

**HARC**

# Navigating through CHP Permitting in Texas

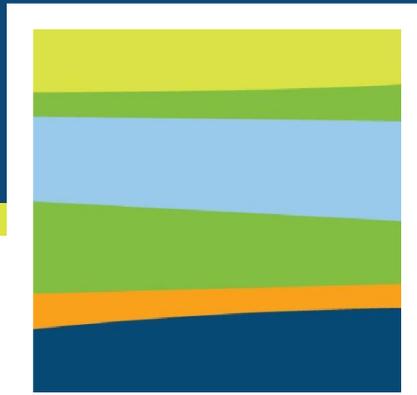
Satish Ravindran P.E, CEM, LEED Green Assoc.

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# Agenda

- Background
- Permit Types and Classification
- Minor Source Permitting
- Major Source Permitting
- Greenhouse Gas Permitting





# Background

# Air Permit Rule

- ✓ **30 Texas Administrative Code Chapter 116 – Control of Air Pollution by Permits for New Construction or Modification**
- ✓ Rule requires facilities that are planned to be constructed emitting air contaminants to obtain authorization **Prior** to construction
- ✓ Construction involves a **New CHP** plant or modification of any **Existing CHP** facility that emits air contaminants



# CHP Permits

- ✓ CHP projects require the following permits and approvals from local agencies before constructing or during construction of a CHP system
  - ❑ **City or county Planning department** – noise ,setbacks, zoning , land use and environmental assessment.
  - ❑ **State or local Building and Fire department**—project design review, fire safety, electrical and structural
  - ❑ **Water and public works** -- water supply and quality
  - ❑ **State Air Quality Agency** –air emissions
  - ❑ **Federal Operating Permit** – If applicable
- ✓ All projects post construction require inspections from the same authorities
- ✓ Local utility company interconnection approval



# National Ambient Air Quality Standards



EPA has set national limits for these criteria pollutants

- ✓ Sulphur Di-Oxides (SO<sub>2</sub>)
- ✓ Nitrogen Oxide (NO<sub>x</sub>)
- ✓ Carbon Monoxide (CO)
- ✓ Particulate Matter (PM)
- ✓ Lead (Pb)
- ✓ Ozone (O<sub>3</sub>)

Air quality regulations in the United States are based on a set of air quality standards known as the **National Ambient Air Quality Standards, or NAAQS**



# Non Attainment -Texas

## Nonattainment Areas

### Classification of Nonattainment Areas:

City of El Paso PM10 - Moderate

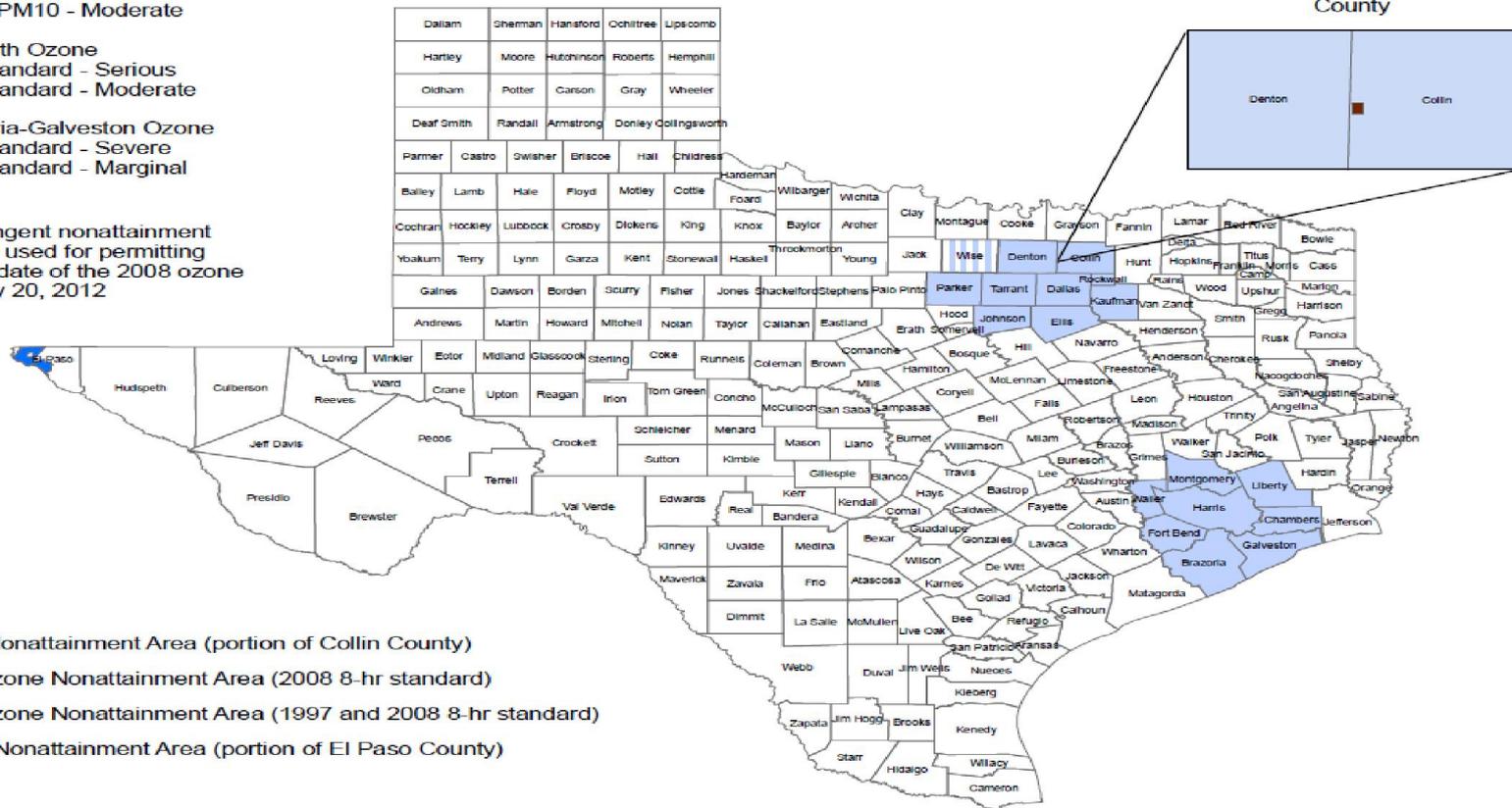
Dallas-Fort Worth Ozone  
 1997 8-hr Standard - Serious  
 2008 8-hr Standard - Moderate

Houston-Brazoria-Galveston Ozone  
 1997 8-hr Standard - Severe  
 2008 8-hr Standard - Marginal

#### \*Notes:

- The most stringent nonattainment classification is used for permitting
- The effective date of the 2008 ozone standard is July 20, 2012

Lead nonattainment area is located within the ozone nonattainment area of Collin County



### Legend

- Lead Nonattainment Area (portion of Collin County)
- 8-hr Ozone Nonattainment Area (2008 8-hr standard)
- 8-hr Ozone Nonattainment Area (1997 and 2008 8-hr standard)
- PM10 Nonattainment Area (portion of El Paso County)

Created May 2012 (TPS/ADMT)

EPA designated stricter standards for facilities that are in non attainment

# Major Source Thresholds

Pollutant	New Source in a Moderate Non Attainment Area	New Source in Serious Non Attainment Area	New Source in Severe Non attainment Area	Modified Source (significant emissions increase)
Lead	100 tons /yr	100 tons /yr	100 tons/year	0.6 tons /yr
S02	100 tons /yr	100 tons /yr		40 tons /yr
NOx	100 tons /yr	100 tons /yr	100 tons/yr	40 tons /yr
PM-10	100 tons /yr	70 tons /yr		15 tons/yr
CO	100 tons /yr	50 tons /yr		100 tons/yr
Ozone	100 tons /yr	50 tons /yr	25 tons /yr	40 tons /yr

A major source or a major modification proposed to be located in a nonattainment area must obtain **emissions offsets through REC's** as a condition of permit approval



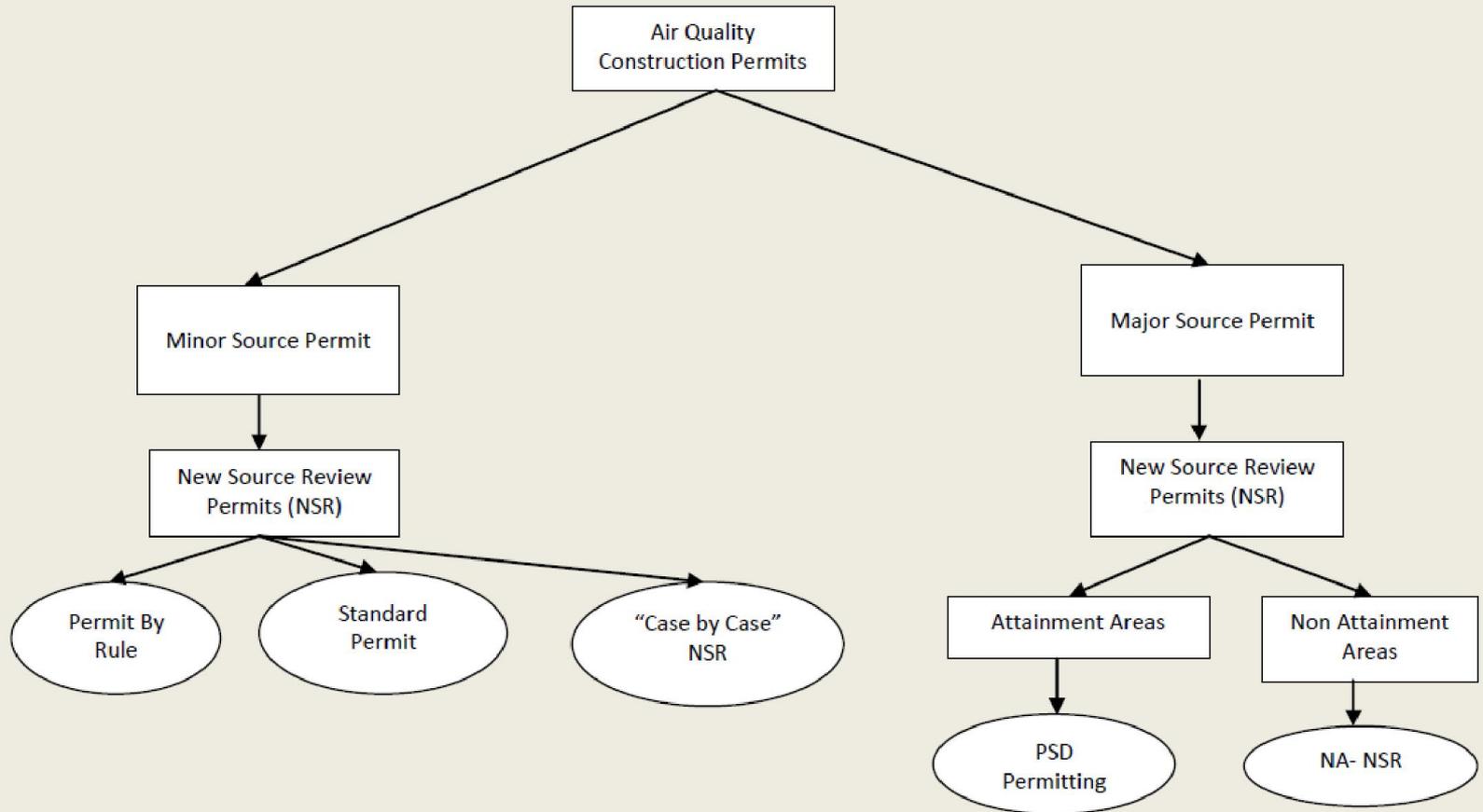
# Permit Criteria

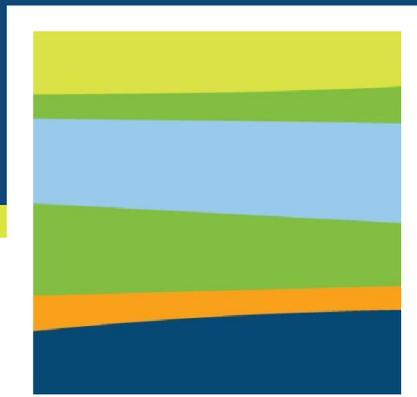
Permits are differentiated by

- ✓ Is the site in non-attainment area?
- ✓ Is the site a new facility or existing ?
- ✓ Is the potential to emit(PTE) greater than major source threshold?
- ✓ Technology



# CHP Construction Permits





# Minor Source Permitting

# What defines a minor source ?

- ✓ Emissions less than the major source threshold of a pollutant
  - ❑ <100/250 tpy in attainment areas or
  - ❑ <100 tpy in non-attainment areas (or even lesser)
  
- ✓ Applies to:
  - ❑ New minor sources
  - ❑ Modifications at minor sources
  - ❑ Minor modifications at major sources
  
- ✓ Applies in BOTH attainment and nonattainment areas



# Minor Source - Permit By Rule (PBR)

- ✓ Introduced to reduce burden in permitting small CHP systems, encourage CHP installations and recognize environmental benefits.
- ✓ Authorizes emissions from stationary natural gas-fired CHP units, up to a capacity of 8 megawatts (MW) without additional controls, and 15 MW with oxidation catalyst.
- ✓ The total emissions from CHP shall not be greater than:

NOX and CO	250 tons/yr
VOC, SO2, inhalable PM	25 tons /yr
PM <=10 microns	15 tons /yr
PM <=2.5 microns	10 tons /yr



# Permit By Rule (PBR)

- ✓ Allows primarily pipe line quality natural gas .  
Other fuels like propane, gasoline, LPG and diesel can be used for emergency only
- ✓ Disallows **supplemental firing upstream of HRSG**
- ✓ **Output based NOx Regulations**
  - ❑ NOx measured in lb per MWh
  - ❑ Can take credit for heat recovered @ one Mwh for every 3.4 MMBtu heat recovery



# Minor Source - Standard Permit

## Standard Permit for Electric Generating Units - 2001

- ✓ Equivalent to General Permit in other states .
- ✓ Requirements of East Texas more stringent than West Texas
- ✓ Specific output based NO<sub>x</sub> Emission limits
- ✓ No size limitations and all fuels allowed



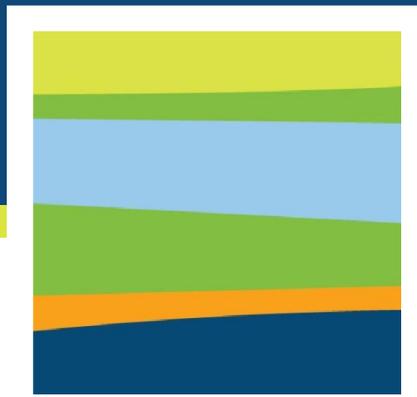
# Minor Source - Case by Case NSR

- ✓ New Facilities or changes to facilities that can not meet De Minimis Requirements, a PBR, or a Standard Permit must obtain a Case-By-Case NSR Construction Permit.
- ✓ NSR Permit process is lengthier, more detailed, and involves a Control Technology Review, Air Quality Analysis, and Public Notice

A source –

- ✓ with PTE greater than or equal to the major source threshold, but has **actual emissions** below that level and brings PTE below the major source threshold by accepting **enforceable limits** on emissions or operating conditions





# Major Source Permitting

# Major NSR Permits

- ✓ Applies to Major new sources & major modifications.
- ✓ PTE > major thresholds.
- ✓ **Prevention of Significant Deterioration (PSD).**
  - Applies to major source in attainment area.
  - EPA's goal is to protect clean air.
- ✓ **Nonattainment NSR (NNSR or NA-NSR).**
  - Applies to nonattainment area pollutants.
  - EPA's goal is to make progress toward attainment of NAAQS.



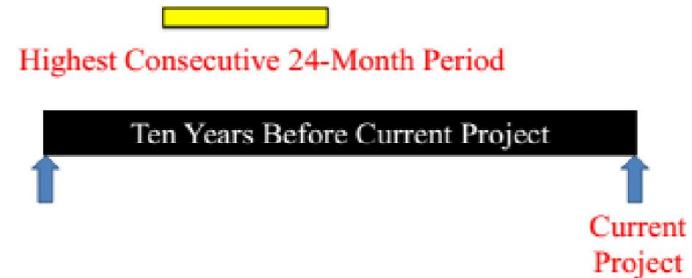
# Major NSR applicability

- ✓ If new facilities are being constructed, the project emission increase from those facilities is a summation of the new facilities' PTEs.
- ✓ For existing modified facilities, the project emission increase is determined by comparing the modified facilities planned emission rate to the baseline actual emission rate



# Baseline Emission Increases

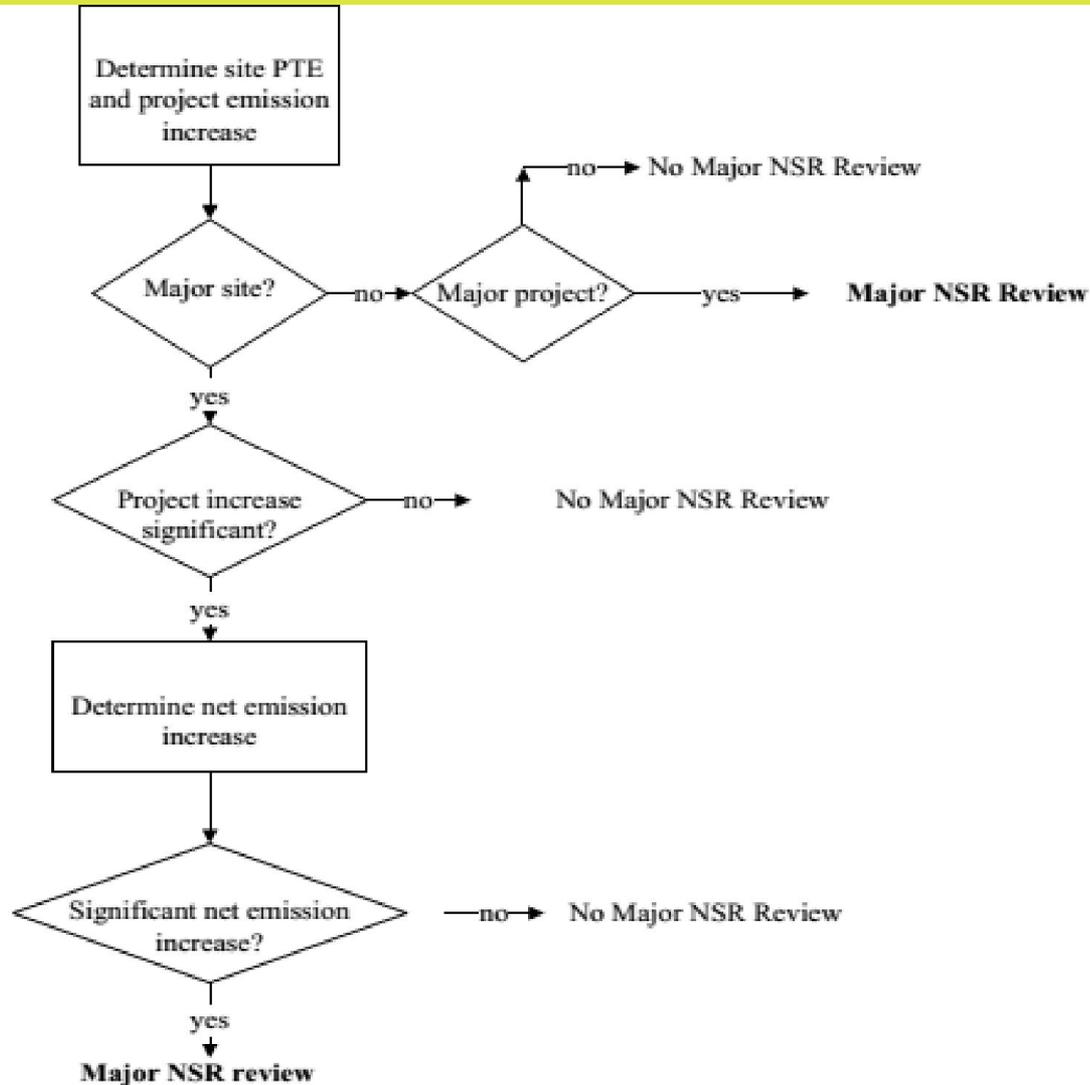
**Existing facility : Use Baseline Emission Rate**



**New Facilities : Baseline Emissions Rate is zero. Use PTE**



# Major NSR Review



# Major Source - PSD Permits

- ✓ A source with emissions of any one air pollutant greater than or equal to a threshold of 250 tpy
- ✓ “Major for One, Major for All”— If a source emits even one pollutant (attainment or non attainment) >250 tpy, the source will be considered major.
- ✓ Then all attainment pollutants, even those emitted in non-major amounts, will be reviewed for PSD applicability by using their respective **Significant Emissions Rate (SER)**. Emissions equal to or higher than the SER make the pollutant subject to PSD



# PSD Thresholds

Criteria Pollutant	Major Source Modification Significant Emission Rate in tons per year
CO	100
NO <sub>x</sub>	40
SO <sub>2</sub>	40
Ozone as VOC	40
Ozone as NO <sub>x</sub>	40
PM	25
PM <sub>10</sub> (includes condensable emissions)	15
PM <sub>2.5</sub> (includes condensable emissions)	10
Pb	0.6



# Major Source - NA-NSR Permits

- ✓ Emissions of any one air pollutant greater than or equal to the major source thresholds in a nonattainment area.
- ✓ This threshold is generally 100 tpy (or lower depending on the nonattainment severity) for all sources



# PSD vs NA-NSR

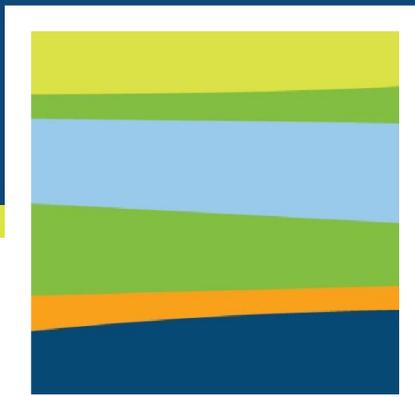
PSD	NA-NSR
Authorize major source pollutants in attainment area	Authorize major source pollutants in non-attainment areas
Max emission levels not pollutant specific to region	Max levels for different pollutants specific to area
Requires Best Available Control Technology (BACT)	Requires a more stringent Lowest Available Emission Rate (LAER)
Demonstrate no deterioration of air quality increment through modeling	Obtain offsets at a ratio greater than 1:1 (and up to 1.3:1)



# Who Has to Obtain a Title V Permit?

- ✓ All major sources (PTE > major thresholds ) need a Federal Operating Permit (FOP). It is also referred to as **Title V permit**.
- ✓ EPA generally has not required non-major sources to get permits
- ✓ Applicability is addressed in [30TAC122](#)
- ✓ Generally, sites with PTE greater than major thresholds but actual emissions less than thresholds (and within specified by NSR permits) can avoid FOP by submitting emission certification
- ✓ To certify emission limits, owners or operators need to complete and submit Form [APD-CERT](#)





# Greenhouse Gas Permitting

# Greenhouse Gas Permits – The Old Way

- ✓ Greenhouse gas (GHG) emissions from CHP were covered by the Prevention of Significant Deterioration (PSD) and title V Operating Permit Programs beginning 2011

## **Step 1. (January 2, 2011 –June 30, 2011)**

- ✓ Only sources currently subject to the PSD permitting program.
- ✓ BACT only for GHG increases of 75,000 tpy or more of total GHG, on a CO<sub>2</sub>e basis , only to existing PSD sources.

## **Step 2( after July 1, 2011)**

- ✓ Source has GHG PTE equal to or greater than 100,000 TPY (75,000 for modified) CO<sub>2</sub>e irrespective of other emissions.



# GHG Permits –Landmark Rulings

- ✓ On June 23 , 2014, the Supreme Court determined that a source cannot be a major facility for PSD permitting solely on emissions of GHG's above thresholds.
- ✓ PSD for GHG gases can only happen when emissions of non GHG's are above major source thresholds
- ✓ HB 788 enables TCEQ to assume the GHG permitting responsibilities that EPA has exercised . TCEQ's State Implementation Plan (SIP) has been approved .
- ✓ TCEQ , not EPA will make key decisions regarding level of control required for major sources under PSD
- ✓ PSD will continue to require limitations on GHG 's using BACT



# Contacts

Satish Ravindran P.E, CEM, Green Assoc.

979-450-0346

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