

San Pedro Bay Ports Clean Air Action Plan Cargo Handling Equipment Measure SPBP CHE 1

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Discussion Topics


- **Why go beyond CARB's CHE regulation?**
- **Overview of the SPBP CHE 1 measure**
- **How Goals of SPBP CHE 1 will be achieved**
- **Building on Success**
- **Additional Efforts Underway**



Why go beyond CARB's CHE regulation?

- **CHE contribute 14% of DPM and 12% of NO_x emissions as compared to total DPM and NO_x emissions contributed by all port sources operating in the San Pedro Bay Ports**
 - › Yard Tractors contribute 60% of total CHE emissions
 - › Non-Yard Tractors CHE < 750 hp contribute 32% of total CHE emissions
 - › Non-Yard Tractor CHE > 750 hp contribute 8% of total CHE emissions
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Why go beyond CARB's CHE regulation?

- **CARB's PM Exposure Assessment Study showing CHE as a major contributing source to health risk in nearby communities**
 - **For SCAB to attain NAAQS, and to protect public health, immediate action is necessary to significantly reduce Port related emissions sources while facilitating growth in trade**
 - **Current and emerging technologies exist to more aggressively reduce emissions from CHE**
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Overview of the SPBP CHE 1 Measure


- **More stringent requirements compared to CARB's CHE regulation adopted in 2005**
- **SPBP CHE 1 further accelerates the CHE modernization concentrating mainly on 2003 and newer equipment that is not covered by the CARB regulation between 2006 - 2011**




Overview of the SPBP CHE 1 Measure

- **Beginning in 2007, all new diesel and alternative powered CHE purchases must be equipped with engines meeting 0.01 g/bhp-hr PM standard and the cleanest NOx**
- **If engines meeting 0.01 g/bhp-hr PM standard not available, then purchase the cleanest engine available and install CARB's Verified Diesel Emissions Control (VDEC) Device**

Overview of the SPBP CHE 1 Measure

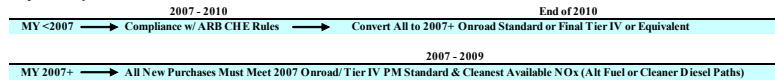
- **By 2010, all yard tractors are required to meet USEPA's 2007+ on-road or final Tier 4 non-road engine emission standards**
 - **By 2012, all non yard tractor CHE less than 750 hp are required to meet USEPA's 2007+ on-road or final Tier 4 non-road engine emission standards**
 - **By 2014, all non yard tractor CHE greater than 750 hp are required to meet USEPA's final Tier 4 non-road engine emission standards**
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Overview of the SPBP CHE 1 Measure

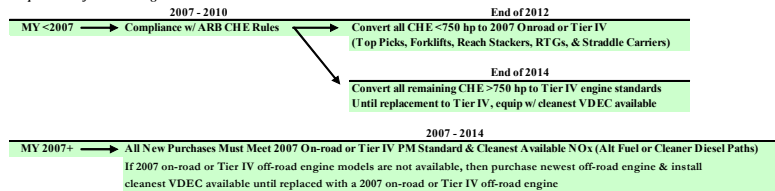
- **Designed to follow the same implementation path as CARB's regulation to avoid confusion**
 - **Fuel neutral to provide terminal operators flexibility in purchase decisions**
 - **Faster track than CARB's timelines to obtain emissions reduction beyond CARB's regulation to meet goals of San Pedro Bay Ports Clean Air Action Plan**
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Overview of the SPBP CHE 1 Measure SPBP-CHE 1 & CARB CHE Rule Interaction

CAAP Requirements for Yard Tractors:



CAAP Requirements for Remaining CHE:



SPBP CHE 1 Measure Reduction Benefits

- By 2011, a reduction of 11 tpy of DPM and 376 tpy of NOx is expected from SPBP-CHE 1 measure
- By 2011, a total reduction of 104 tpy of DPM and 1,753 tpy of NOx is expected from SPBP-CHE 1 measure plus CARB's CHE regulation



How Goals of SPBP CHE1 will be achieved

- Technical Fact Sheets
- Technology and Funding Workshops
- Lease Renewals
- Emissions reduction benefits tracked through annual emissions inventory updates and CAAP updates



Building on Success – Based on 2005 EI for the San Pedro Bay Ports

- 43% of CHE are installed with DOCs.
- 28% of CHE started using Ultra Low Sulfur Diesel Fuel before CARB mandate
- 14% of Yard Tractors use on-road engines
- 15% of CHE use Propane
- 18% of CHE use either Emulsified Fuel or O₂ Fuel

Efforts Underway

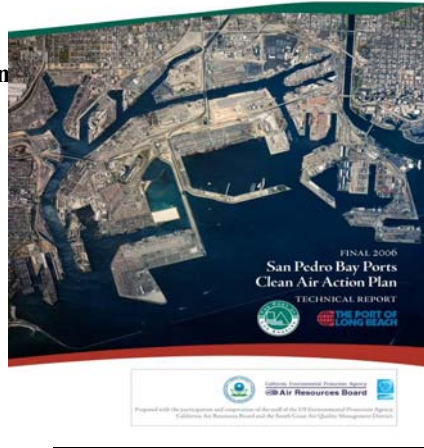
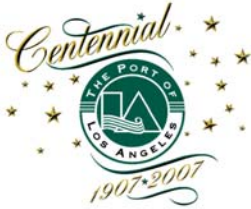
- **An integral part of SPBP Clean Air Action plan is its Technology Advancement Program**
- **Promoting and funding innovative technology for a truly clean tomorrow is essential**
- **Commitment to support demonstration & accelerate CARB verification and commercialization of emerging technologies**
- **Once verified by CARB, new technologies become integral part of CAAP measures**

Efforts Underway

- **Hybrid Yard Tractor**
- **LNG Yard Tractor**
- **Vycon**



**Final 2006
San Pedro Bay Ports Clean Air Action Plan
Technical Report**



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