EPA CENTER FOR CORPORATE
CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Integrating Energy and Climate Risk Management

Tuesday, November 5, 2013

Presented by:

Melissa Klein, Communications Director, Center for Corporate Climate Leadership, U.S. EPA

Walt Tunnessen, National Program Manager, ENERGY STAR Industrial, U.S. EPA

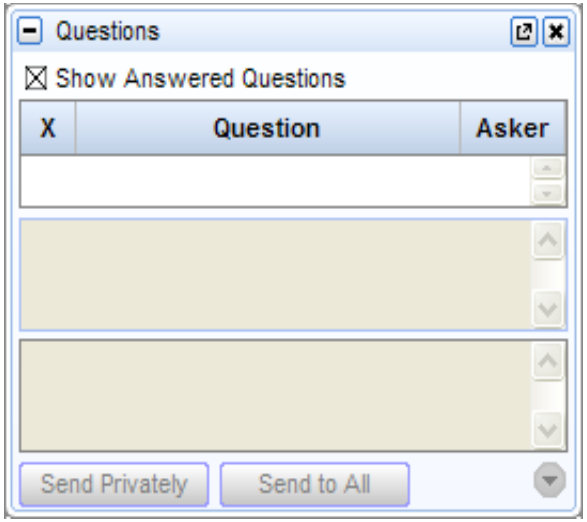
Michael Whaley, Senior Director, EHS & Administrative Services, Allergan

Webinar Agenda

- Introduction and webinar logistics
- Guest Speakers:
  - Walt Tunnessen, National Program Manager, ENERGY STAR Industrial, U.S. EPA
  - Michael Whaley, Senior Director, EHS & Administrative Services, Allergan
    - Examples of managing climate and energy risks, how these areas are linked, and how energy and climate management strategies pervade critical business decisions including supply chain management, CHP, and regulatory matters.
- Q&A
- Post-webinar survey

Webinar Logistics

- Attendees are muted to reduce background noise.
- Submit questions and comments in writing via the online control panel. →→ →
- To minimize or maximize the control panel, click on the button at the top left of the tool bar.
- Post-webinar survey on this webinar and topics for future webinars.
- Today's presentations are available at: www.epa.gov/climateleadership/documents/events/20131105_webinar_presentations.pdf



About the Center

- A resource launched in 2012 to support organizations of all sizes in measuring and managing GHG emissions.
- Provide technical tools, ground-tested guidance, educational resources, and opportunities for information sharing (e.g., Webinars) and a platform for peer exchange.
- Promote practices and innovative approaches drawing upon the successes of Climate Leadership Award recipients and former Climate Leaders partners.
- Support the implementation of E.O. 13514.

Integrating Energy and Climate Risk Management

Walt Tunnessen
ENERGY STAR
Commercial & Industrial Programs
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Energy and climate risk

- Energy use is the major source of greenhouse gas emissions for many organizations.
- The contribution of direct and indirect emissions to the GHG footprint will shape risk management strategies.
- While Scope 3 emissions may change many companies GHG footprints, energy risks are still likely to be material.

Examples of energy-related risks

- **Electricity**
  - Costs are steadily increasing
  - Federal Boiler MACT will impact many EGUs
  - Future federal CO2 rules will impact EGUs
- **Nature Gas**
  - Currently cheap, but will LNG exports drive prices up?
  - Lower gas prices impact certain project ROI
  - Lower regulatory risks for on-site use
- **Solid & liquid fossil fuels**
  - New boiler rules will require new controls
  - Potential CO2 rules could impact some industries
- **Reliability of supply**
  - Extreme weather events
  - Blackouts and curtailment requirements
  - Aging electrical grid
  - Future competition for supply in certain markets?

Energy risks affect all sides of the supply chain

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Risk management strategies

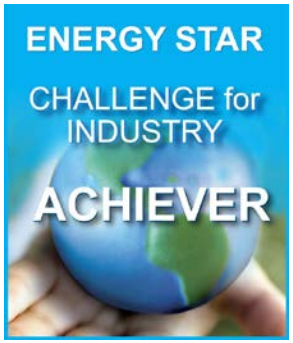
- **Energy efficiency**
  - Reduces or mitigates cost related risks
  - Cost effective strategy for reducing GHG
- **Fuel switching**
  - Move to lower GHG fuels
  - Reduces pollution control costs
  - For solid or liquid fossil fuels, may reduce other risks as well.
- **On-site generation**
  - Reduce reliability-related risks
  - Can eliminate or reduce emissions depending on the technology
  - Requires longer investment horizon
- **Process / business practice redesign**
  - Reduce energy / emissions through more efficient or less emitting design
  - Establish contingency plans for risk scenarios

Energy Efficiency

Lots of opportunities to improve efficiency!

ENERGY STAR Challenge for Industry Achievers

- 233 sites have achieved the Challenge 10% reduction*
- More than **50 million MMBTU** (source) saved
- More than **10,200,000 Metric Tons CO2e** prevented
- **Average reduction = 20% in less than 2 years**



2012 National Buildings Competition

- 3000 buildings participated
- More than **3 million MMBTU** (source) saved
- More than **16,000 Metric Tons CO2e** prevented
- **85+ building achieved 20% reduction in 1 year**
- **Demarest Elementary School – 52% reduction**

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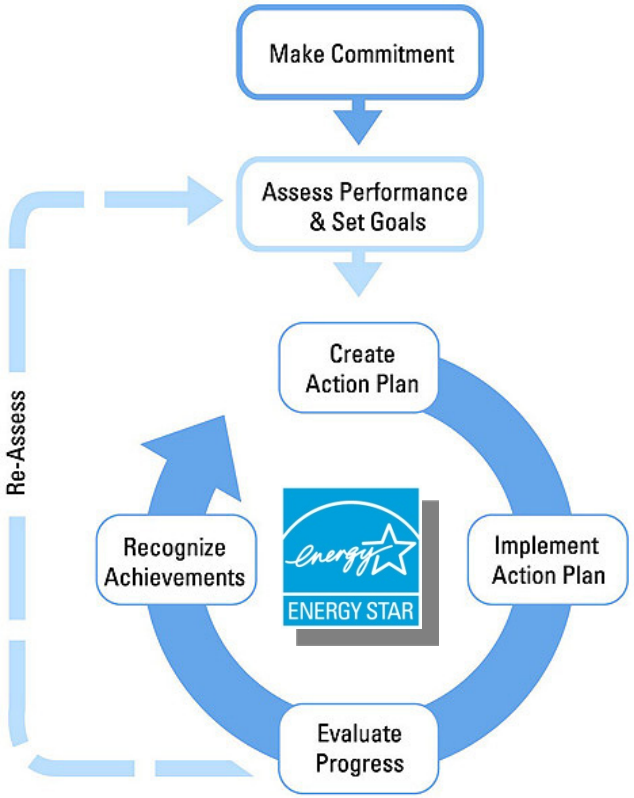
* = As of August 2013

Keys for improving efficiency

- Organization commitment
- Energy management program
- Organizational culture focused on efficiency
- Programmatic approach - not just projects!
- Use goals and benchmarking to promote continuous improvement
- Leverage recognition programs, like ENERGY STAR

Guidelines for Energy Management



Learn more at: www.energystar.gov/buildings

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ENERGY STAR AWARD 2013
PARTNER OF THE YEAR

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Allergan Integrating Energy and Carbon Risk Management

Michael Whaley Sr Director, EHS & Administrative Services
USEPA Center for Corporate Climate Leadership Webinar
November 5, 2013

NUESTROS OJOS ESTAN EN EL AMBIENTE
OUR EYES ARE ON THE ENVIRONMENT

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Agenda

- Allergan Introduction
- Manufacturing Operations Background
- Energy Consumption and Cost Trends
- Carbon Emissions and Cost Trends
- Technology Shifts
- Supply Chain Impact and Management
- Customer Expectations
- Recognition
- Conclusion

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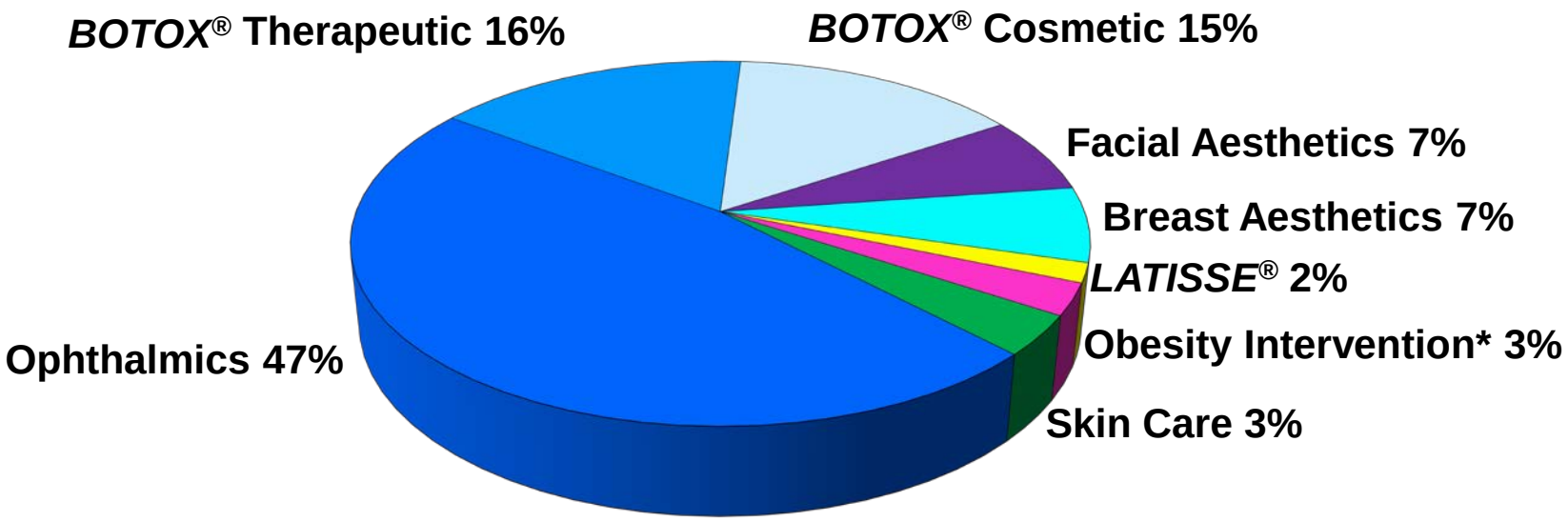
How We Do It - Focus on Medical Specialties



A broad portfolio of pharmaceutical, biologics and medical devices to help improve patients' lives	Follow R&D technologies into specialties	Build presence within specialties organically and through acquisitions

*Discontinued Business

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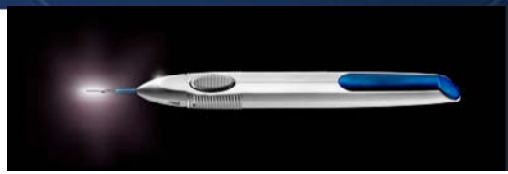
Manufacturing



- Product options changing
  - Current Mix – UD, MD, Vials, Tubes and Implants
  - Projected Mix – Injectables, Rx Implantables + current
- More time release implantables expected
- Targeted dosing vs. systemic
- Increasing use of RABS and Isolator systems
- Compounding and filling operation opportunities for HVAC energy reductions – smaller footprint
- Potential for HVAC demand to be tied to real-time particle and bioburden measurements
- Change control process driving continued improvement in equipment and system energy efficiency
- ISO 50001 (Energy Management) and 14064 (GHG Emissions Verification) Certification

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SCAQMD Microturbine Project

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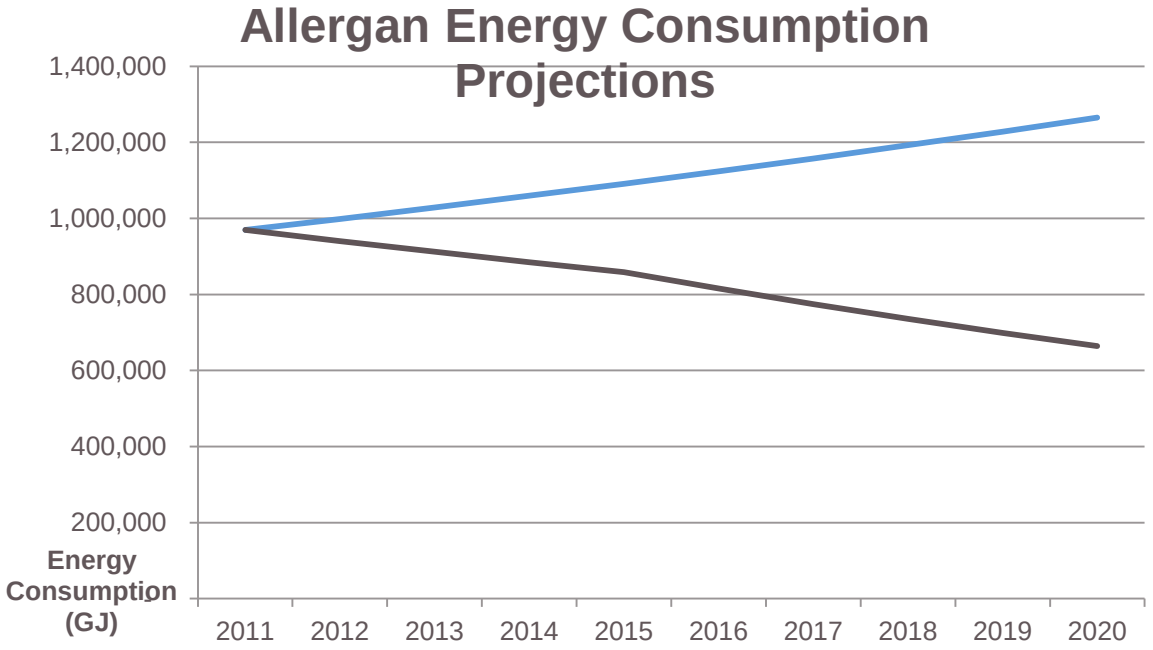
Solar System Pilot Project

Energy Cost Projections

> Growth & Inflation Projections

- Assume Allergan Energy reduction plans reduce energy consumption @ 5% per year
- Assume inflation @ 2.5% per year
- Does not include M&A or divestitures



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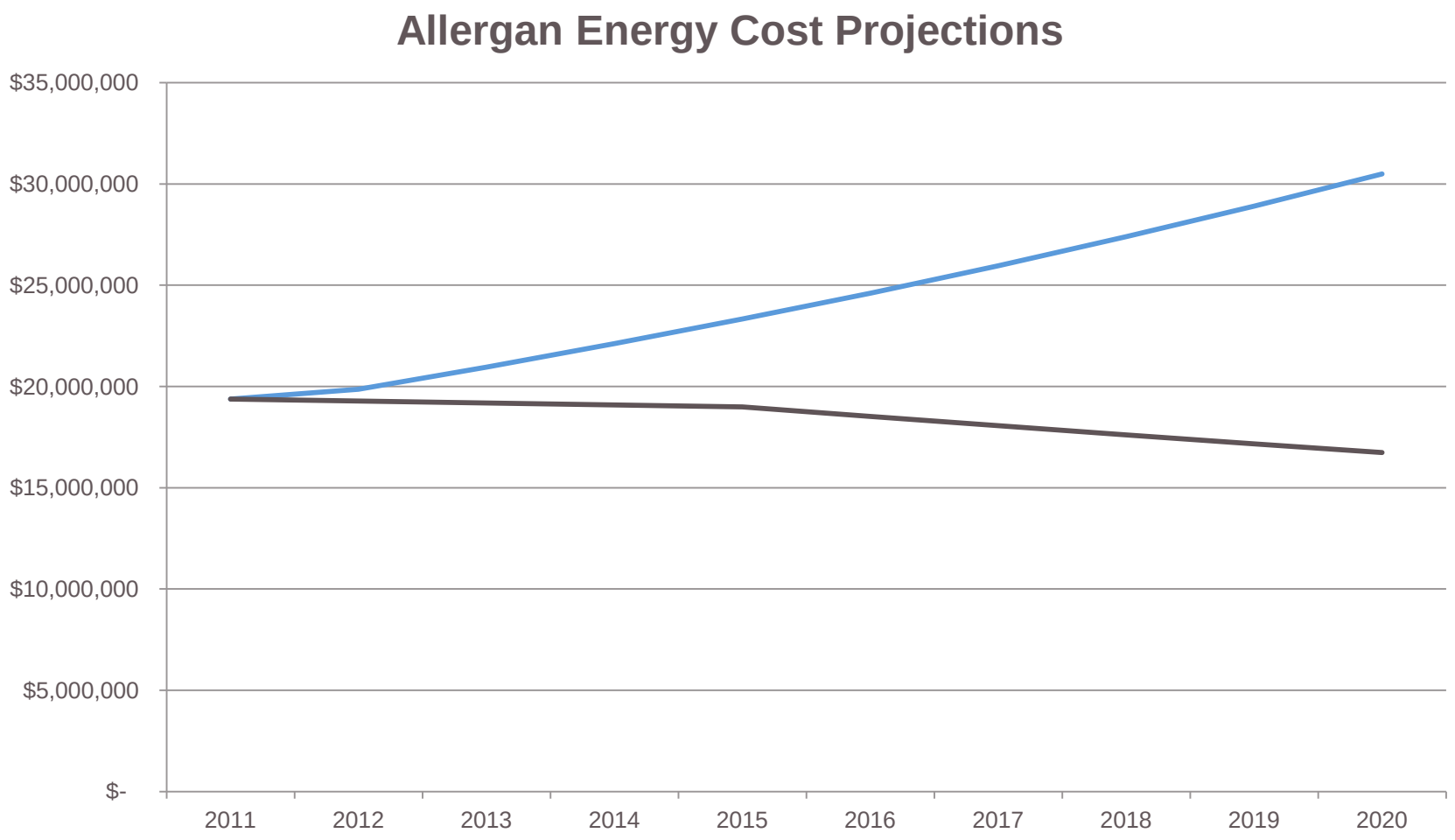
Energy Cost Projections



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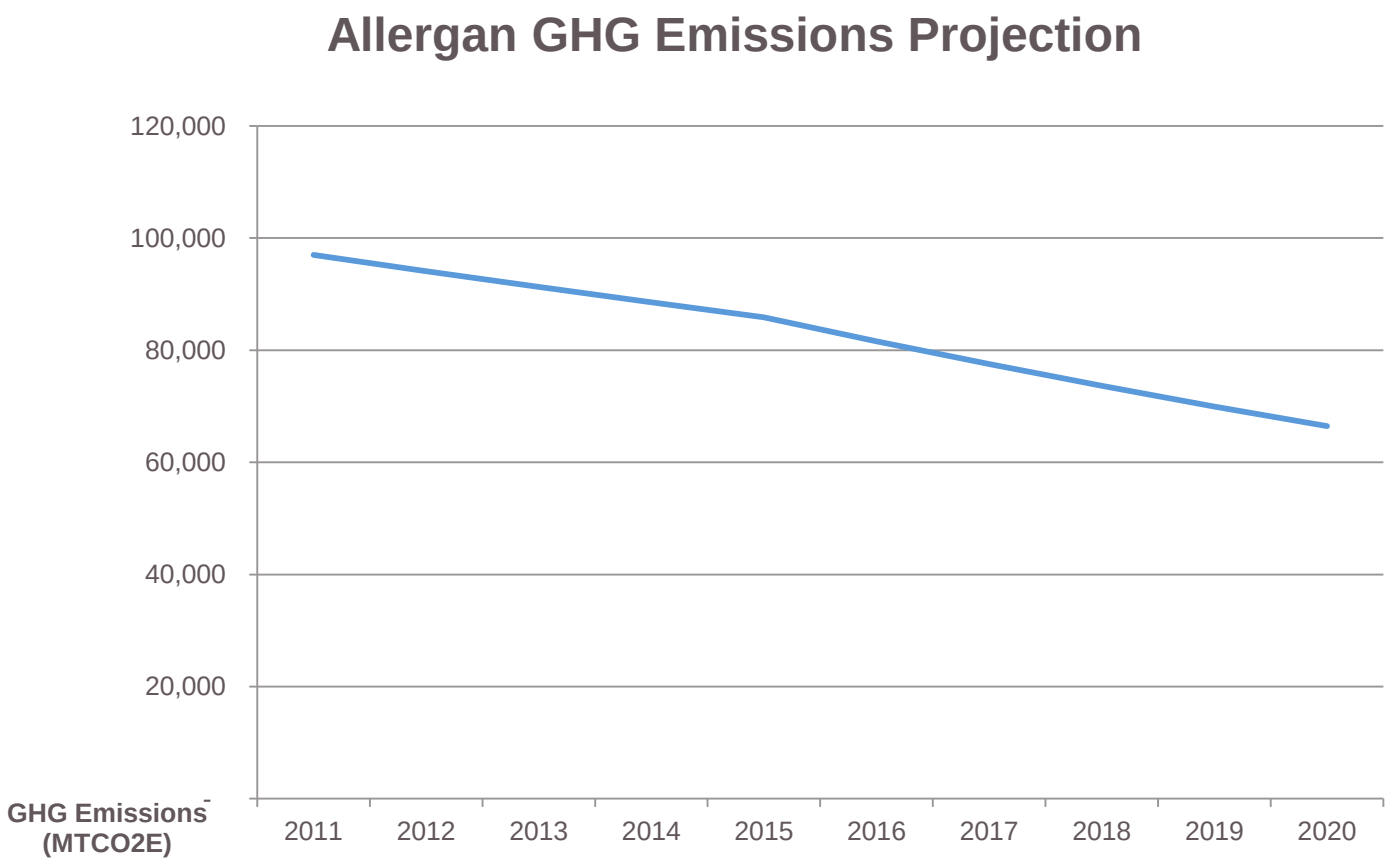
GHG Emissions Projections



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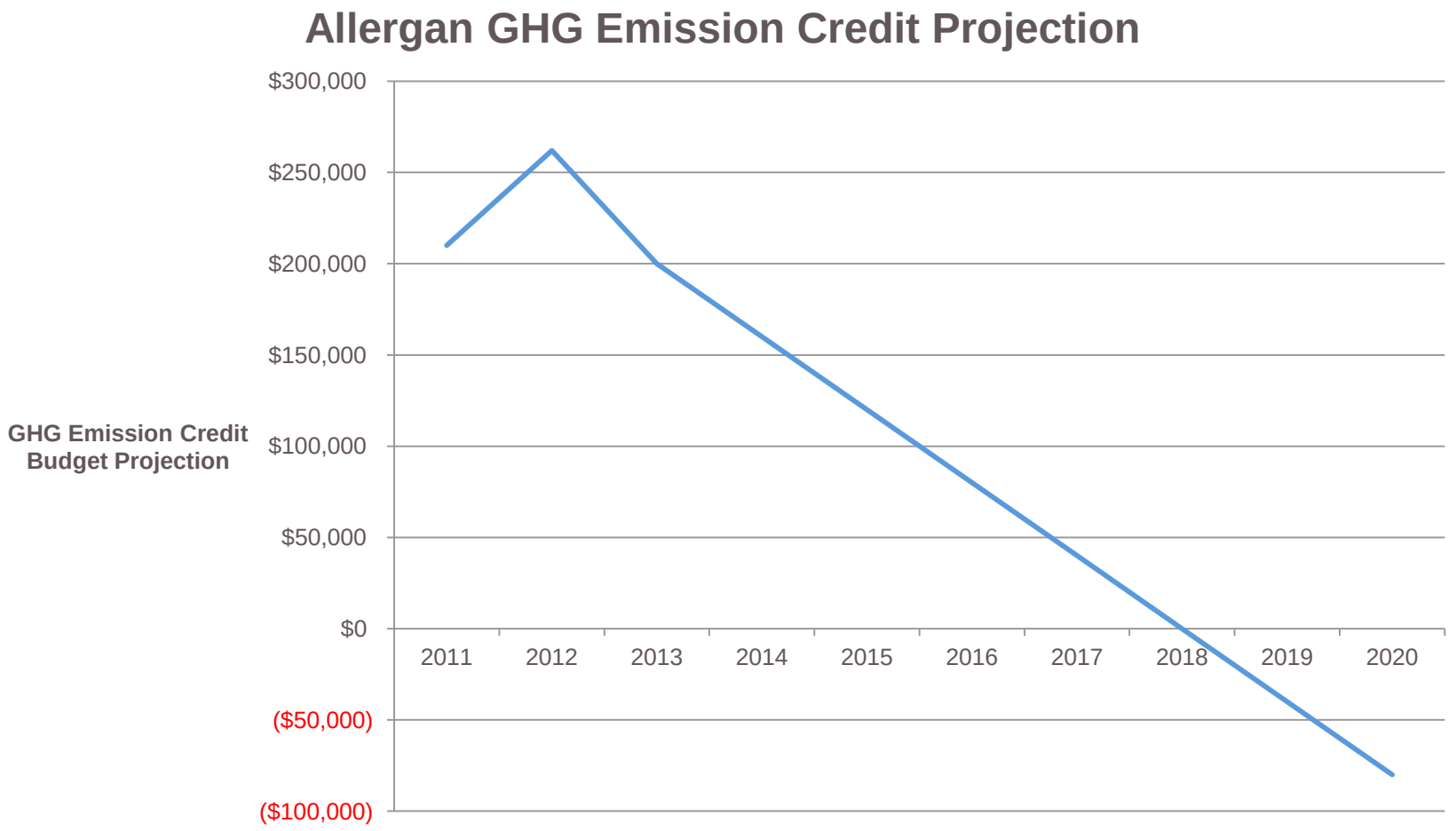
GHG Cost Projections



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Technology Shifts

- Product
  - Targeted disease and organ focus
  - Sustained release implants
  - Genetic, recombinant and antibody focus
  - More potent compounds
  - Smaller dosages
  - Manufacturing more highly contained and connected
- Energy and GHG Impact
  - Manufacturing area size reduction
  - Potential reduced air flow requirements
  - Potential reduced packaging and related systems
  - Potential for reduced transportation energy

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Supply Chain Impact and Management

- Carbon footprint label – possible but difficult to do and have meaning
- Life cycle impact assessments for products – product energy profiles
- Ingredient and packaging evaluation and choices
- Product transportation evaluation – energy, GHG
- Reporting
  - NGOs – CDP, GRI, Media, Customers
  - Investors – Stock Exchanges, SEC, DJSI, FTSE4Good, Maplecroft, > 100 systems asking for data
  - Governments – National and local legislation and regulation

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Supply Chain Activities

- Trucost evaluated Allergan's top 192 suppliers by 2011 spend
- Top ten suppliers identified – intend to work with each to determine reduction potential
- Ecodesk third-party database collecting energy and carbon data from 192 supply chain partners to build a supply chain footprint for Allergan
- PSCI third party supply chain audit consortium auditing all sustainability criteria for the group – 17 pharmaceutical companies

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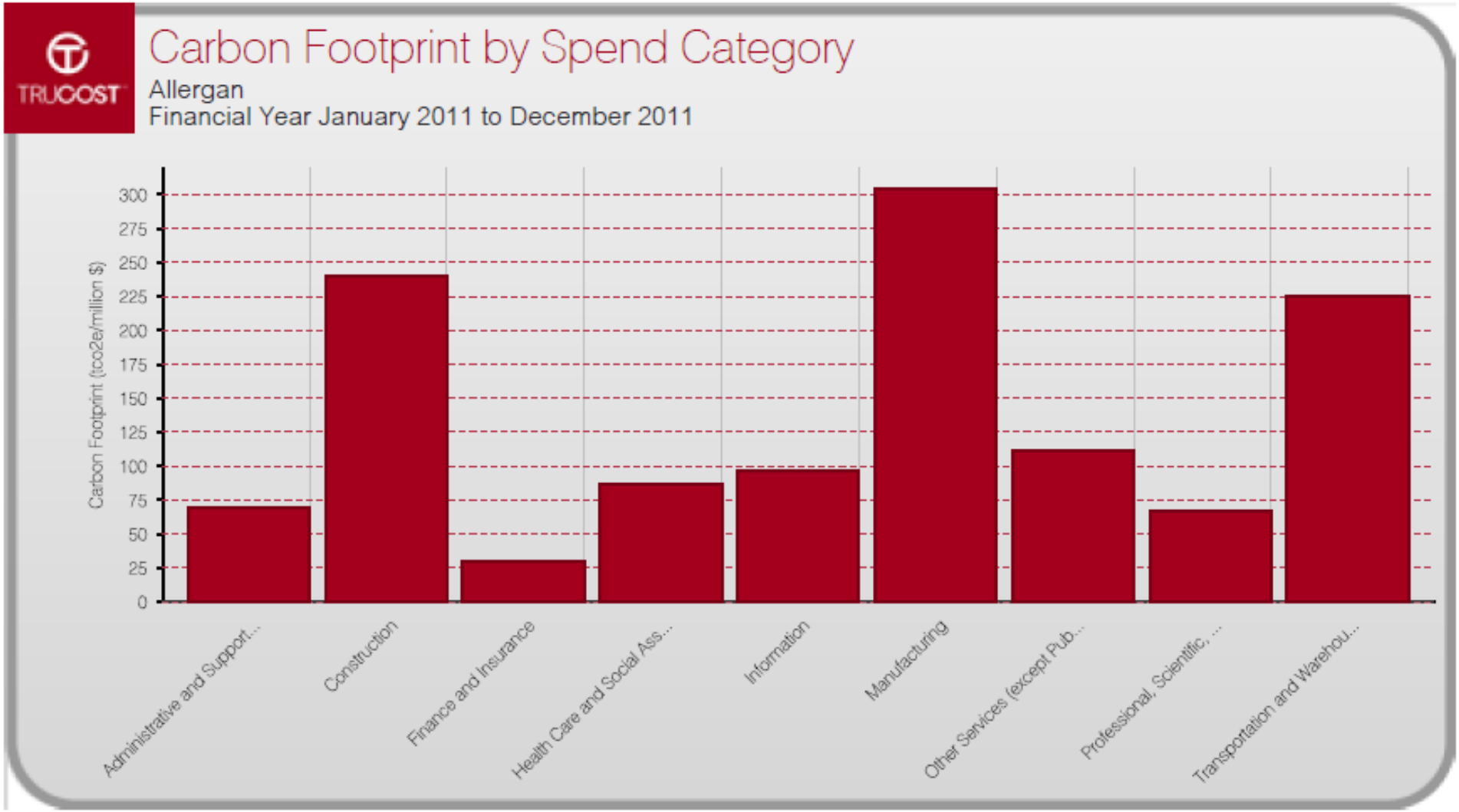
Trucost



Ecodesk

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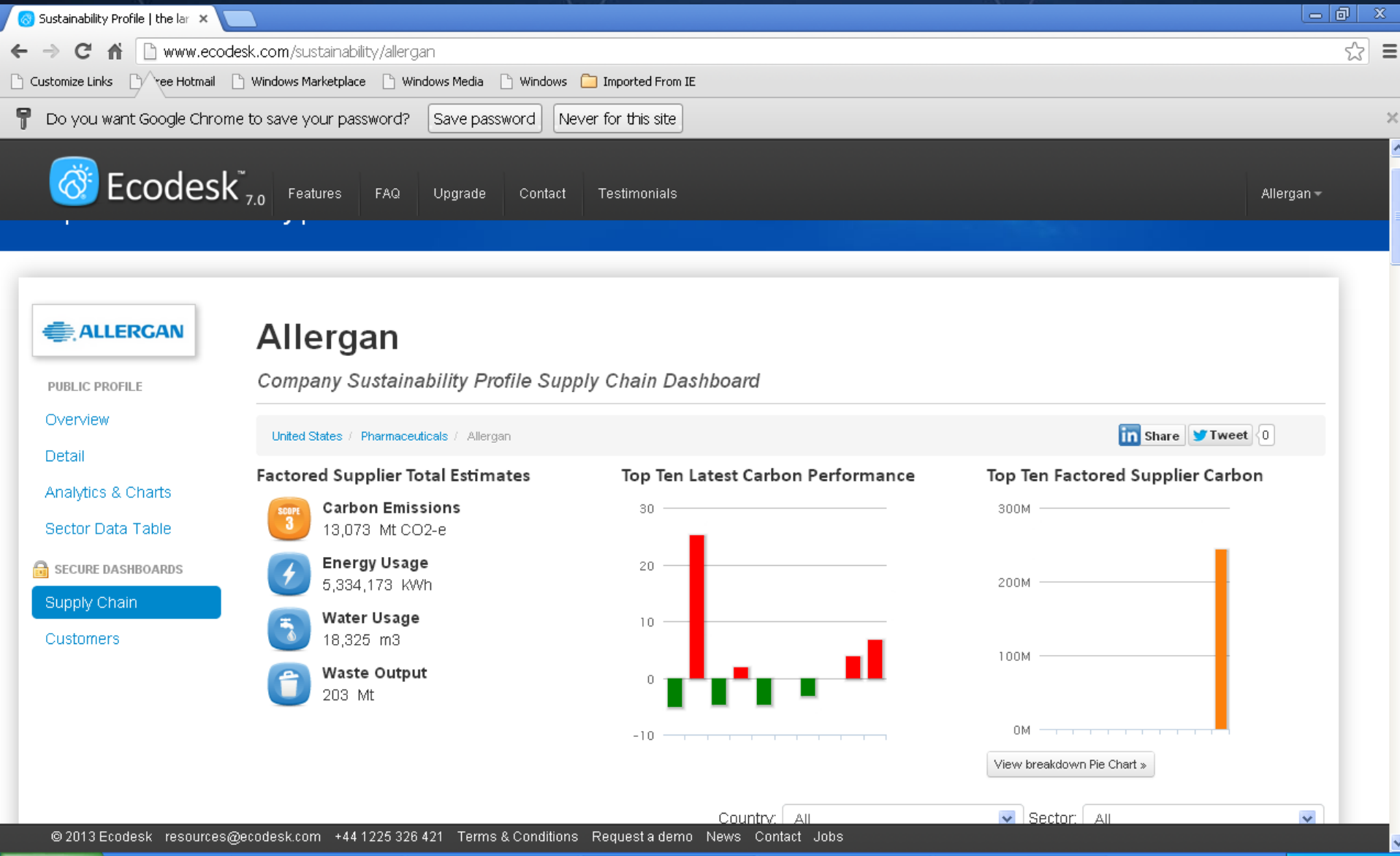

PSCI Members

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Covidien
Eli Lilly
GSK
Johnson & Johnson
Merck
Novartis
Novo Nordisk
Pfizer
Roche
Sanofi

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Supply Chain Actions Summary

- Supply chain interaction beginning
- Supplier audits are becoming more robust and comprehensive
- Supply chain footprint becoming better understood
- Can we influence suppliers?

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Customer Expectations

- Starting to want to know:
  - Do you have a sustainability program?
  - Is it third-party verified?
  - How much energy consumed in final product?
  - What are the GHG emissions associated with each product unit?
  - What are you doing to reduce these impacts?
- Purpose:
  - Meet internal goals
  - Improve reputation
  - Satisfy stakeholders and other interested parties
  - Use to manage suppler selection
  - Various leverages with the supply chain

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Allergan Going Green For a Sustainable Future

- Allergan ranked #25 by Newsweek Green Rankings for 2012, #2 in Healthcare Sector
- Allergan has saved approximately $15M from 2005 to 2012 by increasing recycling efforts and reducing electricity consumption and Green House Gases
- By the end of 2015 we expect to decrease our Energy Consumption and Green House Gas emissions by more than 15%

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Conclusion

- Reductions in energy consumption and carbon emissions have reached ~ 25% based on 2015 projections to a baseline on 2005
- Supply chain footprint has identified 10 partners that account for more than 50% of the energy consumption and carbon emissions
- Suppliers appear eager to work with Allergan to reduce the footprints
- Customers are interested in Allergan's approach and outcomes

Q&A

Contact Us

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For more information, visit www.epa.gov/climateleadership

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