

# Update on HRVOC, NO<sub>x</sub>, and VOC ERCs and Allowances in Houston- Galveston-Brazoria



**AIR & WASTE MANAGEMENT**  
A S S O C I A T I O N  
**GULF COAST CHAPTER**

November 19<sup>th</sup>, 2019

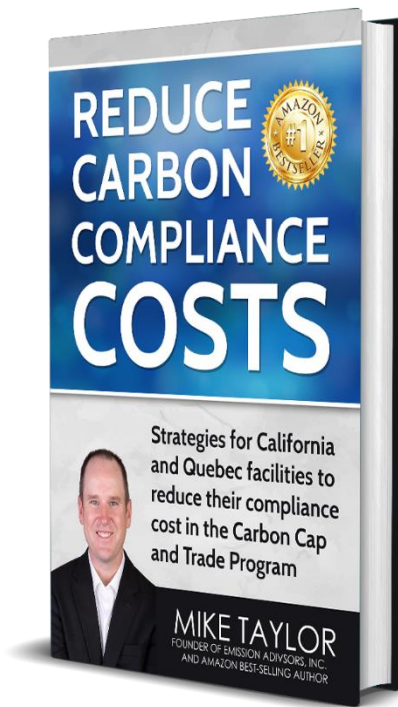
EMISSIONADVISORS

Mike Taylor

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# Mike Taylor Bio



- *Founder and President of Emission Advisors, Inc.*
- *Eighteen years of experience in environmental trading, brokerage and consulting in emission reduction credit programs*
- *Transacted over a billion dollars of environmental credits*
- *Previously Emissions Trader with Louis Dreyfus Energy Services*
- *Managed Compliance for NRG's 20,000 MW Power Fleet*
- *Board Member of Gulf Coast Chapter of the Air & Waste Management Association and Environmental Market Associations*
- *Amazon Best Selling Author with the book "Reduce Carbon Compliance Costs: Strategies for California and Quebec facilities"*
- *Graduated Summa Cum Laude with Degree in Finance from LSU*

## EMISSIONADVISORS

**EnergyRisk**  
**Awards**  
2019

## –US Emissions House of the Year

- Brokerage and Consulting Firm Specializing in Emission Reduction Credits, MECT NOx and HRVOC Allowances, Carbon Trading, Low Carbon Fuel Standard, CSAPR NOx and SO2
- Market Overviews, Legislative Updates, Regulatory Updates, Analysis, Strategy Development, and Brokerage/Strategy Execution All Under One Roof

# HGB REQUIREMENT TO OFFSET

*For NOx and VOC Emission Reduction Credits in Houston-Galveston-Brazoria (HGB):*

Facility Type	Potential to Emit (PTE)	Offset Ratio	Status
New facility	≥ 25 tons	1.3 to 1	Previous – 1997-2016 Severe
Major modification	≥ 25 tons	1.3 to 1	Previous – 1997-2016 Severe
New facility	≥ 100 tons	1.15 to 1	2017- Sept 22 <sup>nd</sup> , 2019 Moderate
Major modification	≥ 40 tons	1.15 to 1	2017- Sept 22 <sup>nd</sup> , 2019 Moderate
New facility	≥ 50 tons	1.2 to 1	Sept 23 <sup>rd</sup> , 2019 – Current Serious
Major modification	≥ 25 tons	1.2 to 1	Sept 23 <sup>rd</sup> , 2019 – Current Serious

HGB and DFW has until July 20<sup>th</sup>, 2021 to comply with Serious

# Estimated Design Value for Texas

Area	2017 Design Value	2018 Design Value	2019 Design Value (YTD)
Houston-Galveston-Brazoria	81	78	81
Dallas-Fort Worth	79	76	77
San Antonio*	74	72	73
El Paso-Juarez**	72	73	75
Waco	69	68	69
Austin	69	68	68
Beaumont-Port Arthur	68	68	70
Corpus Christi-Victoria	66	64	63
Tyler-Longview-Marshall	65	65	66
Lower Rio Grande Valley	57	57	59
Laredo	53	53	59

\* Deemed nonattainment Sept 24<sup>th</sup>, 2018

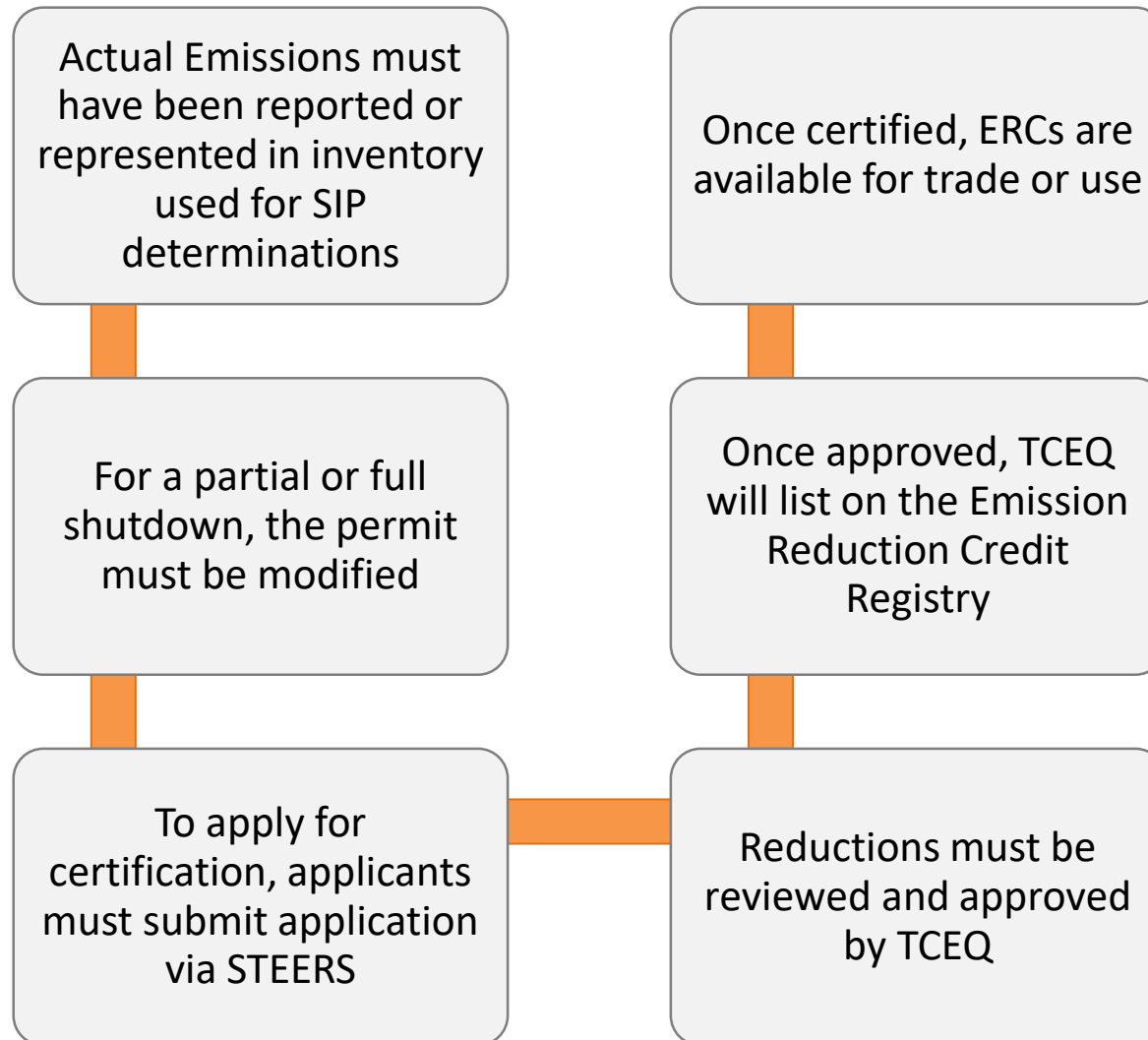
\*\* Exception Event approved by EPA and TCEQ – deemed attainment April 30<sup>th</sup>, 2018 <sup>5</sup>

# EMISSION REDUCTION CREDITS (ERCs)

- **ERCs**


- ERCs are created upon shutdown, process change, or installed control technology
- Entities have 2 years from reduction date to apply for ERCs
- One-time purchase/offset potential to emit
- Perpetual right to operate under air permit
- Expires after 5 years of reduction date if not applied to permit


# ERC GENERATION - PERMANENT REDUCTION IN VOC OR NO<sub>x</sub> EMISSIONS



# Process to Sell ERCs

- 
- Submit Banking Application via STEERS
  - Hire Emission Advisors to market the ERCs

- 
- Verbally agree to a deal with Buyer. Emission Advisors sends out deal confirmation.
  - Buyer and Seller execute a mutually agreeable contract. Emission Advisors provides template.

- 
- Submit transfer via STEERS. Must be done after ERCs are issued by TCEQ.
  - Buyer pays Seller within 5 business days of written confirmation of transfer



# SIP CHANGE AFFECT ON HGB ERC PROGRAM – Jan 18<sup>th</sup>, 2019

SIP emissions year for credit generation projects will changed on January 18<sup>th</sup>, 2019:

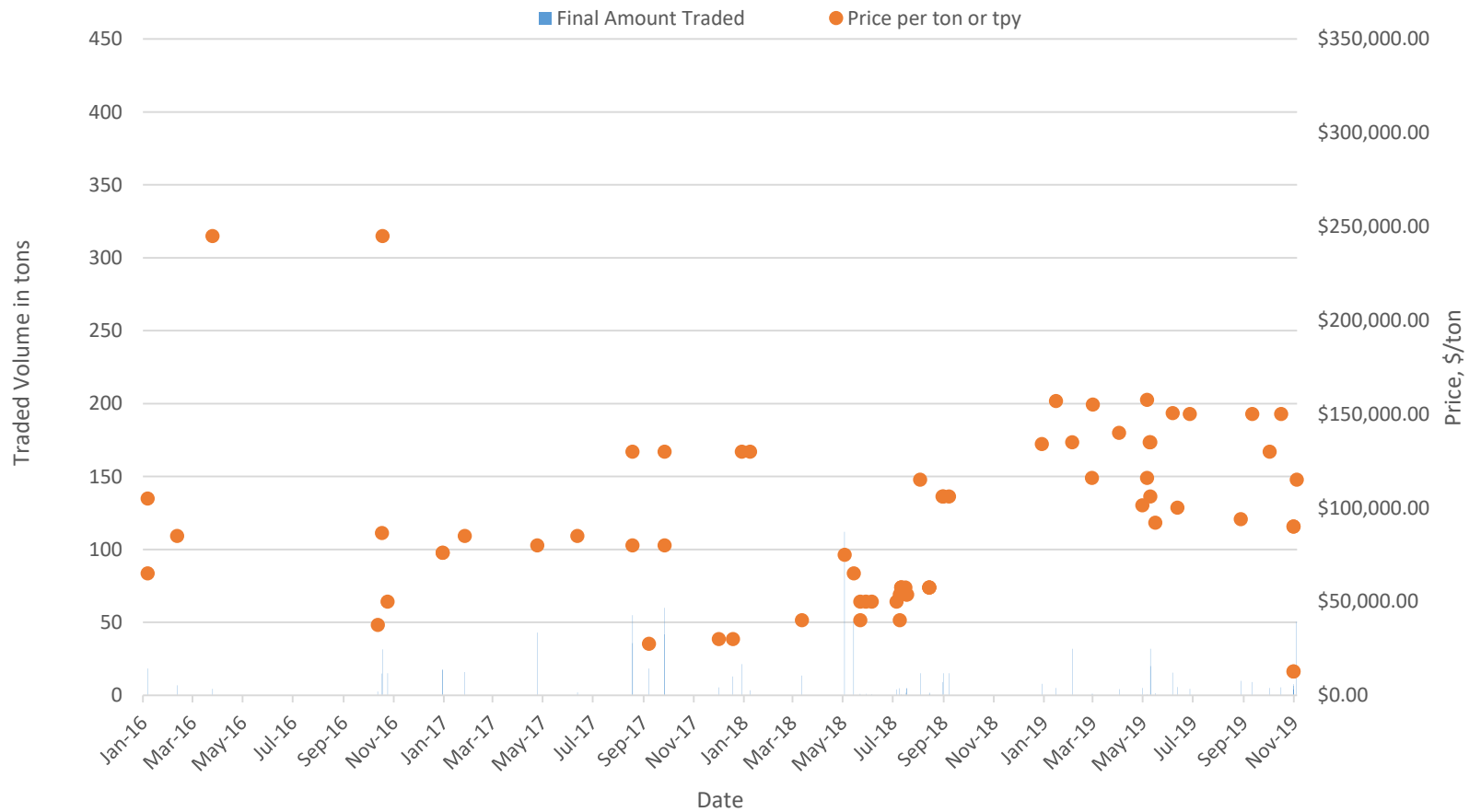
HGB Emission Sources	Past SIP Emissions Year	Current SIP Emissions Year
Electric generating units with emissions recorded in the Environmental Protection Agency's Air Markets Program Data for the SIP emissions year	2015	2018
All Other Point Sources	2014	2016
Area and Mobile Sources	2014	2017

# Offsetting NOx New Facility

Program	Threshold	Offset Ratio
MECT only	10 tons – 49.9 tons	1 to 1
MECT and NSR	> 50 tons	1.2 to 1 (Serious)

- Best Options:
  - Buy MECT NOx Allowances for PTE portion (1 to 1)(not NOx ERCs) These allowances usable for New Source Review Permit and Annual Compliance in MECT Program.
  - If PTE Above 50 tons, the 0.2 portion can be offset with NOx ERC or MECT NOX allowances, whatever is cheaper.

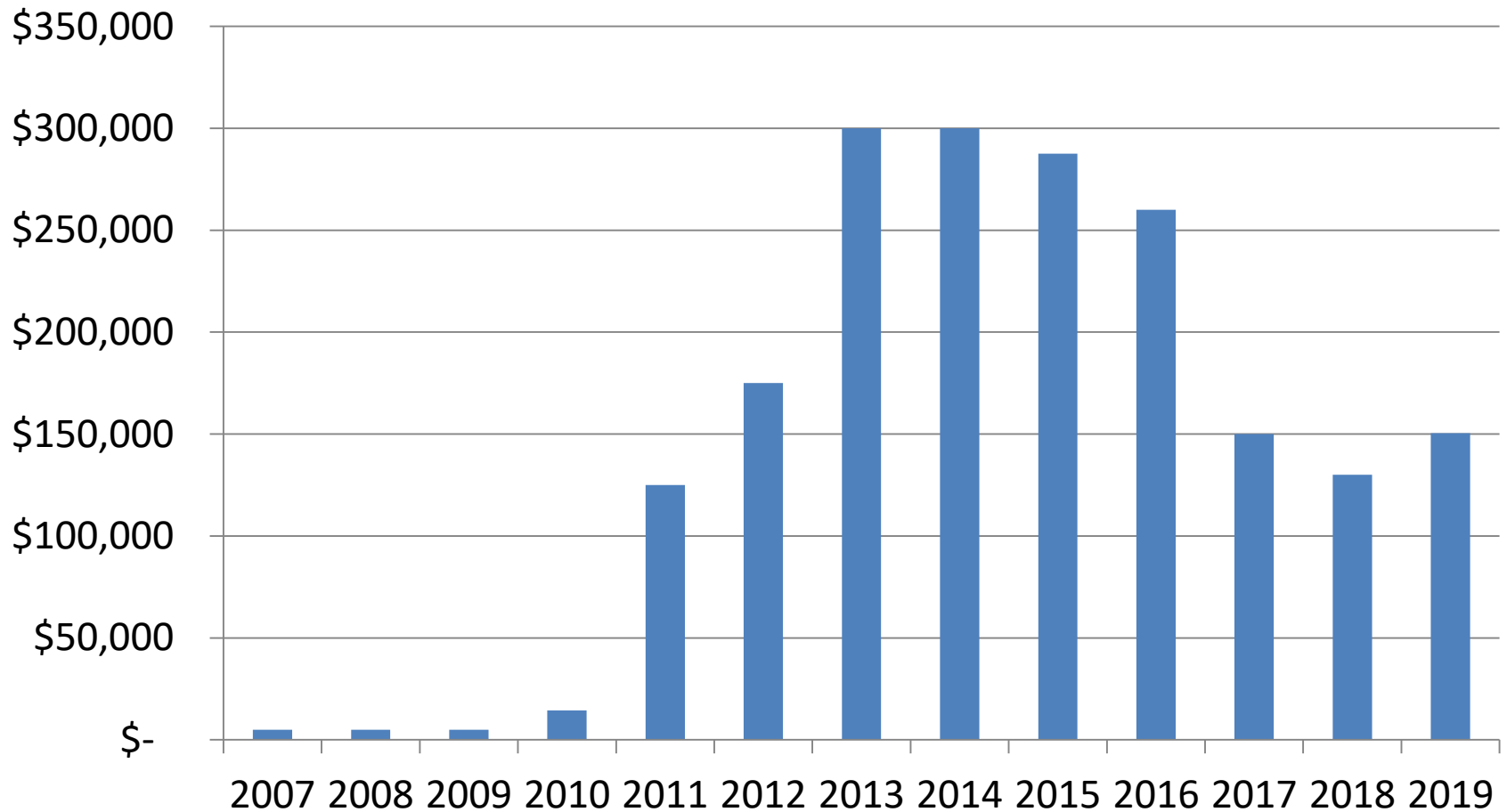
# ERC NOx Pricing Chart 2016-Present



# OFFSETTING VOC IN PERMIT IN HGB

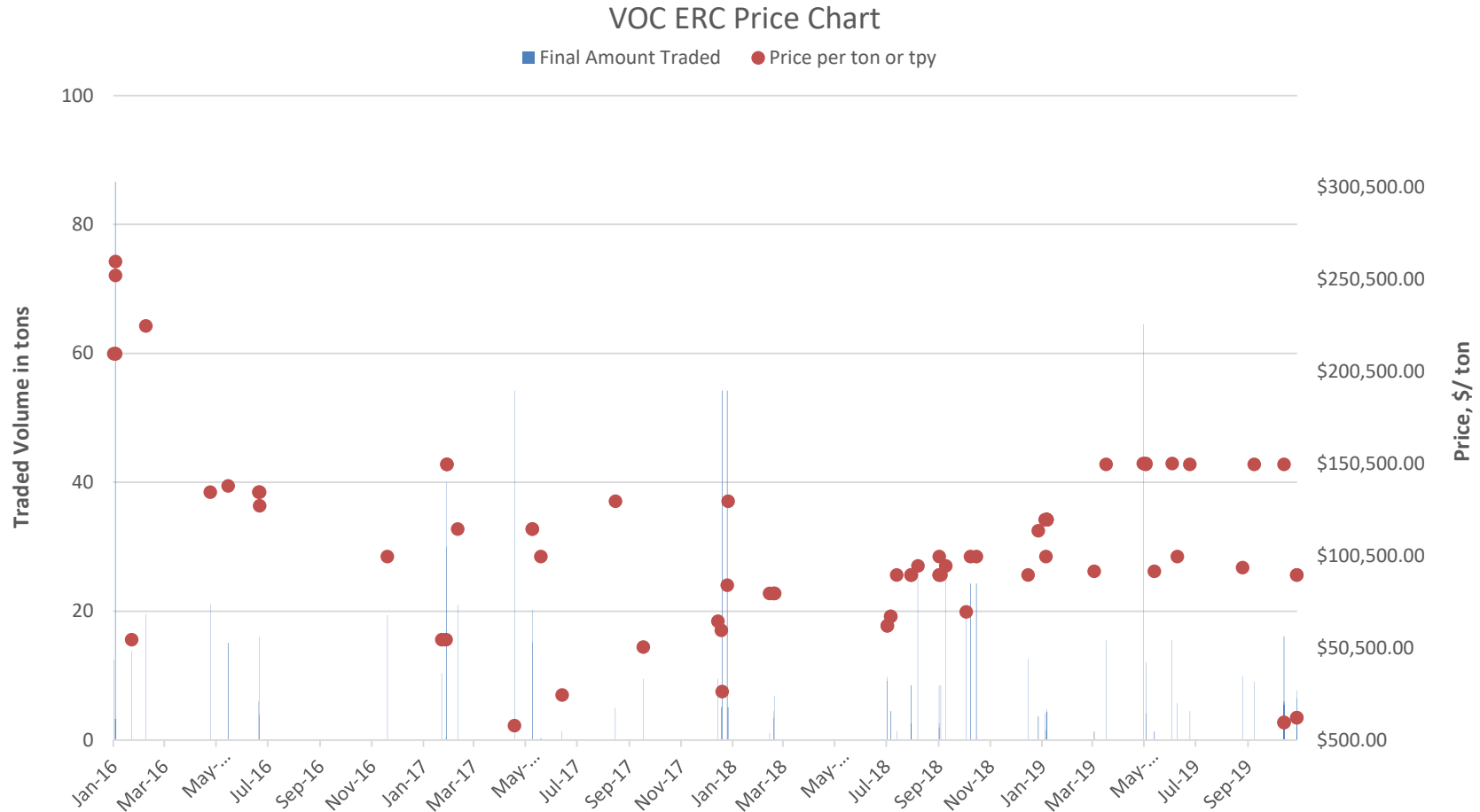
- Provide HGB VOC ERCs
  - **Historical Route**
- Provide HGB NOx ERCs
  - **Modeling, EPA and TCEQ approval**
  - **1 ton of NOx used to offset 2.4 tons in December 2018 (First Time ever more than 1 to 1 was approved)**
  - **New process:**
    - Interpollutant Trading Modeling must be submitted 30 days prior to 2<sup>nd</sup> notice to TCEQ
    - EPA no longer required to approve ratio or IPT in writing
    - If EPA doesn't object during public comment, than it is deemed approved
  - **A few applications pending**
- Provide HGB VOC DERCs for every year of operation
  - **Limited due to Supply of VOC DERCs**
- Provide HGB NOx DERCs for every year of operation
  - **Modeling, EPA and TCEQ approval (Method has not been used since 2013/2014)**

# Max Yearly Price For HGB VOC ERCs



# HGB ERC VOC Pricing Chart

## 2016-Present

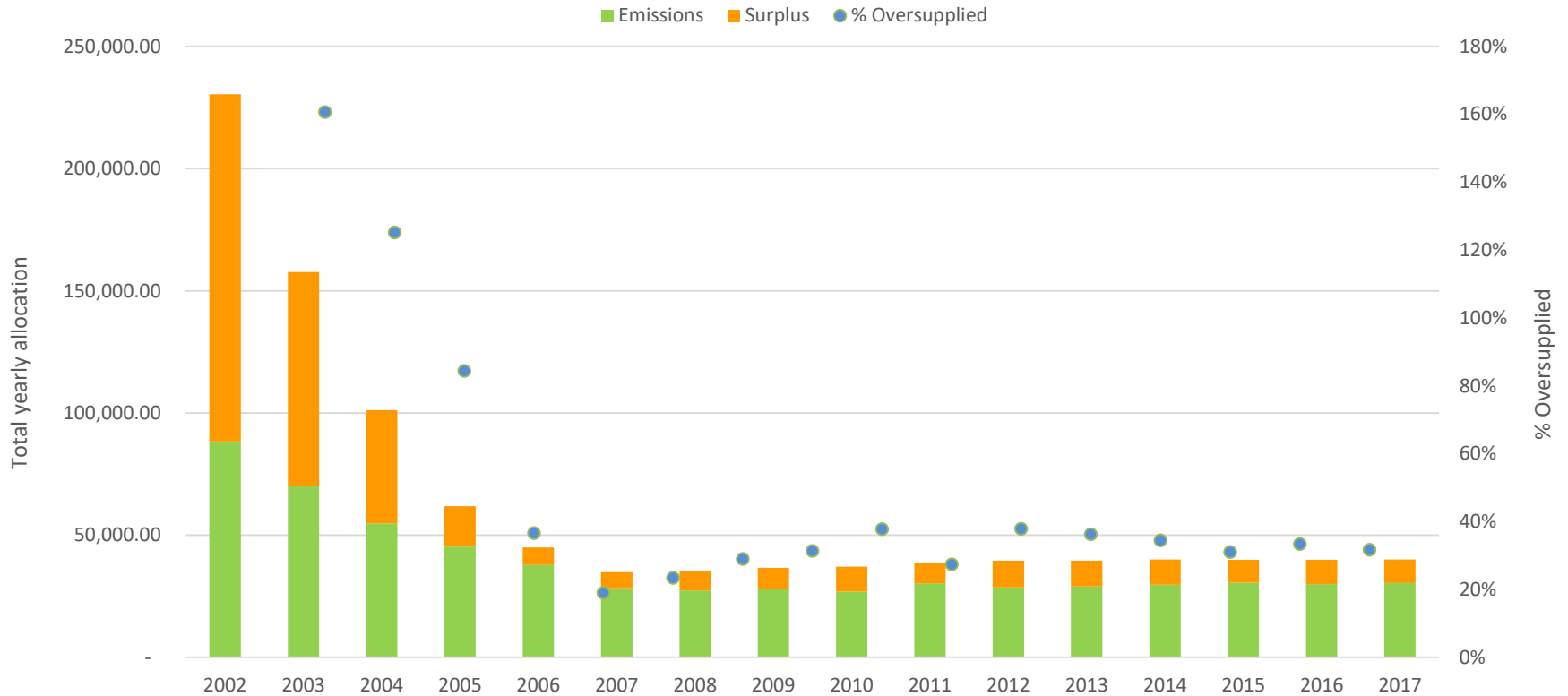


# HGB MECT NO<sub>x</sub> ALLOWANCES

- **NO<sub>x</sub> MECT Allowances**

- Any facility that has collective uncontrolled design capacity to emit 10 tons or more of NO<sub>x</sub>
- MECT NO<sub>x</sub> stream of allowances can be used in lieu of NO<sub>x</sub> ERCs with NSR Permit
- If under 50 tons for a new facility, offset ratio is 1 to 1
- If over 50 tons for a new facility, offset ratio is 1.2 to 1
- New facilities do not receive allocation, but must buy in the marketplace

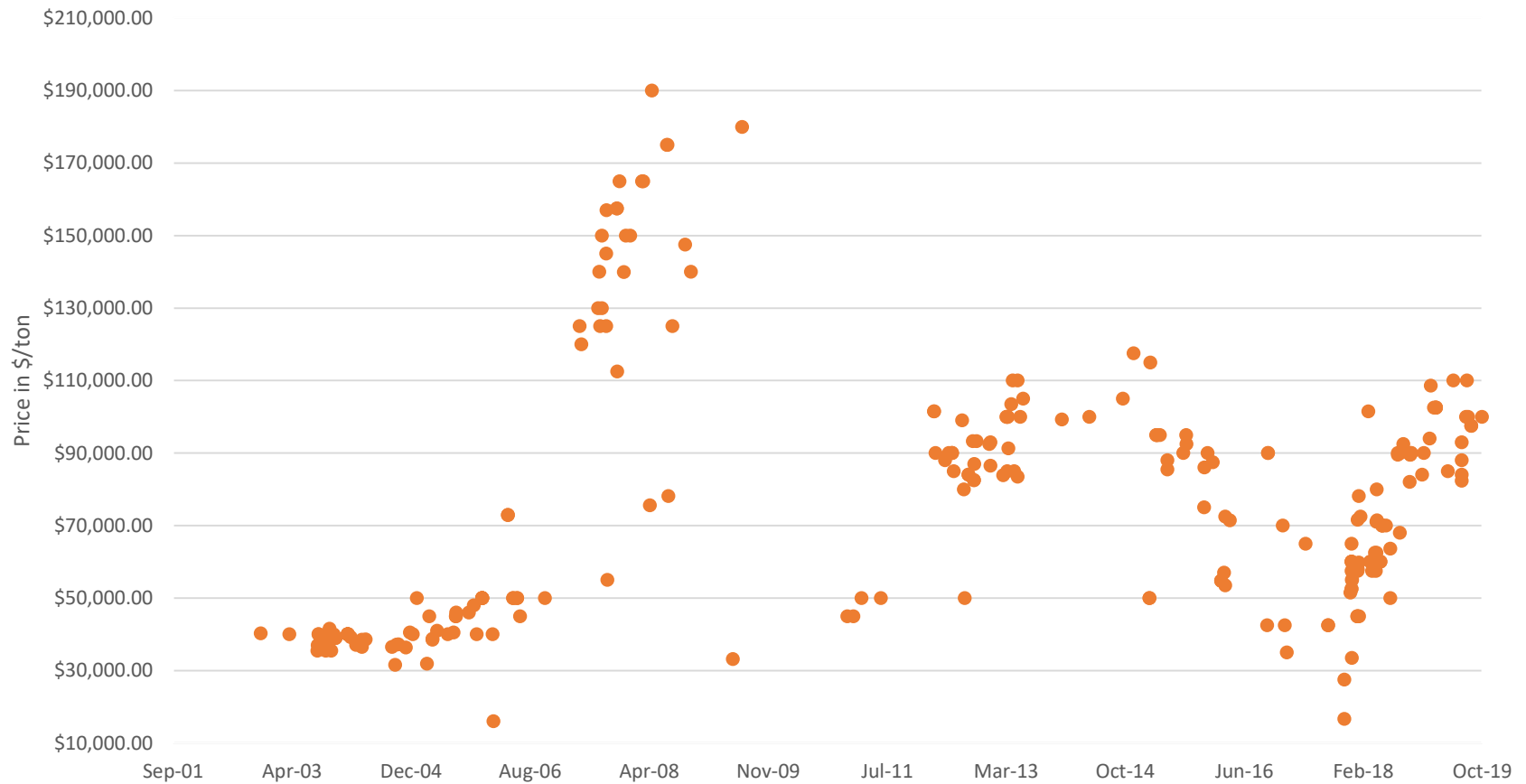
# MECT NO<sub>x</sub> SUPPLY vs. DEMAND



Year	Supply	Demand	Excess
2014	39,958	29,964	9,994
2015	39,955	30,490	9,465
2016	39,976	29,736	10,240
2017	39,979	30,362	9,617



# MECT NOx Stream Pricing and Volume Chart 2016-Present



# MECT NOX Strategy

- Sell MECT NOx perps at \$100,000/ton
- Receive 5-year Hedge at \$200/ton
- Buy Year by Year after year 5
- Successfully has deployed since 2009 last year of the allowance supply cut

# HECT HRVOC SUPPLY vs. DEMAND



# HECT HRVOC Stream Pricing

	2017	2018	2019
Low Price	\$130,000	\$170,000	\$180,000
High Price	\$175,000	\$185,000	\$205,000

# Summary

- Sept 23rd, 2019 – Redesignation to Serious
- July 20<sup>th</sup>, 2021 – Date for HGB to achieve 75 PPB or may be bumped up to **Severe**
- 2020 Presidential Election – NAAQS 2022?
- When HGB achieves 2008 NAAQS – Effects on Program? 2015 NAAQS – 6 counties? Holding ERCs in Liberty and Waller

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# HGB AREA AND MOBILE SOURCES

- TCEQ amended EBT rules effective Oct 12, 2017 so that ERCs could be generated by area and mobile sources
- As of 10-30-18 – HGB ERC Registry consists of Area tons:
  - 0.4 tons NO<sub>x</sub>
  - 15.6 tons VOC
- These emissions do not have to be in the SIP (major change)
- Area Sources:
  - Inelastic sources not eligible – gas stations, restaurants, etc.
  - 61% of VOC emissions in 2014
- Mobile Sources
  - on-road mobile sources that are part of industrial, commercial, non-profit, institutional or municipal fleet and operate 75% of the time in the non-attainment area are eligible to generate
  - No residential sources
  - 67% of NO<sub>x</sub> emissions from Mobile Sources
- Multiple sources can be aggregated to meet 0.1 ton ERC min issuance

# SIP Year HGB Stationary Source Emissions

