Summary

- 37 distinct reduction measures
- At least 33 MMTCO₂E reductions
- ~20% of 2020 reduction target
- Recommending Board approval of staff proposal
Early Action Provisions

- By June 30, 2007 ARB shall publish a list of discrete early action GHG reduction measures and make them enforceable by January 1, 2010.

- Must be feasible, cost-effective, and not result in any backsliding or disproportionate impacts.
### 2007 Early Action Milestones

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 22</td>
<td>1st public workshop</td>
</tr>
<tr>
<td>March 5-7</td>
<td>International symposium</td>
</tr>
<tr>
<td>April 20</td>
<td>ARB draft report released</td>
</tr>
<tr>
<td>April 23</td>
<td>2nd public workshop</td>
</tr>
<tr>
<td>May 21</td>
<td>Hearing notice issued</td>
</tr>
<tr>
<td>June 4</td>
<td>Public comments posted</td>
</tr>
<tr>
<td>June 21</td>
<td>Board hearing</td>
</tr>
</tbody>
</table>
AB 32 Timetable

- Publish list of early actions
- Set 2020 target
- Adopt mandatory reporting rule
- Hire and organize staff
AB 32 Timetable

- 2007
- **2008**
- 2009
- 2010
- 2011
- 2012
- 2020

- Adopt rules to implement early action measures
- Adopt comprehensive scoping plan
AB 32 Timetable

2007  2008  2009  2010  2011  2012  2020

Start implementing scoping plan (rules & market measures)
AB 32 Timetable

- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2020

- Enforce early action measures
- Continue rulemaking on other measures
AB 32 Timetable

2007  2008  2009  2010  2011  2012  2020

Complete adoption of GHG limits and measures
AB 32 Timetable

2007  2008  2009  2010  2011  2012  2020

All GHG limits and measures operative
Reduce GHG emissions to 1990 levels

Post 2020 – identify and implement additional strategies to achieve Governor’s 2050 target
Selection of Early Action Measures

- Examined >100 possibilities
- Not ARB jurisdiction
- Reg and doable by 2010
- Post-2010 regs + non-regs
- Diesel & ozone controls

To CAT
Group 1
Group 2
Group 3
Group 1
Discrete Early Actions
(Rules Enforceable by 2010)

1-1 Low Carbon Fuel Standard
1-2 Restrict High GWP Refrigerants
1-3 Landfill Methane Capture
Discrete Early Action 1-1
Low Carbon Fuel Standard

- Established by Exec Order S-01-07
- Require fuel providers to ensure that fuels sold in CA meet a declining standard for GHG emissions
- 10-20 MMTCO$_2$E reductions by 2020
Discrete Early Action 1-2
Restrict High GWP Refrigerants

- Prohibit recharging of leaky automotive air conditioning systems
- 1-2 MMTCO$_2$E reductions by 2020
Strategy 1-2 (cont.)

Alternative Proposals

- Can deposit & recycling program
- Self-sealing cans to prevent leakage
- Expansion of Smog Check program

Staff recommends: keep on early action list, leave final form of rule open pending further evaluation
Discrete Early Action 1-3
Landfill Methane Capture

- Statewide standards for municipal landfills
- Improve efficiency and emissions control
- Staff collaborating with CIWMB and APCDs
- 2-4 MMTCO$_2$E in 2020
Group 2 Strategies
Non-Regs & Post 2010 Regs

- 23 measures total
- Organized by Board hearing date
- ~20 MMTCO₂E reductions by 2020
Group 2 Strategies for Board Hearing in 2008

July
- Local Government Protocol
- Forestry Protocol
- Small Business Protocol
- Cool Communities Protocol
- Methane Digester Protocol

Dec
- Smart Way Truck Efficiency
- Port Electrification

Dec
- Group 1 Early Action Measures
- Comprehensive Scoping Plan
Group 2 Strategies for Board Hearing in 2009

March  Cool Paints for Automobiles
July   PFC Controls for Semiconductors
July   MDV Exhaust Standards
Dec    Tire Inflation Program
All yr Begin Plan Implementation
### Group 2 Strategies for Board Hearing in 2010

<table>
<thead>
<tr>
<th>Month</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec</td>
<td>Commercial Refrigeration</td>
</tr>
<tr>
<td>Dec</td>
<td>Oil &amp; Gas Vents/Leaks</td>
</tr>
<tr>
<td>Dec</td>
<td>HFC Release During MV Service</td>
</tr>
<tr>
<td>Dec</td>
<td>Alternate Refrigerants for MVs</td>
</tr>
</tbody>
</table>

**All yr** Continue Plan Implementation
Group 2 Strategies for Board Hearing in 2011

Dec  Foam HFC Emissions
Dec  Alt Fire Suppression Chemicals

All yr  Complete Plan Implementation
Group 2 Strategies for Board Hearing in 2012

Dec   Pavley MV Regs, next phase

Jan 1   All Major GHG Rules and Market Measures Operative
Group 2 Strategies for which a Hearing Date is Yet to be Set

Stationary Agricultural Engines
Sulfur Hexafluoride Use
Update TRU Regulation
Truck Stop Electrification
Smog Check Leak Test/Repair
<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>Off-road Mobile Sources</td>
</tr>
<tr>
<td></td>
<td>Port Trucks</td>
</tr>
<tr>
<td></td>
<td>Vessel Speed Reduction</td>
</tr>
<tr>
<td></td>
<td>Off-Cycle Driving Conditions</td>
</tr>
<tr>
<td></td>
<td>Commercial Harbor Craft</td>
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<tr>
<td></td>
<td>Above Ground Gas Tanks</td>
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<tr>
<td>2008</td>
<td>On-road Trucks</td>
</tr>
<tr>
<td></td>
<td>Vessel Main Engines</td>
</tr>
<tr>
<td></td>
<td>Portable Outboard Marine Tanks</td>
</tr>
<tr>
<td></td>
<td>Gas Dispenser Hose Replacement</td>
</tr>
<tr>
<td>2009</td>
<td>Offroad Mobile (agricultural)</td>
</tr>
</tbody>
</table>
ARB 2020 Emission Reductions
A Significant Fraction of the 2020 Target

(AT LEAST 63 of 174 MMTCO$_2$E)

- **Adopted Strategies** (AB 1493, SIP)
- **Group 1 Strategies** (3 discrete early actions)
- **Group 2 Strategies** (23 add'l early actions)
- **Remaining Reductions** (scoping plan, CAT)
Issue #1
ARB Should Do Much More

- EJ Committee proposed 34 measures
- Environmental groups seeking 3 more
- Press, legislature say “it’s not enough”
Issue #2
Cost-Effectiveness Not Defined

- Not okay to presume cost-effectiveness
- Should cap potential expenditures
Issue #3
Proposed Rules not Cost-Effective

- HFC can rule too costly
- Low carbon fuel standard too costly
Issue #4
Environmental Justice

- Proposed HFC can rule regressive
- Proposed LCFS not sustainable
Staff Recommendation

- Approve early action measures (Groups 1, 2 and 3)
- Direct staff to develop regulations by applicable deadlines (per statute and as self imposed)
Next Steps

- Workshops on individual rulemakings
- Completion of non-regulatory protocols
- Status reports to Board every 6 months