



ELEMENT MARKETS

Baton Rouge ERC Market Overview

May 21, 2015

CONFIDENTIAL AND PROPRIETARY



ELEMENT MARKETS INTRODUCTION

US Emissions House of the Year



Launched in 2005, Element Markets has become the leading marketer of environmental commodities in the U.S.

- Leading marketer of environmental commodities with a focus on Emissions, GHG, and Renewable Energy (Energy and Transportation Credits), and Biomethane
- Over \$1.6 billion in environmental commodities transacted since inception in 2005
- Environmental Asset Management Services for over 8,000 MW of generation
- Customer base of over 700 companies within the environmental markets
- Leading brokerage in the Emissions market for over a decade

Business Units

Renewable Energy Group



Biogas Development



Credit Marketing

Greenhouse Gas (GHG) and Emissions Services



GHG Offset Projects



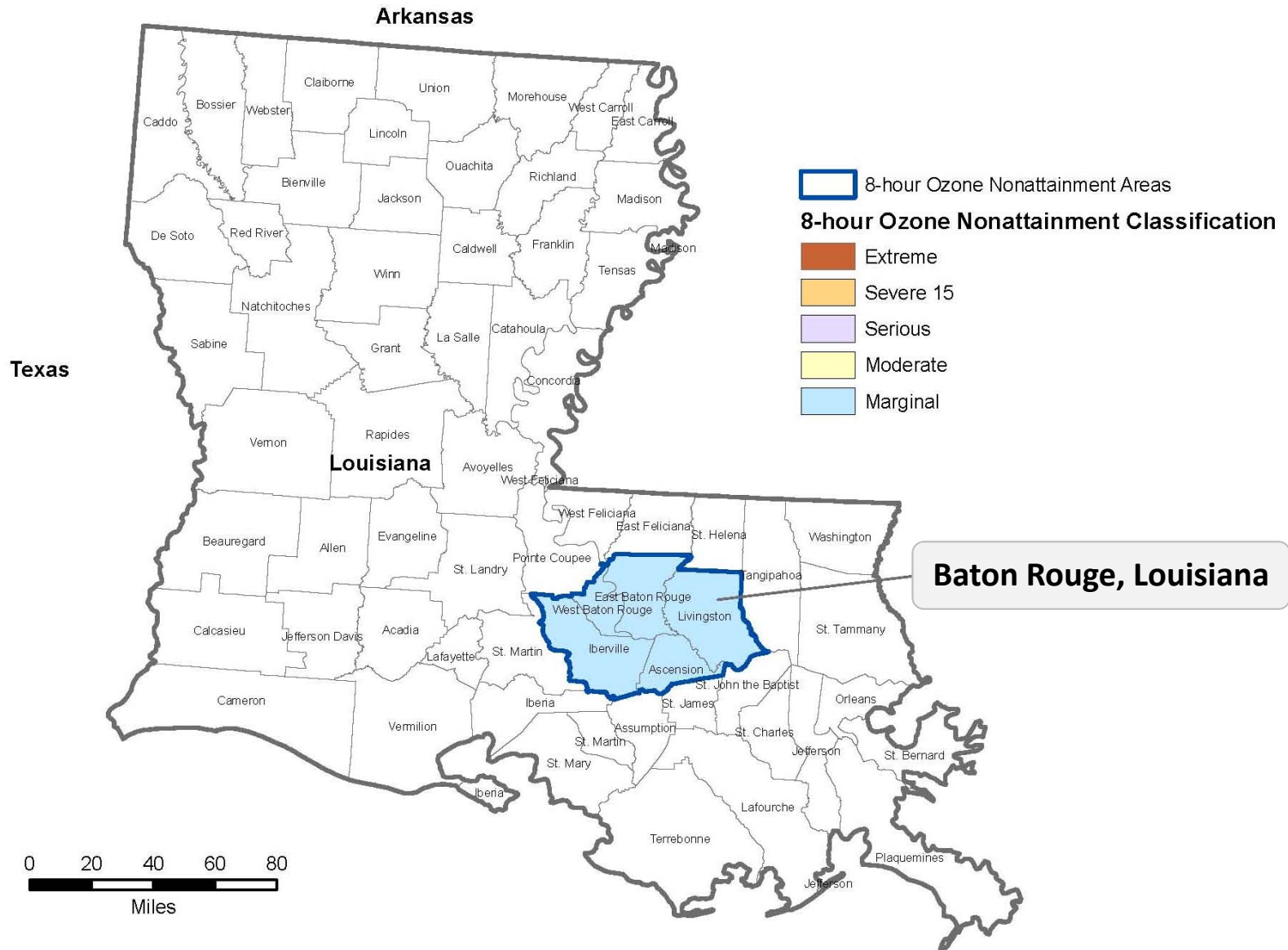
Credit Marketing

EMISSION REDUCTION CREDITS (ERCs)

New Projects or expansions in EPA-classified Nonattainment areas generally require ERCs in order to receive a permit and operate

- An ERC is a **one-time** purchase unless the facility expands operations
- An ERC represents a perpetual authorization to pollute
- ERC can only be created when a facility reduces its emissions permanently
- ERCs expire after 10 years from reduction
- Permit must be issued before expiration date
- Each ERC market has its own regulations, market dynamics, and pricing

BATON ROUGE NONATTAINMENT AREA



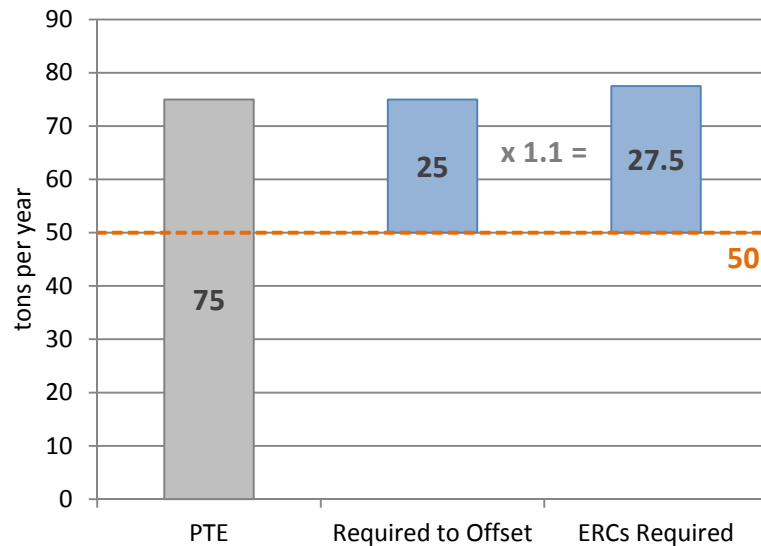
BATON ROUGE REQUIREMENT TO OFFSET



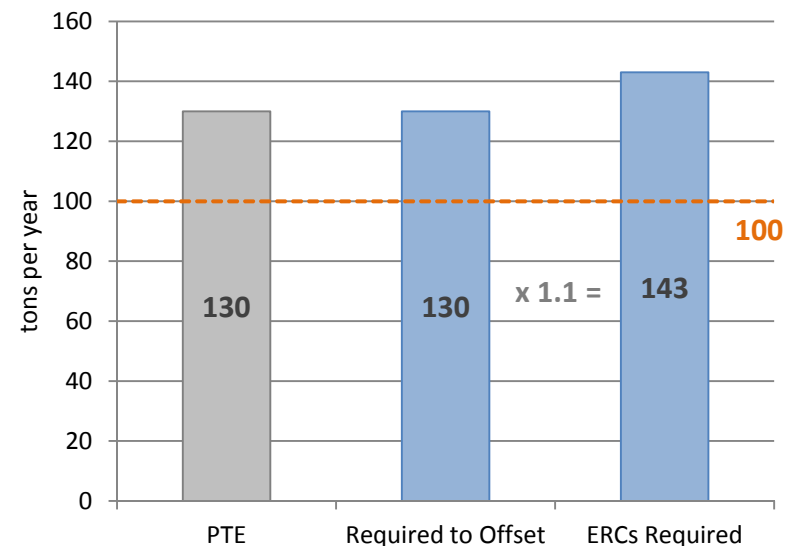
For NOx and VOC emissions in Louisiana:

Facility Type	Potential to Emit (PTE)	Required to Offset
New facility	50 - 100 tons	Emissions above 50 tons
New facility	> 100 tons	All emissions (to zero)
Major modification	> 25 tons	All emissions (to zero)

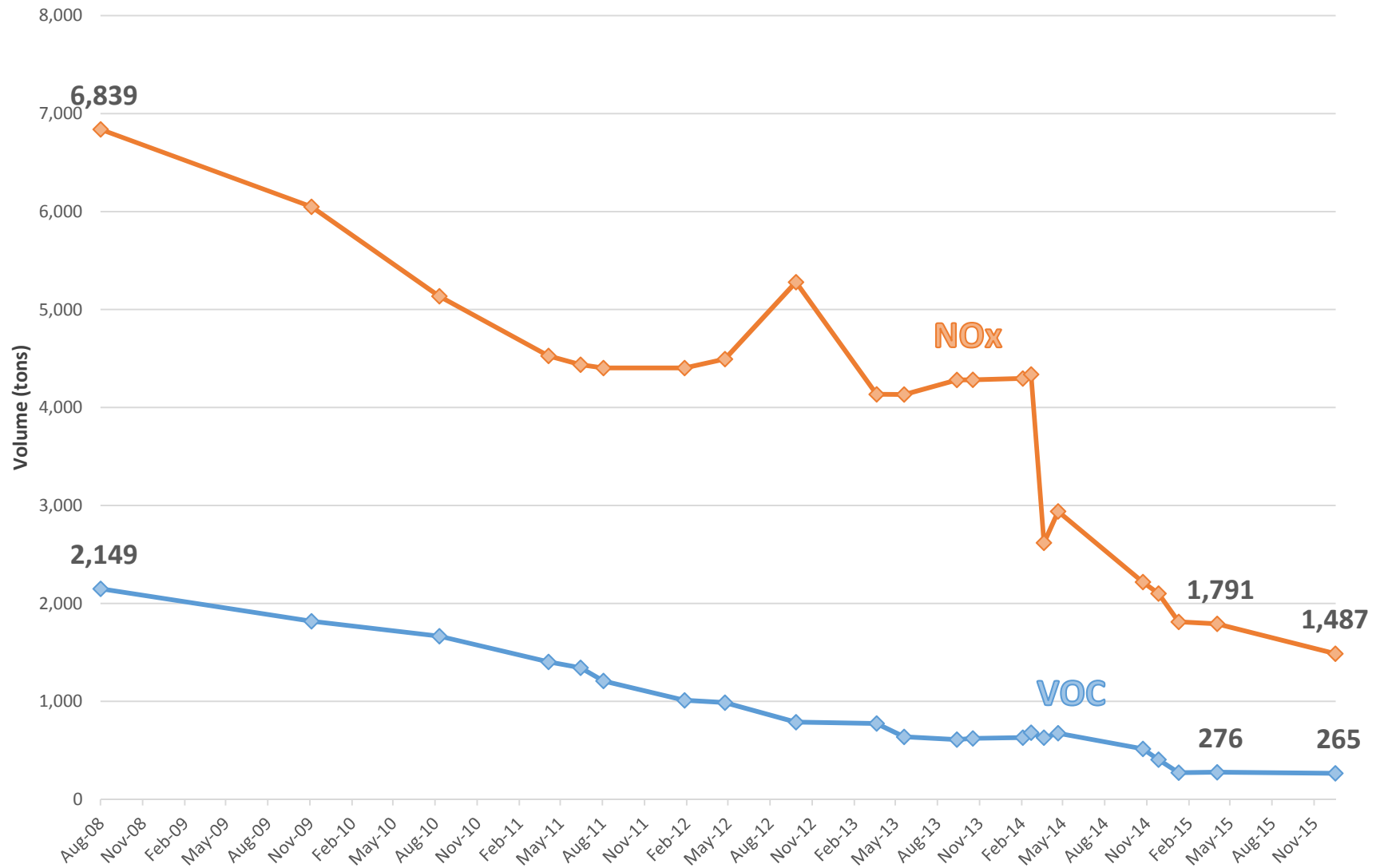
Example 1. New facility with PTE 50 - 100



Example 2. New facility with PTE > 100



LOUISIANA ERC SUPPLY 2008-2015



LOUISIANA ERC SUPPLY 2008-2015



Date	NOx ERC Supply		VOC ERC Supply	
	Listed Volume	Reduction since 2008	Listed Volume	Reduction since 2008
8/15/2008	6,839	0%	2,149	0%
11/18/2009	6,049	12%	1,818	15%
8/24/2010	5,135	25%	1,666	23%
6/28/2011	4,437	35%	1,343	38%
8/17/2011	4,403	36%	1,208	44%
2/10/2012	4,403	36%	1,011	53%
10/10/2012	5,279	23%	788	63%
4/4/2013	4,134	40%	774	64%
9/26/2013	4,281	37%	610	72%
2/17/2014	4,296	37%	630	71%
5/5/2014	2,939	57%	675	69%
11/6/2014	2,218	68%	515	76%
12/10/2014	2,101	69%	406	81%
1/23/2015	1,811	74%	272	86%
4/17/2015	1,791	74%	276	87%
12/31/2015	1,487	78%	265	88%

CURRENT LOUISIANA NO_x ERC REGISTRY



Ozone NO _x	Non-Ozone NO _x	Total NO _x
643 tons	1149 tons	1791 tons

Factoring in ozone season as a limiting factor:

Total Usable NO _x
1543 tons

- Louisiana Department of Environmental Quality is reviewing air modeling that would allow NO_x ERCs to be used for VOC at a 1:1 ratio

PRICING

-
- Pricing is not reported to LDEQ. Negotiated between buyer and seller.
 - Each ERC has own unique expiration dates and prices can vary significantly
 - For example, a 2015 expiration date should be less expensive than a 2023 expiration date ERC

2015 OZONE NAAQS

- On December 17, 2014, EPA proposed to revise the primary and secondary national ambient air quality standards (NAAQS) for ozone to a level within the range of **0.065 to 0.070 ppm**
- EPA is required by a federal court order to finalize its proposal no later than **October 1, 2015**
- LDEQ submitted comments on March 17, 2015, advocating that the NAAQS remain at 0.075 ppm

2015 OZONE NAAQS

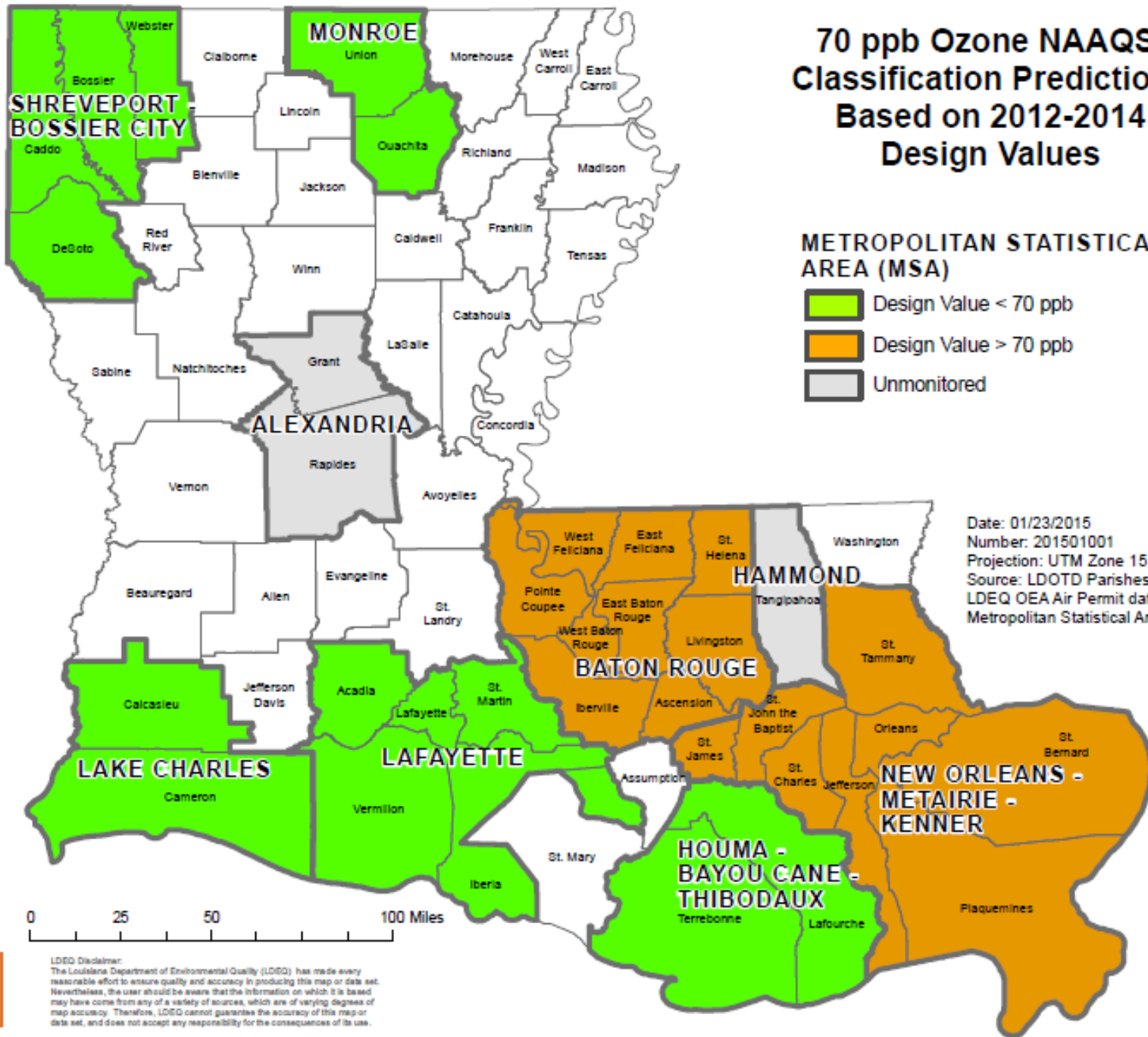
- Based on current (i.e. 2012 – 2014) design values, LDEQ anticipates that up to 17 parishes would be designated as ozone nonattainment areas should the standard be set at 0.070 ppm.
 - Baton Rouge
 - New Orleans - Metairie - Kenner

70 ppb Ozone NAAQS Classification Predictions Based on 2012-2014 Design Values

METROPOLITAN STATISTICAL AREA (MSA)

- Design Value < 70 ppb
- Design Value > 70 ppb
- Unmonitored

Date: 01/23/2015
 Number: 201501001
 Projection: UTM Zone 15, NAD 83
 Source: LDOTD Parishes; 2009
 LDEQ OEA Air Permit data; 2013 EPA
 Metropolitan Statistical Areas (MSA)



0 25 50 100 Miles



LDEQ Disclaimer:
 The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of map accuracy. Therefore, LDEQ cannot guarantee the accuracy of this map or data set, and does not accept any responsibility for the consequences of its use.

2015 OZONE NAAQS

- If the final standard is less than 0.070 ppm, as many as 13 additional parishes could receive a nonattainment designation
 - Shreveport
 - Lake Charles
 - Lafayette
 - Houma - Bayou Cane - Thibodaux

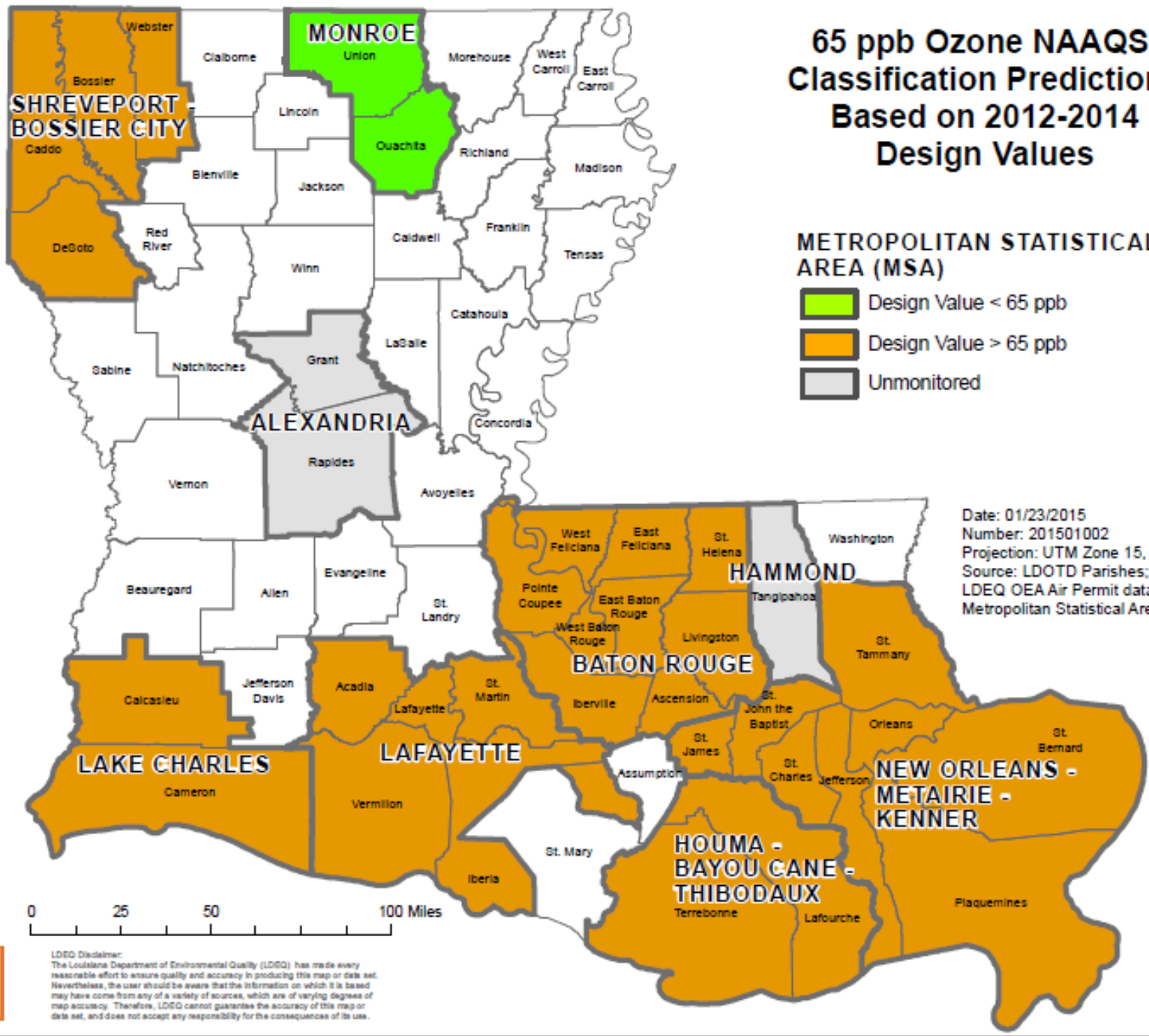
- Alexandria (which currently does not have an ozone monitor) and Monroe may be the only metropolitan attainment areas

65 ppb Ozone NAAQS Classification Predictions Based on 2012-2014 Design Values

METROPOLITAN STATISTICAL AREA (MSA)

- Design Value < 65 ppb
- Design Value > 65 ppb
- Unmonitored

Date: 01/23/2015
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 Projection: UTM Zone 15, NAD 83
 Source: LDOTD Parishes; 2009
 LDEQ OEA Air Permit data; 2013 EPA
 Metropolitan Statistical Areas (MSA)



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NO_x ERCs TO OFFSET VOC EMISSIONS



LDEQ is planning to release a proposed rule allowing NO_x ERCs to offset VOC emissions with air modeling



■ Tentative rule timeline:

- **July 1:** Expected proposal to register
 - **August:** Mandatory public hearing
 - **September:** Proposal to legislative oversight committee (*assuming very few or no negative public comments*)
 - **October:** Expected final rule
-
- This will allow the use of NO_x for VOC based on air modeling
 - 1:1 is assumed to be the standard rate, but there are scenarios in which a NO_x ERC could be worth less than a VOC ERC

NONATTAINMENT AREA BANKING



LDEQ is working on proposal to allow facilities in new nonattainment areas to start banking once EPA finalizes its proposal (i.e. December 2015/January 2016 for New Orleans area)

- Appears to follow the same timeframe as the Interpollutant Offsetting proposal discussed on the previous slide
- Facilities in new nonattainment areas would not be required to offset emissions until LDEQ adopts the new NAAQS standards
- Estimates Element Markets have heard are **~1.5 - 2.5 years after EPA finalizes before LDEQ adopts**

POTENTIAL ALTERNATIVE ERC SOURCES

- The Baton Rouge Clean Air Coalition, an industry group, is **working to create alternative sources to generate NOx and VOC ERCs**
- Targeting mobile source reductions:
 - Phase I: marine vessels in ports, school buses (diesel retrofits or LNG), garbage truck fleets (diesel retrofits or LNG), etc.
 - Phase II could include smaller engines, including tractors, forklifts, etc.
- **LDEQ is aiming for proposed rule by end of 2015**; EM thinks it may slip into 2016
 - No tentative timeframe for Phase II
- EPA has not commented and some are concerned that they may object to the plan

REASONS TO SELECT ELEMENT MARKETS



- **Most Transactions:** Element Markets has done the majority of transactions in Baton Rouge area over the 2008-2015 period
- **Very Diverse Client Base:** Element Markets has transacted across multiple sectors
- **Full Service:** Element Markets is a full-service marketing and brokerage firm with the following dedicated capabilities: Brokerage, Settlements, Contract Admin, Accounting, Regulatory Analysis, and Fundamental Analysis
- **Well-Rounded Team Members:** Staff is made up of team members who worked in industry, and brings industry viewpoint to the table versus just a broker
- **Strategy Development for Procuring ERCs:** Sit down with client to develop a strategy to ensure they meet permit requirement and timeframe at least cost

THANK YOU



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WORLD FINANCE



“US Emissions House of the Year”, 2014 and 2010 by Energy Risk

Energy Risk Environmental Rankings

- #1 U.S. Regional Greenhouse Gas Dealer
- #1 U.S. Voluntary GHG Credit Dealer
- #2 Renewable Energy Credit Dealer
 - #1 NOx & SO₂ Dealer

Environmental Finance Magazine

- Best Trading Company in North American Renewable Energy
- Runner- Up, Best Trading Company of North American GHG Markets (California)
 - Best Trading NOx & SO₂ Company Emission Credits