stakeholder environment to promote programs to replace or expand on the old contracts.**

Market Solutions for DR are Relatively New with Enhanced Results

pjm

Summary of Benefits

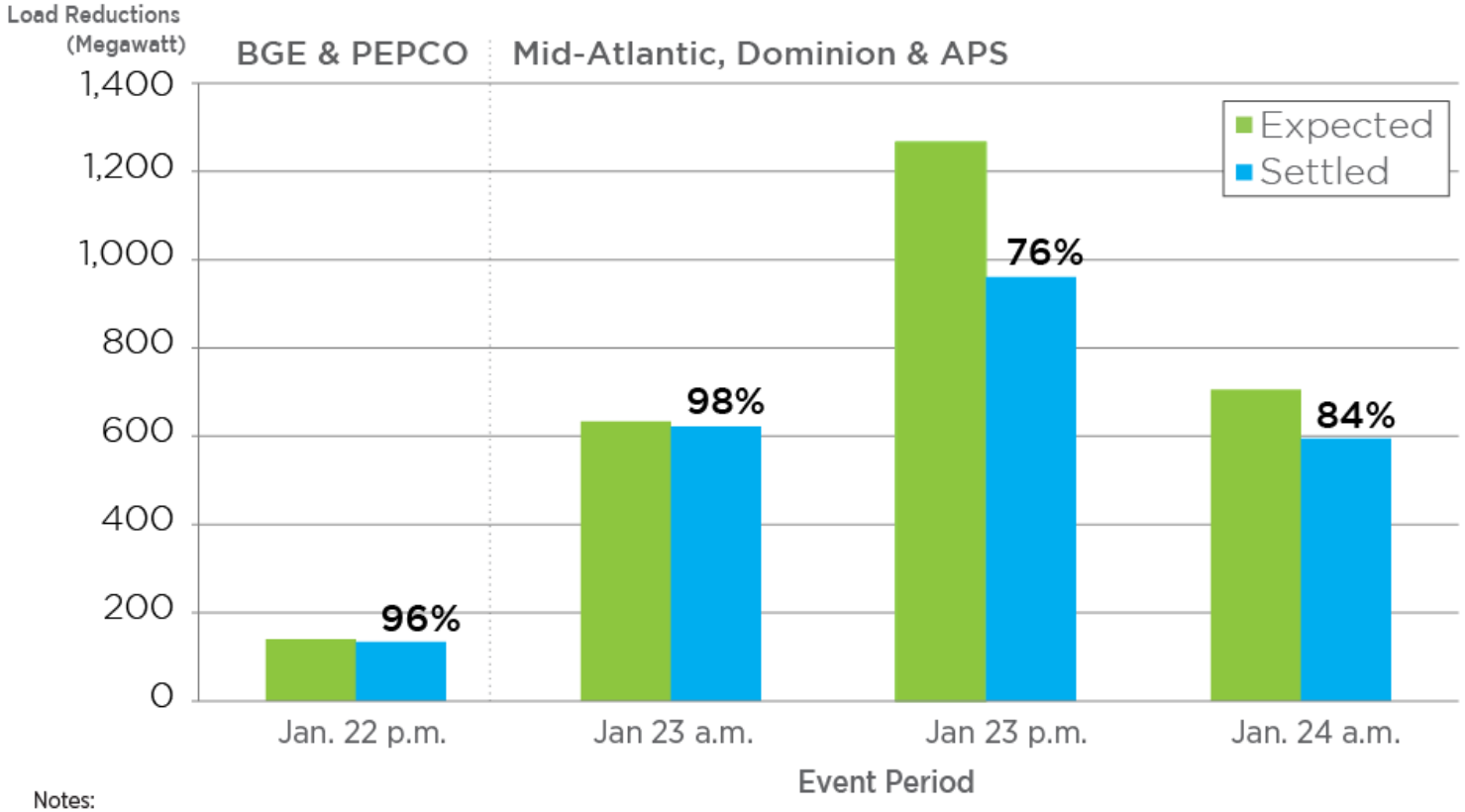
Potential benefits of demand response:

- Increased competition
- Operational savings
- Lower market prices
- Reduced price volatility
- Improved grid reliability
- Improved customer options
- Providing ancillary services
- Positive environmental benefits

- Q1 2014 demonstrated the value that DR brings
  - Curtailing consumption is more reliable than starting production

Source: Slide from PJM Training Manual on Load Response

Demand Response During Polar Vortex



Notes:
1. DR events dispatched during non-compliance period.
2. Expected Energy Load Reductions (MW) - CSP reported estimate based on current market rule.
3. MW value is average hourly load reduction for non-ramp in hours.

Economic DR "Program" Benefits

- **Competition:**
  - DA DR competes directly with generator offers (above the threshold) and results in lower LMP for all customers.
- **System Planning:**
  - DA DR provides a benefit to RTO/ISO in system planning.
  - ISOs can better forecast load for the following day/hours.
- **Cost Reduction:**
  - DR participant compensation is a fraction of the dollars saved.

Regulation and Sync Reserve

- **Dispatchable Load and Regulation Services are exactly that "Service."**
  - Bids and Offers in the schedule every day, competing in each hour against generation.
  - Following dispatch instructions according to the way we offered our load to the market.
  - These are dispatchable resources that are reliable and can be counted on by the market.

Demand Response (DR) Agenda

NARUC's questions:

1. Is it preferable to work with an aggregator or directly with a utility?
2. How does a company decide to participate? What would cause a company to stop participating?
3. When they are called upon to interrupt, how do they comply? (by shutting down early? Switching to a diesel generator?)
4. What do you think of Order 745 and the prospect of all DR being state jurisdictional?
5. IECA recommendations.

Is it Preferable to Work with an Aggregator or Directly with a Utility?

- **Best to do it yourself.**
  - For large, sophisticated manufacturers, be your own Curtailment Service Provider.
- **Retain the value.**
  - Aggregators and utilities both extract a portion of the value stream anywhere from 5% to 40%.
- **Maintain independence.**
  - Avoid being served by those who own generation.
- **Aggregators.**
  - Can work with res/com to emulate a larger load.

How Does a Company Decide to Participate? What Would Cause a Company to Stop Participating?

- **Economic Value**
  - Must exceed the combination of direct costs, opportunity costs and risk.
- **Direct Cost**
  - Production loss resulting from the curtailment can be made up in a lower cost hour or *not at all*.
  - Industrial operations are built to run 7X24, interruptions are not cost-effective without appropriate compensation.
  - Participate takes focus off of making widgets and involves energy managers, plant managers, and the Senior Management Team.
- **Risk**
  - The demand responder must take on the *start-up risk* of complex operations.
  - The cost implications of providing the demand response are significant and real and requires some offsetting value.

When They are Called Upon to Interrupt, How Do They Comply?

- **Myth**
  - Customers who desire to only consume electricity below certain thresholds can price-watch and be successful – "it's easy".
- **Reality**
  - Real time prices fluctuate every 5 minutes, and the actual price isn't known until **after** the energy is consumed.
    - Thereby creating risk & uncertainty for operational and DR decisions.
      - **A price spike late in a 12 interval cycle is unavoidable.**
    - Industrial companies, are not energy companies, although sometimes our resources have no choice but to focus on energy.
- **Efficiency Impact**
  - 5 minute dispatch might be most efficient for generation, but it has the opposite effect on load.
- **This is a prime example of why DR needs to be integrated into the market.**

Why Structured DR vs. Price Response?

- **Schedule** - Customers can determine on a Day Ahead basis whether it is economic to run.
- **Efficient Dispatch** - ISO dispatch solves which hours the facility must respond.
- **End-user efficiency**
  - Enables the plant to make staffing and maintenance decisions
  - Minimizes wear and tear on equipment
  - Ensures recovery of the costs of curtailing during high priced periods
- **Grid reliability** - provides EGU planning certainty to the ISO.
- **Maximizes DR** - Increases load reduction availability thereby providing additional system and cost reduction benefits to all customers.
- **Reduces cost** - The costs are reduced for those that don't respond (homeowners) – totally in the public interest.

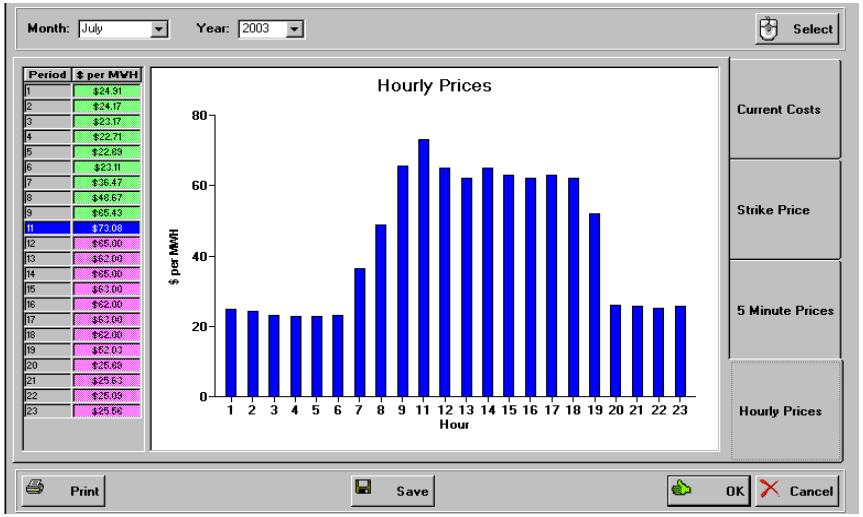
Cost of Compliance

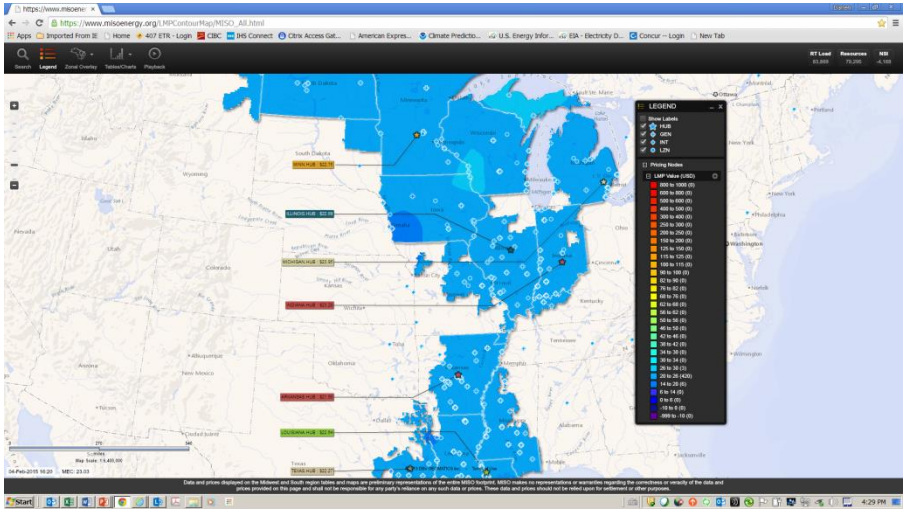
- **Bidding strategy**
  - Optimization of power market vs widget market economics.
  - Strike Price - The plants determine strike prices for the industrial facility and curtail operations when certain conditions are met.
  - This is often an iterative process depending on the # of hours curtailed, inventory, plant conditions, etc.
- **Market Monitoring**
  - Software is utilized (internal/external) and public information on ISO websites is monitored for market prices, market demand, weather, generator outages, emergency messages.

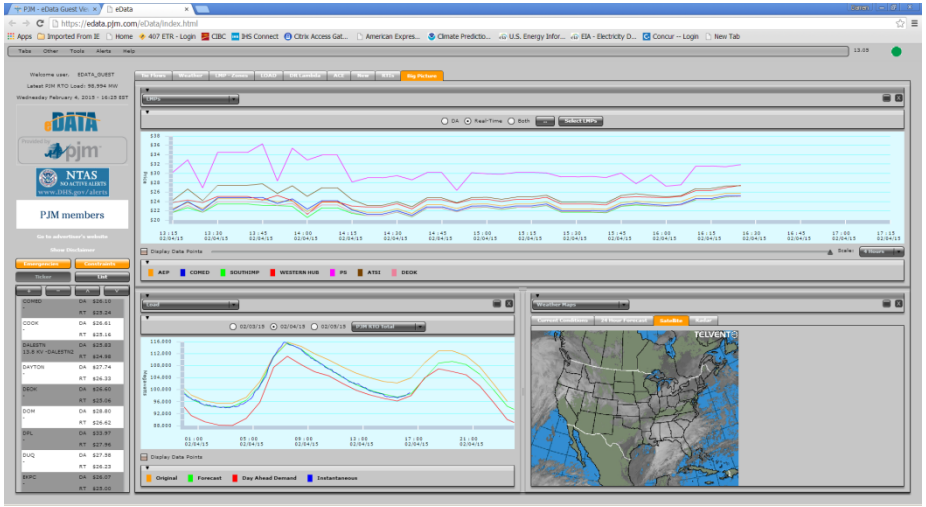
Cost of Compliance

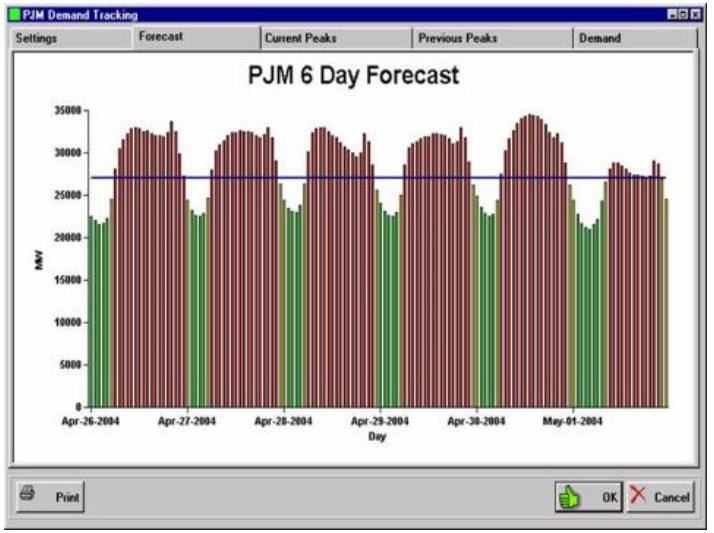
- **Market Interface**
  - Event notification, offer submissions, bill reconciliation, performance evaluation.
- **Operator Interface and Control**
  - PLC controlled response, operator training, overrides for safety and environment.
- **Plant procedures and Manuals**
  - Developed and training for curtailment is conducted.
- **Key Performance Indicators**
  - Developed and plant staff and operators are measured on how well they "manage" our participation in the market.

Monitoring Internal/External

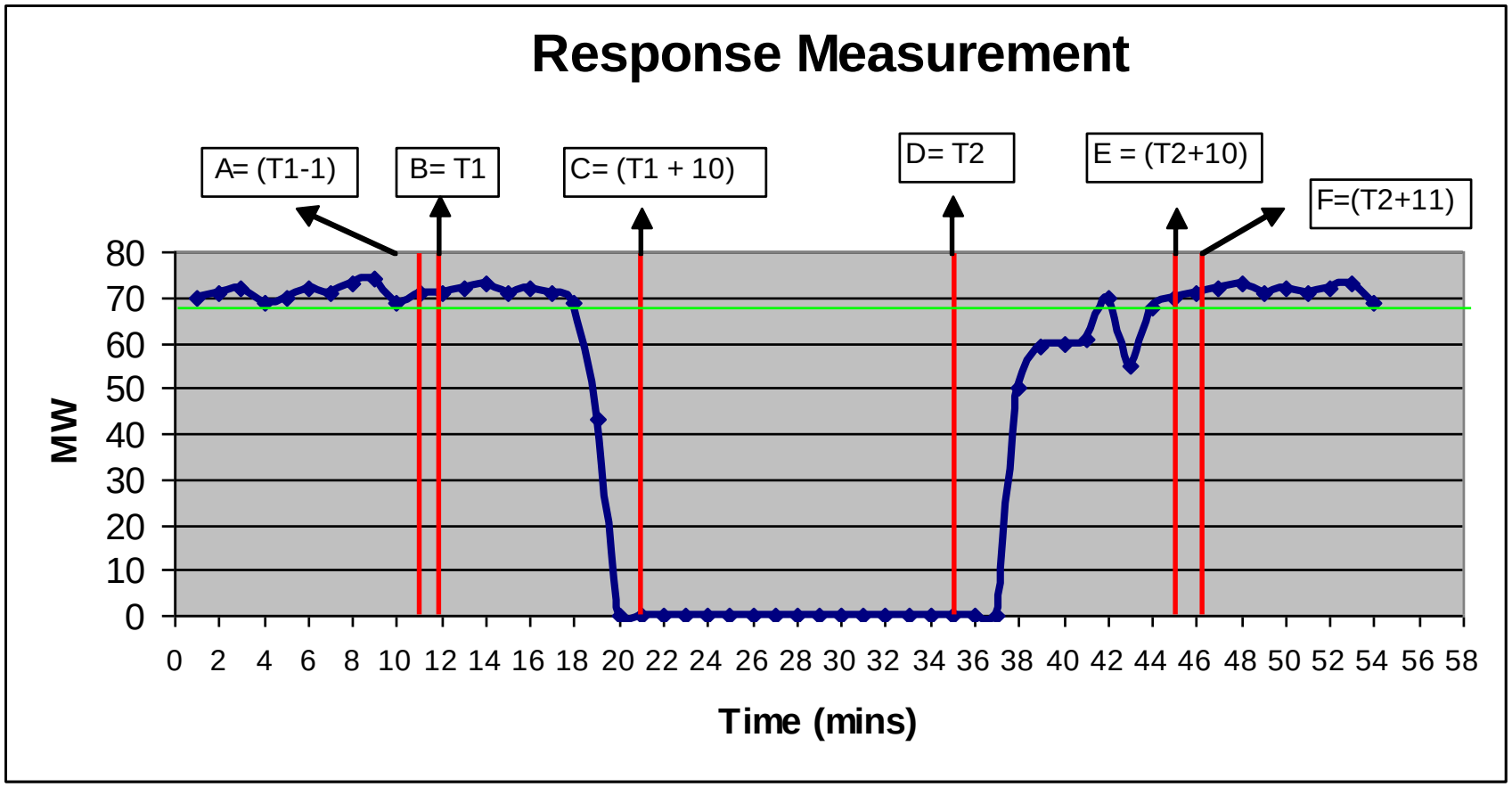








Compliance Monitoring



What Do You Think of Order 745 and the Prospect of All DR Being State Jurisdictional?

"the Court argued, demand response is not actually a source of generation; it does not involve a direct sale of energy to the wholesale markets by consumers, who "'participate' only by declining to act." Rather, consumers engaging in demand response were being given preferential treatment by the FERC, being paid the LMP and saving on the avoided cost of electricity. This, the court ruled, overcompensates demand response."

- **This couldn't be further from reality. As we have discussed, industrial participation in DR is "active" participation.**

IECA Position on 745 Issue

- Large industrial customers support FERC Order 745.
- Order 745 finally achieved MW=NW (equal pay for equal work).
- Dr. Alfred E. Kahn recognized in his affidavits in that rulemaking, "full LMP" compensation for demand response was appropriate.
- Full LMP also reflects the marginal value to the system operator of the demand response that is being provided.
- IECA agrees with the PJM and MISO industrial groups, which have been actively participating in the D.C. Circuit and now U.S. Supreme Court appellate litigation.
- Moving demand response activity to the states raises several challenging issues:
  - Compensation - Where do states get the funding?
  - State Coordination – Inconsistent policy across RTOs
  - Legal barrier? - Circuit Court decisions on New Jersey LCAPP law?

We Agree With FERC's 745 Appeal on the Following Points

- FERC's rule is narrowly defined and only affects demand response in the wholesale market, which affects wholesale rates.
- Demand response must have a "net benefit" for retail customers.
- States, can already opt out of providing any wholesale demand response to the regional markets. None have done so.
- Demand response is already helping keep the nation's electricity supply reliable. It is already an integral part of system planning.
- As it stands, the ruling would "potentially invalidat[e] all demand response participation at any compensation level (not just full locational marginal price) in any wholesale market (energy, capacity or ancillary services)," FERC said.
- In addition:
  - Taking DR to the retail market and having the state run them will only complicate the issue while trying to emulate the same programs.
  - The Maryland PUC agreed, stating: "To separate demand response from market participation will increase prices, confuse operations and make planning unnecessarily complex."

IECA Final Thoughts on DR

- Energy Prices and Economic Growth are inextricably linked.
- Price Mitigation Tools.
  - Energy Intensive Trade Exposed (EITE) Industries need value for their DR services.
- DA Economic Demand Response, ancillary services like sync reserve and regulation, capacity & transmission obligations on CP - work and add value and reliability today.
- Long term price signals should be aligned to promote the most DR.
  - Generates investment, training, systems, planning.

IECA DR Recommendations

- Cost allocation methodologies should send signals for efficiency use of the grid.
  - (kW vs kWh) kWh charges mutes signal for demand response and allocates more to high load factor customers (new capacity, env upgrades, RPS).
  - Pass through signals to the end-user, don't stop at the class.
  - Demand Charge = Demand Credit
  - Coincident Peak allocation for Capacity and Transmission cost allocation.
- Policy development should be consistent across all jurisdictions to promote economic growth.
- Retention of DR programs will result in a more competitive market, lower costs for all consumers, lower emissions and increased reliability.

Thank You!

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Industrial Energy Consumers of America (IECA)
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