

# California Air Resources Board



**Air Resources Board (ARB)  
Tire Pressure Regulation to  
Reduce Climate Change Emissions**

**Public Workgroup Meeting  
March 18, 2008**

Air Resources Board



California Environmental Protection Agency

## Agenda

- Introductions
- Background
- Tire Pressure Program
  - Regulation Concepts
  - Outreach
- Issues
- Timeline
- Action Items and Future Meetings

## Background

- Global Warming Solutions Act (AB32)
- Reduce GHG to 1990 levels by 2020
- 44 Strategies
  - Discrete Early Action
  - Early Action
- 42MMT CO2 Reduced by 2020

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## Background (cont'd)

- California Inspection and Maintenance Review Committee (IMRC)
- National Highway Traffic Safety Administration (NHTSA)



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## Background (cont'd)

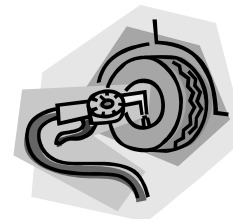
- TREAD Act
- Tire Pressure Monitoring Systems
  - Indirect Systems
  - Direct Systems
- Meetings with Industry



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## Tire Pressure Program Strategy

- Regulation
  - Tire Check and Inflation
  - Inflation Pressure Retention
- Outreach
  - Education
  - Technology



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# Tire Pressure Program Regulatory Proposal (Inform – Check – Inflate)

- Inform
- Check
- Inflate



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# Tire Pressure Program Emissions Savings & Calculation Variables

- Tires lose ~ 1 psi per month
- A 1 psi decrease in tire pressure = ~ 0.34% decrease in fuel efficiency
- 74% of vehicles have at least one underinflated tire
  - 27% have a tire that is on average 6.8 psi low
- Smog Check-ID Vehicles
  - 9.3 Million (45%)
- Gallons of Gas Used
  - 2010 - 13.8 billion
  - 2020 - 15.7 billion



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## Tire Pressure Program Calculation Methodology

- 45% of cars will be serviced at smog check facilities each year
- Of these vehicles, 74% are not properly inflated
  - 47% are ~1 psi underinflated
  - 27% are ~ 6.8 psi severely underinflated
- Californians would save an ~ 47.9 million gallons of fuel if tires were properly inflated



## Tire Pressure Program Emissions Savings

- Potentially Savings:
  - 2010 – 0.42 MMT CO<sub>2</sub>  
47.9 million gallons of fuel
  - 2020 - 0.15 MMT CO<sub>2</sub>  
17.5 million gallons of fuel



## Inflation Pressure Retention (IPR)

- Tire IPR Loss
  - IPR rates estimate the amount of pressure lost over time
  
- Tire IPR
  - 41% of tires have an IPR loss rate greater than 2.5%
  - California does not currently have a IPR standard in place

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## Inflation Pressure Retention (IPR)

- Based on the ExxonMobil Chemical data the potential savings for California with a IPR standard of 2.5% saves 38 Million Gallons of fuel and reduces CO2 emissions by 0.32 MMT.

Tire IPR Loss/Month	Tires Affected	Rolling Resistance Increase	Potential Gasoline Savings	Potential CO2 Emission Reductions
1.5%	94%	1.9%	70 Mgal	0.59 MMT CO <sub>2</sub>
2.0%	79%	3.3%	61 Mgal	0.51 MMT CO <sub>2</sub>
2.5%	41%	4.0%	38 Mgal	0.32 MMT CO <sub>2</sub>
3.0%	15%	4.7%	16 Mgal	0.13 MMT CO <sub>2</sub>
3.5%	4%	5.4%	5 Mgal	0.04 MMT CO <sub>2</sub>

ExxonMobil Chemical Presentation: INFLATION PRESSURE RETENTION EFFECTS ON TIRE ROLLING RESISTANCE AND VEHICLE FUEL ECONOMY/February 2008

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## Outreach

- Education
- Monthly email
- Tire Safety Week
- Gas Station Placards
- Fliers and Brochures
  - BAR Newsletter
  - Flex Your Power
- Association Newsletters



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## Outreach Technology

- Valve Stems CAPS
- Aftermarket TPMS
- Nitrogen Filled Tires
- Fuel Efficient Tires Program



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## Issues

- Vehicle Placard
- Liability
- High Performance Tires



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## Regulatory Timeline

- Research – Ongoing
- Outreach with Stakeholders – Ongoing
- Public Meetings – Workshop
- Regulation Development Workgroups – Ongoing
- Staff Report Including Draft Regulation –
- Board Consideration – 2009

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# Questions / Comments



## Action Items Future Meetings/Contact Info

- Action Items
- Future Public Workgroup Meeting:
- Contact Information:  
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