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## Low Carbon Fuel Standard



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## Low Carbon Fuel Standard

- Reduce average carbon intensity of fuels over time
- Avoid picking winners
- Flexible implementation


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## How does a Low Carbon Fuel Standard work?

- Set baseline standard equal to carbon intensity of 2010 gasoline and diesel
- Providers of fuels must achieve standard, averaged across all fuel they sell
- 10 percent reduction from 2010 to 2022
- Required reductions are gradual at first, weighted toward later compliance years

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## California's Calculation of Fuel Lifecycle Emissions – Example #1 Gasoline

7 g/MJ Oil Well → 1 g/MJ Transportation → 14 g/MJ Refinery → 1 g/MJ Transportation → 73 g/MJ Vehicle

**Gasoline 96 g/MJ**

Source: California Air Resources Board estimates for California fuels

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## California's Calculation of Fuel Lifecycle Emissions – Example #2 Corn Ethanol

36 g/MJ Corn Field → 2 g/MJ Transportation → 38 g/MJ Bio-Refinery → 3 g/MJ Transportation → 0 g/MJ Vehicle


Land Use Change: 30 g/MJ

Co-products: -12 g/MJ

**Corn Ethanol 97 g/MJ**

Source: California Air Resources Board estimates for California fuels


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## Impact on Fuels

- Increase use of:
  - Low carbon corn or sugarcane ethanol
  - Cellulosic ethanol
  - Renewable diesel and biodiesel
  - Electricity, hydrogen and natural gas
- Decrease the use of:
  - Petroleum
  - High carbon biofuels

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### Process


- **Advisory Committee**
  - 29 members
  - 19 key policy issues
  - Discussion papers available on web prior to meeting
  - Report to legislature and draft rule in December 2010
- **Carbon Intensity Workshop: May 27<sup>th</sup>**

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For more information, please visit Oregon DEQ's website:  
[www.oregon.gov/DEQ/](http://www.oregon.gov/DEQ/)


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### Key Policy Issues

- Exemptions and deferrals: fuel price
- Covered Fuels
- Exemptions
- Oregon's approach to lifecycle analysis and calculating carbon intensities
- Economic analysis
- Regulated and Opt-In parties
- Credits and Deficits, including Trading


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### Key Policy Issues

- Compliance scenarios/feasibility
- Storage and distribution of low carbon fuels
- Fuel supply deferrals
- Indirect land use change
- Implementation (reporting, flexibility)
- Process for establishing new fuel pathways
- Phase-in schedule for implementation
- Public health and environmental impacts
- Effect of sunset

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### Low Carbon Fuel Advisory Committee

**Fuel providers and distributors:**

- PacifiCorp
- American Hydrogen Association Northwest
- SeQuential Biofuels
- Western States Petroleum Association
- Northwest Gas Association
- Canby Utility
- Oregon Petroleum Association
- Pacific Ethanol
- ZeaChem Inc.

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### Low Carbon Fuel Advisory Committee

**Fuel Users:**

- AAA
- Farm Bureau
- Port of Portland
- Associated General Contractors
- Portland and Western Railroad
- Oregon Trucking Association
- Lane County Department of Public Works
- Tidewater Barge Lines
- Association of Oregon Counties



### Low Carbon Fuel Advisory Committee

**Environmental Groups:**

- Northwest Environmental Business Council
- Environment Oregon
- Oregon Environmental Council



### Low Carbon Fuel Advisory Committee

**Other:**

- OSU Professor
- Citizen
- Mitsubishi Motors R&D of America
- Ecumenical Ministries of Oregon
- Good Company
- Oregon Business Association
- Labor Union – IBEW