



Shore Power (Cold-Ironing) Regulation

Maritime Air Quality Technical
Working Group Meeting

September 12, 2006

California Environmental Protection Agency



Air Resources Board

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Topics

- ◆ Introduction
- ◆ Shore Power (Cold-Ironing) Feasibility Report
- ◆ Regulatory Process

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Introduction

- ◆ Who we are
- ◆ What we are working on
- ◆ Why a shore power regulation
- ◆ What's the timetable

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Why Shore Power Regulation

Goods Movement Emission Reduction Plan

- ◆ Approved by Board April 2006
- ◆ Identifies strategies to reduce emissions
- ◆ Goals of shore-based electrical power measure
 - Shore power for 20% of visits by 2010
 - Shore power for 60% of visits by 2015
 - Shore power for 80% of visits by 2020

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Timetable

- ◆ Present Regulation to Board for consideration in November 2007
 - Workshop late summer 2007
 - Proposed regulation and staff report released late September 2007

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- **Shore Power (Cold-Ironing) Feasibility Report**
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Overview

- ◆ Analyzed cost-effectiveness, by ship category and port
- ◆ Draft released March 2006
- ◆ 30-day comment period

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Conclusions

- ◆ Most cost-effective for container, passenger, and refrigerated cargo ships
- ◆ Prime candidate ports: LA, Long Beach, Oakland, San Diego, SF, and Hueneme
- ◆ 2/3 of capital costs & benefits at LA/Long Beach

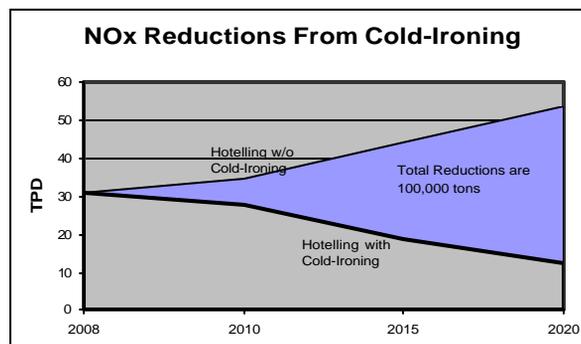
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Conclusions (Continued)

- ◆ Not cost-effective for ships with irregular or infrequent visits to California
- ◆ Will require significant infrastructure investments

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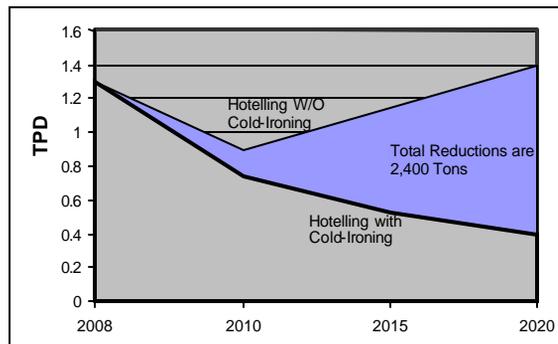
NOx Emission Benefits from Shore Power



* Based on 20%, 60%, and 80% shore power targets

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PM Emission Benefits from Shore Power



* Based on 20%, 60%, and 80% shore power targets

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Comments Received

- ◆ Alternative approaches should be considered
- ◆ Use of generic infrastructure costs are not representative
- ◆ Cost-effectiveness needs to better reflect future growth

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Comments Received (Continued)

- ◆ Need to include public health impacts/benefits
- ◆ Comments on various assumptions
 - Hotelling time
 - Electrical costs

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Public Outreach

- ◆ Public workgroup meetings
 - Periodically thru summer 2007
 - ARB staff will present key information for stakeholder review
- ◆ Stakeholders
 - Districts and CAPCOA
 - Ports
 - Utilities
 - Local community groups
 - Ship owners and operators

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Ship Categories Considered

- ◆ Container ships
- ◆ Passenger ships
- ◆ Refrigerated cargo ships
- ◆ Potentially some bulk ships



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Ports Being Considered

- ◆ Port of Hueneme
- ◆ Port of Long Beach
- ◆ Port of Los Angeles
- ◆ Port of Oakland
- ◆ Port of San Diego
- ◆ Port of San Francisco

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Alternatives to Shore Power

- ◆ Non-shore-power reductions for 2015 and 2020
- ◆ Consider alternatives that can provide equivalent reductions as compared to shore power

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Current Activities

- ◆ Gathering and analyzing data
 - Berthing times for 2003-2005
 - Shore-side infrastructure costs
 - Developing criteria for equivalency to shore power reductions

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Next Steps

- ◆ Staff will contact stakeholders for input and information
- ◆ Shore power workgroup meeting scheduled for January 2007

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- ◆ **Webpages:**

Shore Power:

www.arb.ca.gov/ports/shorepower/shorepower.htm

Goods Movement Emission Reduction Plan:

www.arb.ca.gov/planning/gmerp/gmerp.htm

