



Getting to the Clean Air for which we paid: TERP, Drive A Clean Machine Program and other Efforts to Meet new EPA standard

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Overview

- Why do we care?
- How are we doing with current and future ozone standard
- Current and Upcoming Clean Air Standards that require more, not less, efforts (Ozone, PM 2.5, SO2, Haze and CO2)
- History of TERP and LIRAP
- Passage of SB 1727 (2013) added new TERP programs and percentages
- HB 14 had widespread support but did not pass
- A Path forward – begin with TERP and LIRAP funding – Spend the full amount through 2021/2022
- Make sure we get credit for what we are doing
- Consider oil and gas field equipment and energy efficiency as two low-hanging fruit NOx and VOC reduction tools



Why we care

- Ozone Standard Exists to Protect Public Health; Cleaner air means healthier Texans;
- High Ozone levels leads to early deaths, particularly for children and the elderly
- Air Pollution impacts economics – lost work days, lost school days, unproductive workers
- Attracting new business and development is helped by clean air and hurt by dirty air
- Texas can and has taken steps to prepare for future rules and standards, avoid expensive regulations and helped spur economic development: TERP (SB 5), LIRAP, Grandfathered Power Plants, SB 7, GHG Permitting



A New Standard for Ozone

- 1971: 84 PPB 1-Hour Standard
- 1979: 124 PPB 1-Hour Standard
- 1997: 84 PPB 8-Hour Standard
- 2008: 75 PPB 8-Hour Standard
- 2015: 70 PPB* 8-Hour Standard
- 2017-2022 Compliance with new 8-Hour Standard
- 2021: Probable date for next standard
- * Note: EPA Procedure considers 71 an exceedance



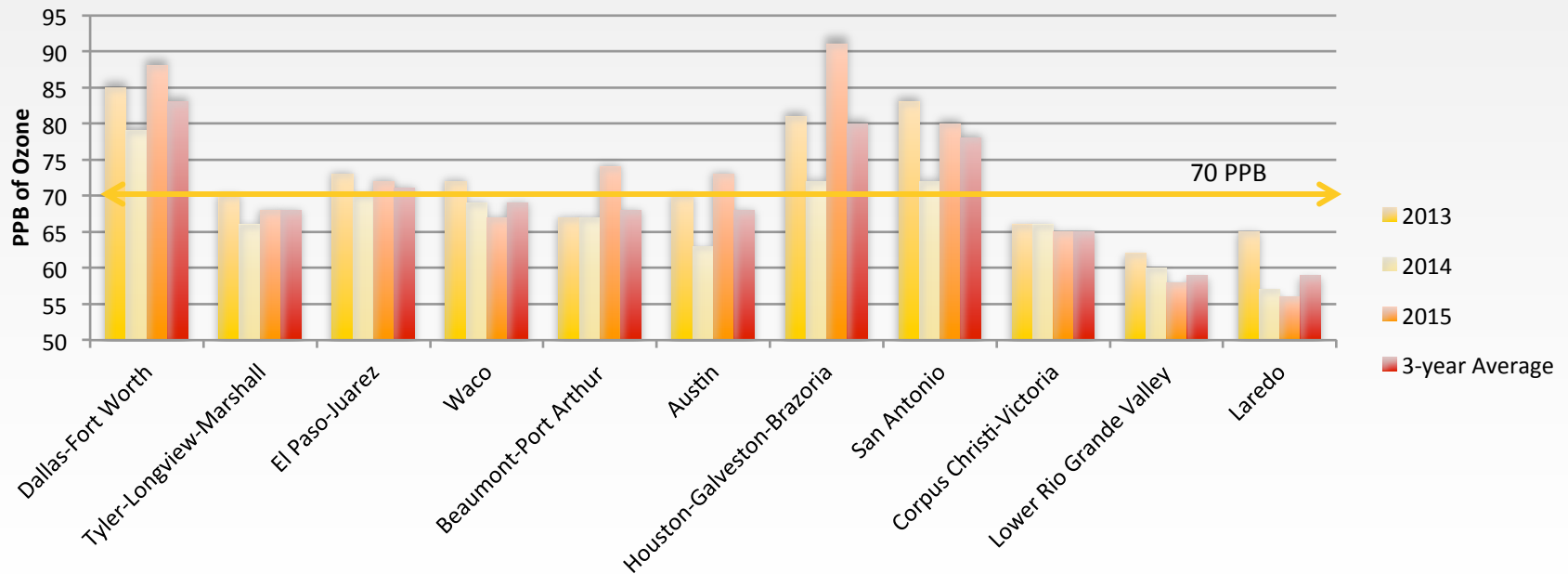
Timelines for Compliance with New Ozone Standards

- February 2016: Guidance on Designations
- July 2016: TCEQ Nonattainment Designations to Governor
- October 2016: Governor finalizes recommendations
- June 2017: EPA Proposes Nonattainment Designations
- August 2017: Comments Due from Public, State
- October 2017: Final Area Designations
- 2019-2023: Initial Area Compliance Deadlines Depending on Severity of Ozone issue; Some areas have until 2027-38 for final compliance



How Are We Doing With New Ozone Standard? (Dallas, Houston, San Antonio and El Paso likely NA; Austin, Beaumont-Port Arthur, Waco, Corpus and Tyler-Longview-Marshall Need Help to Stay in Attainment)

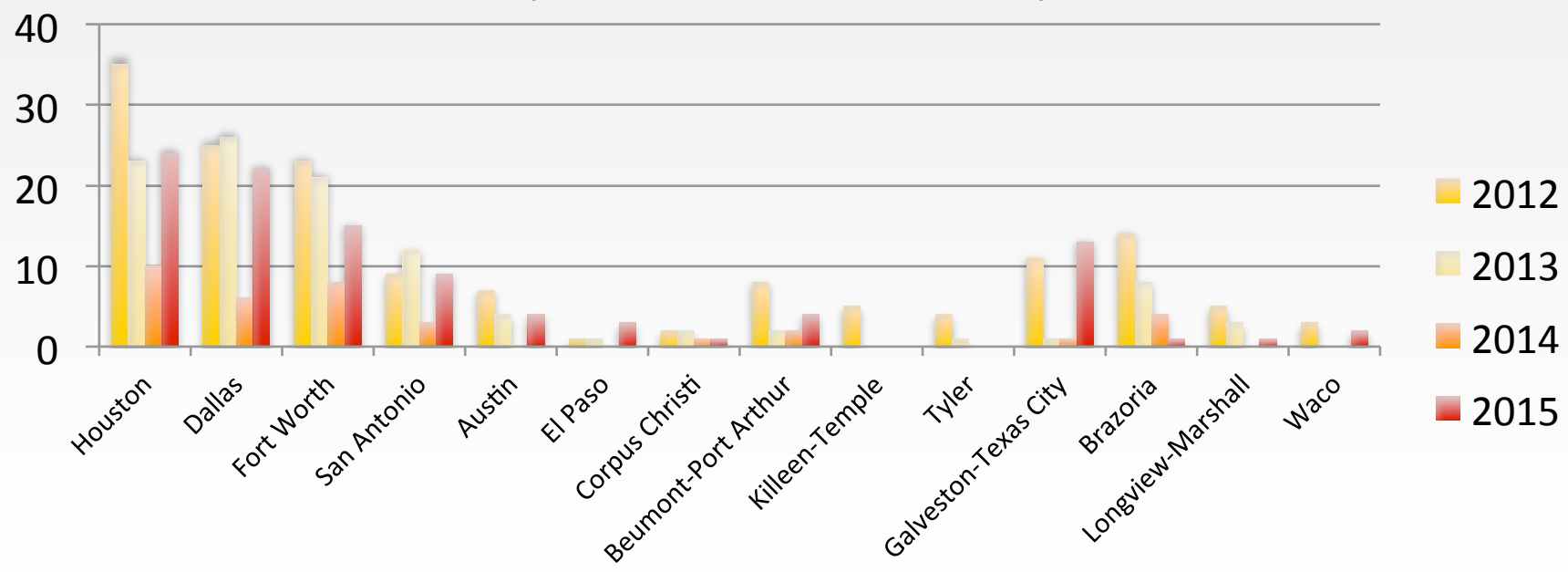
4th-Highest 8-Hour Ozone Levels by Metro, 2013-2015 and 3-Year Average





Just cause you meet standard, doesn't mean air quality is always good!

**Number of Days of High 8-Hour Ozone Levels
(above 75 PPB current standard)**





Ozone, PM 2.5, Carbon Dioxide, Regional Haze and SO2 All Require Further Efforts

OBAMA Administration has lowered SO2, PM, ozone and proposed Methane, federal Regional Haze Program and Clean Power Plan

- New Ozone Standard-70 PPB
- Oil and Gas Facility Standards for New Wells (April 2014)
- Particulate Matter standards (upheld by Supreme Court)
- Oil and Gas Emission Standards for New and Modified Sources (Methane and VOC standards)
- Clean Power Plan: 33% Reduction in Carbon Dioxide from Coal and Gas Power Plants by 2030

- Number of non-attainment ozone areas likely will go from two to four or more;
- Non-Attainment Areas Could Expand in Dallas and Houston by adding counties (as Wise was recently added)
- Some areas around coal plants may violate new SO2 Standards; Refineries should be ok because of major Sulfur Recovery Unit additions; Carbon Black plants, Pet Coke plants, and Portland Cement Kilns should also be assessed.
- Houston – Port of Houston and Houston Ship Channel comes close to violating new annual PM standards – Further reductions needed
- While newer gas facilities are going to be cleaner under new EPA standards, older oil and gas wells, storage and transmission facilities that are still in use could use clean up
- Regional Haze FIP may require scrubber upgrades or retrofits for older coal plants in next three to five years
- Texas will need to begin a state planning process for CO2 emissions
- TERP can have some cross-pollutant benefits, particularly on PM 2.5 and Nitrogen Dioxide, that will help compliance and health

8



TERP (2001) and LIRAP (2005) Were Created to Clean the Air in Texas through Incentives, not Regulation

- **TERP**

- Emissions Reductions Incentive Grants (On-road and off-road grants mainly for locomotives and vehicles)
- Texas Clean Fleet Program – Replace diesel with alternatives
- Alternative Fueling Facilities in Dallas, Houston and El Paso (2011)
- Clean School Bus Program
- Texas Natural Gas Vehicle Grants for Heavy-duty or medium-duty vehicles (2011);
- Clean Transportation Triangle Program – fueling stations between major metro areas (2011)
- New Technology Grants -- 2009
 - Grants for new technology like energy storage

- LIRAP – Low-Income Vehicle Repair and Replacement Program or Drive A Clean Machine Program
 - Significantly expanded in 2009
 - Provides \$3000 or \$3500 for an old car or truck for a replacement if certain income guidelines are met
 - Alternatively can provide up to \$600 for repairing an existing car to meet emissions standards
 - Currently only available in areas that require emissions testing – Houston, Dallas-Ft. Worth and Austin (Travis and Williamson)



AirCheckTexas Drive a Clean Machine is a TCEQ program that removes older, more polluting vehicles from Texas roadways in counties with high ground-level ozone.



TERP, 2001-2014 (DERI program only)

Area	# of Projects	Total Tons of Nox	Total Grants	Cost per Ton	Tons per Day 2015
Dallas Area	3,843	57,052	\$313.2	\$5,489	18
Houston Area	3,559	71,211	\$383.7	\$5,388	20.5
San Antonio	842	9,131	\$64.1	\$7,021	3.7
Austin	768	7,448	\$56.5	\$7,591	2.8
Beaumont/PA	181	8,338	\$41.8	\$5,019	1.8
Tyler	204	5,381	\$33.2	\$6,172	1.8
Corpus Christi	31	314	\$5.6	\$5,634	0.1
El Paso	135	706	\$3.1	\$5,019	1.8
Victoria	16	314	\$2.2	\$7,019	0.1
Total	9,580	160,836	\$905.1	\$5,628	49.3



Status of TERP: Lots Spent but Lots More Available

Category	Fy 2011	Exp 2012	Exp 2013	FY 2014	FY 2015	FY 2016/17
Balance	\$385	\$413	\$556	\$615	\$716	\$1066
Revenues	\$162	\$167	\$167	\$187	\$187	\$210
Spending	\$134	\$25	\$109	\$77.7	\$77.6	\$238
TERP Ending Fund	\$413	\$556	\$772	\$882	\$1,066	\$1,245

Note: Information for ending balance in FY 2015 and FY 2016/17 is from Comptroller and includes about \$200 million in additional shared TXDOT revenues



New Programs in TERP May be Positive, but with reduced allocations less money going to direct NOX Diesel Reduction Grants

12

● NEW PROGRAMS ADDED IN 2011

- Alternative Fueling Stations (Up to Two Percent)
- Natural Gas Vehicle Grant Programs (Not Less than 16 percent)
- Natural Gas Fueling Stations (Not more than four percent)
- Air Monitoring in North Texas -- not more than \$3 million shall be allocated in 2014 and in subsequent years

● NEW PROGRAMS ADDED IN 2013 (SB 1727)

- Two-year \$2500 rebates for passenger natural gas, propane and electric vehicles (expired in 2015)
- Clean-up of Drayage Trucks at Ports and Rail Ports
- Renewable Energy Storage Facilities in Affected Counties
- ALSO the new legislation authorized TCEQ to design other programs that were cost-effective for nitrogen oxide reduction, including reducing nitrogen oxide and VOCs from oil and gas facilities that can be shown to be contributing to high levels of ozone. TCEQ has been hesitant to put any funding to this program because they are concerned it could drive a regulatory approach and some legal issues. This must be resolved.



HB 14: Close but no Cigar

- Senate and House unable to reach agreement on HB 14, but it contained a lot of good provisions that virtually all stakeholders supported:
 - Extend the expiration date of main programs to 2023 (makes sense because of compliance with new ozone standard)
 - Combine the Clean Transportation Triangle and Alternative Fuels Facilities Program into one.
 - Extends Light-Duty Natural Gas, Propane and Electric Vehicle Program and Adds Hydrogen Fuel Vehicles to Program
 - Add land-based equipment to Drayage Truck program
 - Expands eligible equipment in New Technology grants to include oil and gas compressor engines and gas capture technology among others
 - Expansion of eligible counties for Clean Triangle projects to South Texas



Drive A Clean Machine or LIRAP

- At full funding -- \$43,000,000 per year – the Drive A Clean Machine Program can take some 10,000 old dirty cars and replace them with clean running vehicles
- In 2015, Texas Legislature restored full funding for LIRAP and LIP at \$43 million per year – great job!
- At reduced funding, such as in 2013-2014, only some 1,000 cars get taken off the road
- A new car is 90% cleaner than an old car (before 2001)
- In 2010 we were funding at some \$40 million – then we were funding only at \$7 million for several years.
- Counties like El Paso and Bexar may want to consider LIRAP and LIP programs as a way to reduce NOx cheaply.



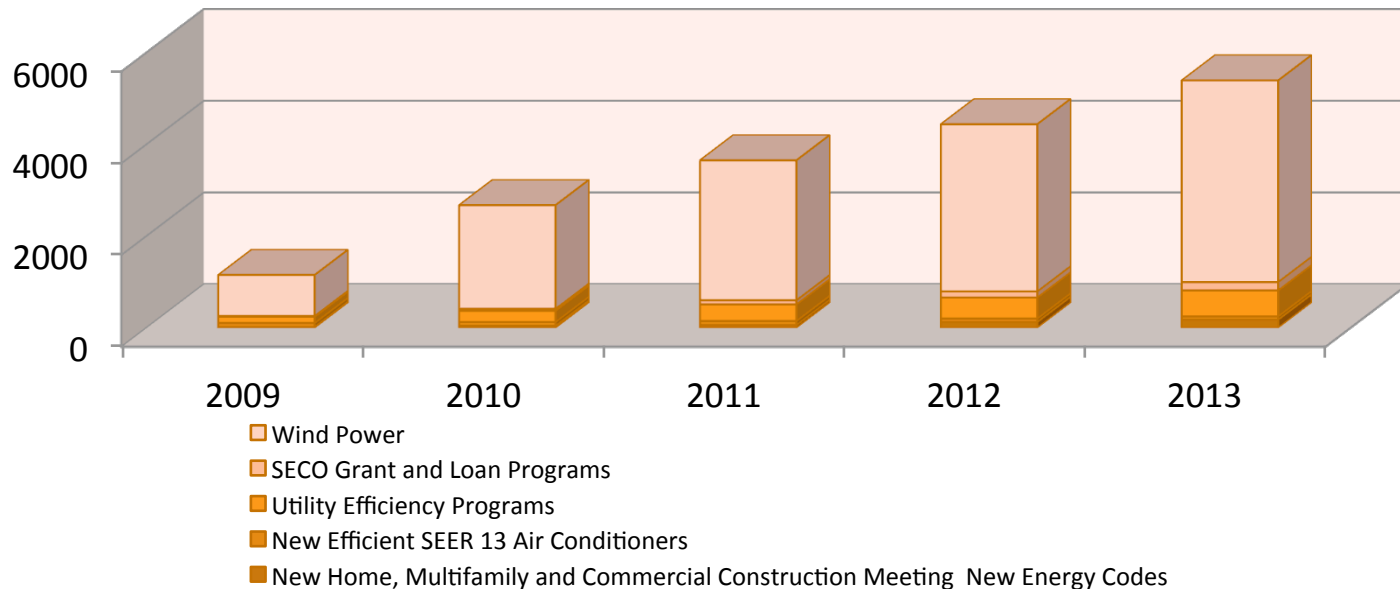
TERP already includes Energy Efficiency but could be expanded

- Under THSC 386.057, the TCEQ is to include information in this report regarding the effectiveness of certain energy efficiency programs in avoiding and reducing emissions. These programs include:
 - Goal for Energy Efficiency, established under the Texas Utilities Code (TUC) 39.905;
 - Energy Efficiency Programs in Institutions of Higher Education and Certain Government Entities, established under THSC 388.005; and
 - Texas Building Energy Performance Standards, established under THSC 388.003. SECO has recommended going to 2015 Energy Codes next year
- **Energy Systems Laboratory at Texas A & M** plays a role in making sure these programs have verified energy savings, and associated pollution reductions;
- Assuring adequate funding for ESL to perform this function is important to our SIP and future compliance.
- Other EE and DR programs could be funded by TERP if Legislature Saw Fit. WHEEL (Warehouse for Energy Efficiency Loans) program is an example.



ESL Analysis indicates renewables and energy efficiency are helping lower ozone levels

Annual Tons of Nitrogen Oxide Emissions Reduced Due to Energy Efficiency and Renewable Programs





Recommendations

- **SPEND THE MONEY:** With some \$1.2 billion in TERP fund balances, and some \$150 million per coming in each year, TCEQ, Stakeholders and Leg should come up with a six year, \$300 million per year funding strategy, while allowing fees to phase out;
- **FUND WHAT WORKS:** Bulk of funding should concentrate on current most cost-effective transportation cleanup programs like DERI
- **TRY NEW TECHNOLOGIES AND PROGRAMS:** However, TERP should be expanded to include electric vehicles, cleanup of motors, leaks and old trucks in oil and gas fields, and also look at energy storage, demand response and energy efficiency, including loan programs. TERP should also reassess marine vessel and locomotive controls that may be important for NOx reduction.
- **ADMINISTER AND VERIFY SAVINGS:** TERP should continue to fund administration of programs, including both TCEQ and restoring full funding of \$1.2 million to Energy Systems Lab which verifies energy savings and emission reduction that will be important both for ozone compliance and eventually CO2 compliance;
- **CONTINUE LIRAP AND LIP:** Legislature should continue to fund LIP and LIRAP for several years; some counties like El Paso and Bexar should consider benefits of joining.