

*Building an excellent EH&S culture.*



# Ruby: the First Carbon Neutral Pipeline

Naomi Cortez  
El Paso Western Pipelines

EPA Natural Gas STAR Annual  
Implementation Workshop  
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# Agenda

- Introduction
- Ruby Overview & Milestones
- Roadmap to “Compliance”



# Cautionary Language Regarding Forward-Looking Statements

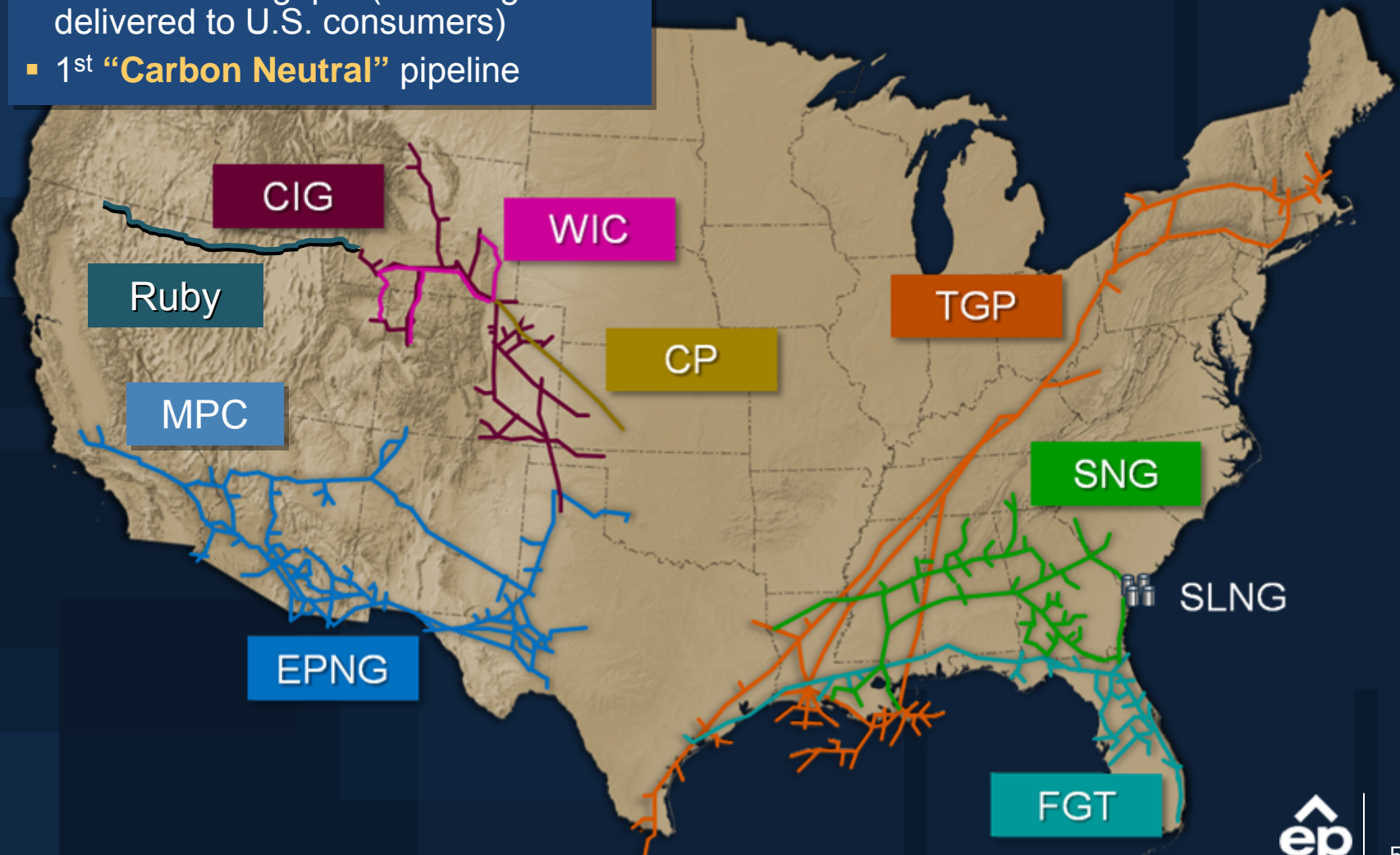
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# Defining Our Purpose

El Paso Corporation provides natural gas and related energy products in a safe, efficient, and dependable manner

- 19% of total U.S. interstate pipeline mileage
- 26 Bcf/d capacity (15% of total U.S.)
- 19 Bcf/d throughput (30% of gas delivered to U.S. consumers)
- 1st **“Carbon Neutral”** pipeline

# Our Pipelines



# El Paso Exploration & Production Asset Overview & Core Programs



# Vision and Values

the **place** to work  
the **neighbor** to have  
the **company** to own



# El Paso's GHG Leadership Credentials

GHG Team Established with Oversight by Board and Executive Committee (2005)



EPA Natural Gas Star Award recipient (2005-fourth consecutive year)



Corporate GHG Inventory Goals (2006)



"Pre-certified" 2005 GHG Inventory—1605(b) Standards (2006)



"Assess, engage and act" commitment statement: <http://elpaso.com/profile/mainneighbor.shtm> (2007, rev 2009)



"Verified" 2006 GHG Inventory—CCAR Standards (2007)



**Climate Action Leader™ (2007 - 2009)**



Carbon Disclosure Project (CDP): <http://www.elpaso.com/profile/ehs.shtm> (2008)



Southern Gas Association (SGA) Environmental Excellence Award for GHG Leadership (2008)



**Committed to developing the \$3 billion proposed Ruby Pipeline as a carbon-neutral project (2008)**

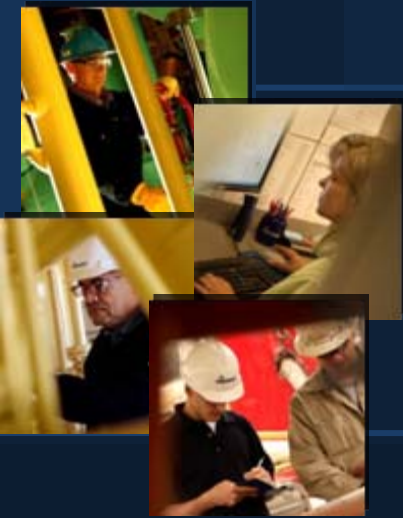


Corporate Sustainability Report (CSR): <http://www.elpaso.com/CSR/index.html> (2010)



# Ruby Pipeline Project

<http://www.rubypipeline.com/>



# Overview of Ruby Pipeline Project



# Ruby Project Milestones



# Ruby's Carbon Strategy

## Carbon Impact Assessment

- Assess HP requirements based on pipe without internal coating
- Evaluate gas vs. electric compression
  - Reliability = key issue
- Estimate Scope 1, 2, and 3 GHG emissions

## GHG Mitigation Review

- Assess other measures to minimize emissions
- Assess offset/allowance options
- Complete cost benefit analysis
- Assess recovery of GHG mitigation costs as capital/operating and fuel costs

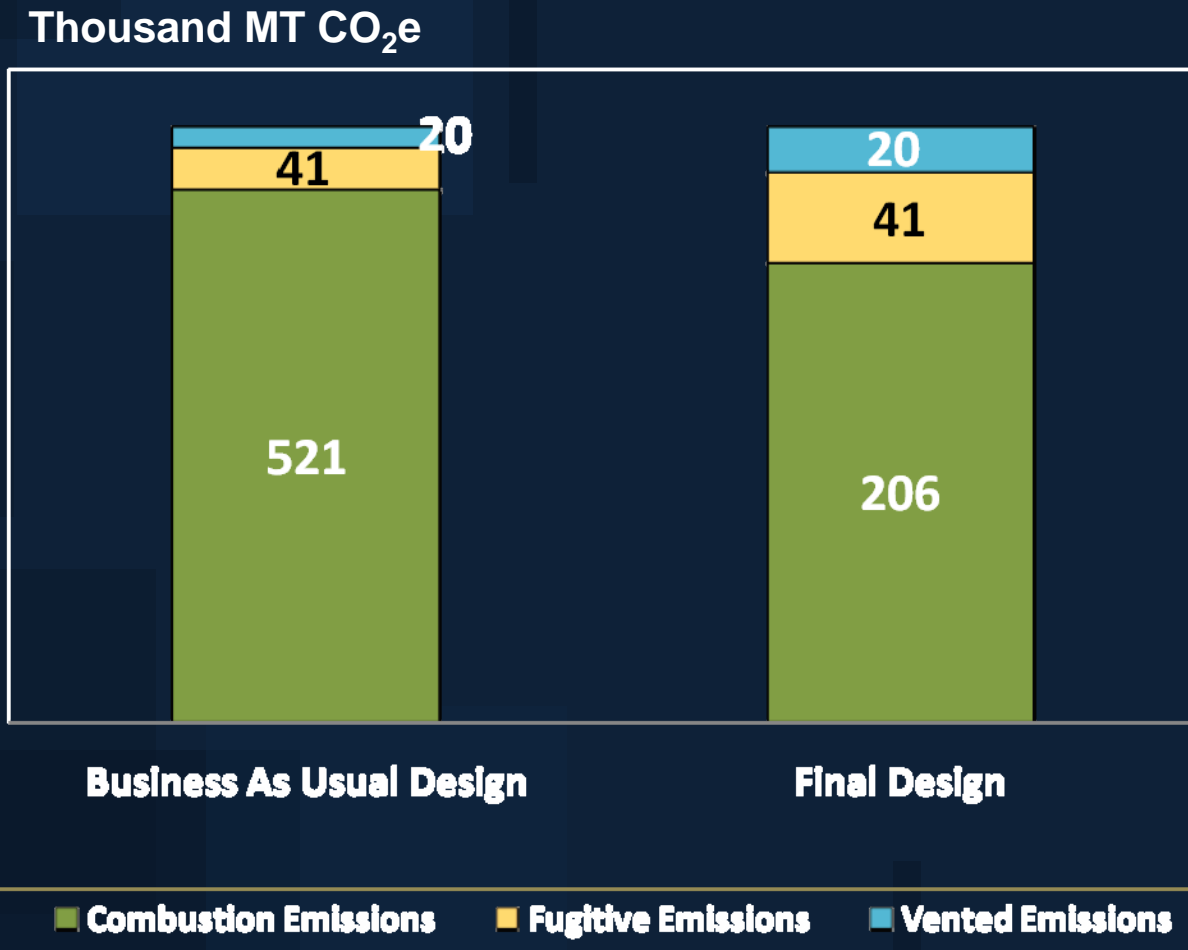
## Finalize Carbon Strategy

- Communicate project costs and benefits to Upper Mgmt
  - Demonstrate environmental stewardship
  - Minimize potential impacts of future GHG regulation
  - Align interests of Ruby Shippers by optimizing capital costs in an evolving regulatory environment

## Execute

- Carbon neutral products sourced to mitigate construction emissions
- Track and purchase available products for complete neutralization of emissions
- Develop compliance tools

# Ruby Scope 1 GHG Emissions

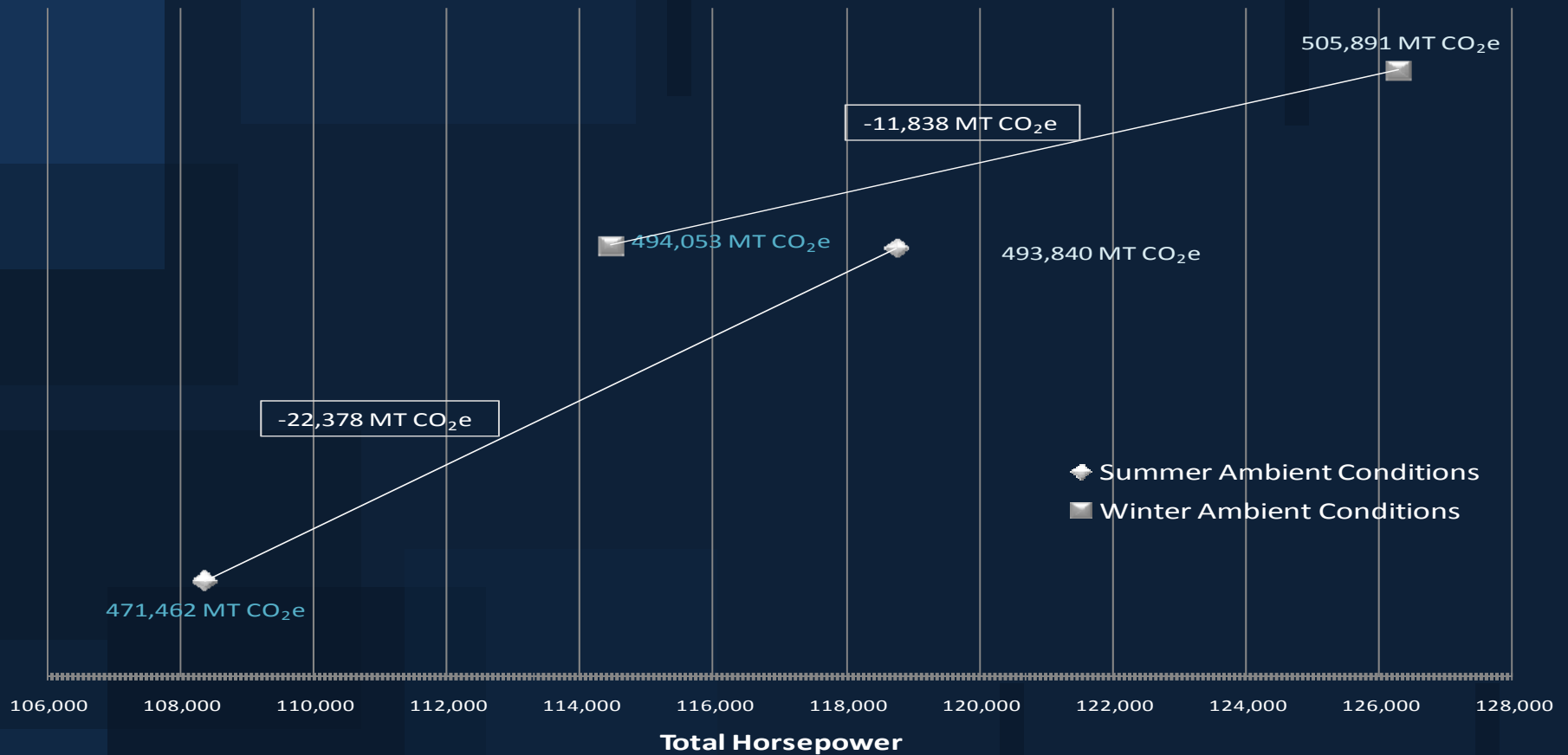


Emissions based on 1.4 Bcf design @ annual avg ambient conditions  
BAU design assumes all gas compression, no internal pipe coating  
Final design assumes gas & electric compression, internal pipe coating

# Benefits of Internal Pipe Coating

1.4 Bcf Final Design

## HP Requirements & GHG Emissions for Coated vs. Non-Coated Pipe

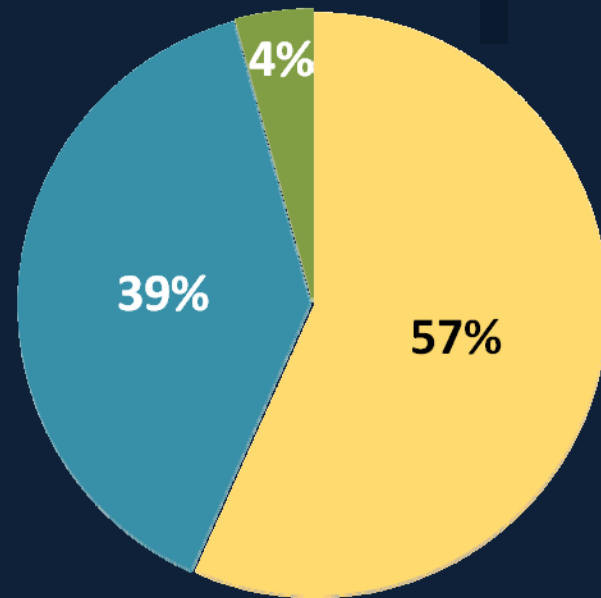


Reduced HP → Reduced Fuel → Reduced Emissions → Internal Corrosion Mitigation

# Achieving Carbon Neutrality

- Basis of emission estimates
  - EPA MRR combustion factors & estimated fuel use
  - Vented and fugitive factors from INGAA GHG guidelines
  - E-GRID factors for indirects
- Mitigation w/in 1 yr of verification
- Design mitigation measures
  - Leadership in Energy and Environmental Design (LEEDs)
  - Reduced valves/flanges
  - Turbines equipped w/dry gas seals & electric starting system
- Offset /Allowances “Portfolio” Approach

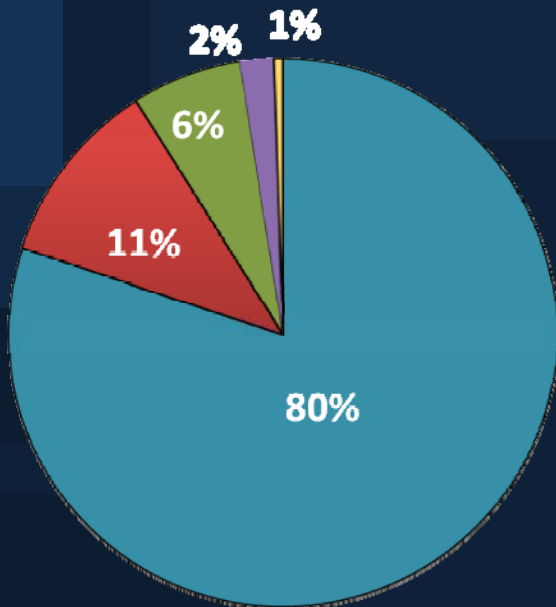
**Scope 1 and 2 Emissions—Annual Operation**



■ Direct Emissions  
■ Indirects - Electric Compression  
■ Indirects - Electric Usage @ Facilities

# Achieving Carbon Neutrality

## Scope 3 Emissions—Project Construction



- Pipeline Construction
- Compressor Station(s) Construction
- Lodging Camp Operation
- Commuting Vehicles
- Lodging Camp(s) Construction

- Mobile emissions
  - Construction equipment based on EPA non-road factors
  - Gasoline fueled vehicles based on EPA factors
  - Diesel fueled vehicles based on WRI's GHG Protocol/Mobile Guide
- Combustion emissions based on EPA MRR factors
- Mitigation w/in 1 yr of verification
- Offset/Allowances “Portfolio” Approach
  - 175K MT CO<sub>2</sub>e purchased to date
    - Reforestation
    - The Climate Action Reserve
    - Regional Greenhouse Gas Initiative



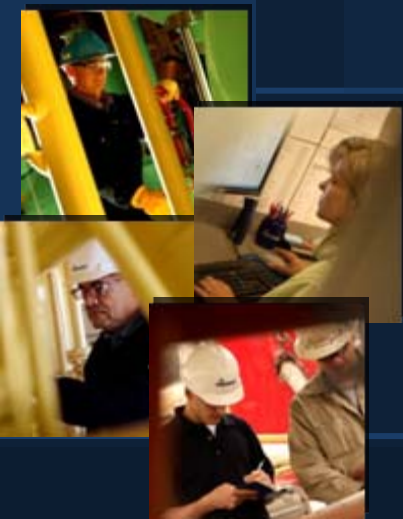
# GHG Cost Recovery

## FERC Gas Tariff

- Shipper will pay for voluntary GHG costs
  - Recovery through electric power cost (EPC) surcharge, annual limit applies
    - Costs from RECs, GHG offsets or allowances
    - Includes cost to offset all annual GHG emissions
  - Quarterly adjustment filings will be made
- Future mandatory costs resulting from climate change policy are subject to tariff revision and approval

# Roadmap to "Compliance"

Ruby → Carbon Neutral



# Achieving Carbon Neutrality



# Ruby's Roadmap to Compliance

## Step 1 – Data Management

### Scope 3 emissions

- ✓ Evaluate existing data management
- Implement process to track missing activity data
- Identify verification requirements – activity data, support documentation, site visits

### Scope 1 and 2 emissions

- ✓ Determine if current processes are sufficient to track pipeline related activity data
- ✓ Determine if current and/or near-term processes are sufficient to track facility related activity data
- ✓ Identify verification requirements – PL and facility activity data, support documentation, site visits

## Step 2 – Scope 1 Emissions Monitoring

- ✓ Complete cost benefit analysis based on estimated emissions & current \$/CO<sub>2</sub>e tonne

### Develop monitoring plan for project commissioning

- Evaluate PL DOT leak survey requirements & assess if fugitive emissions monitoring of PL components is warranted
- Incorporate Subpart W monitoring methods and define other monitoring methods as needed
- Define procedures for QA/QC, instrument calibrations, measurement methodology, etc.
- Pre-survey of component inventory

Resources, schedule, budget planning

# Ruby's Roadmap to Compliance

## Step 3 – Actual Emission Estimates

### Scope 3 emissions

- Develop monthly reporting platform for actual emissions

### Scope 1 and 2 emissions

- ✓ Evaluate and adapt existing data management and reporting platform for facility activity data and direct emissions per EPA MRR methods
- ✓ Evaluate and adapt existing data management for PL related activity data to complete comprehensive reporting
- Develop reporting platform for PL related activity data to complete comprehensive reporting requirements

### Verification of Scope 1-3 Emissions

- Coordinate kick-off verification meeting

## Step 4 – Purchase Carbon Offsets

### NLT December 2012

- Purchase offsets/allowances as needed based on verified Scope 3 emissions

### NLT December 2013

- Purchase offsets/allowances as needed based on verified Scope 1 and 2 emissions

# Questions?



**Naomi Cortez**  
naomi.cortez@elpaso.com  
(719) 520-4799

Thank you for your time!

