



# AB 118 Funding Recommendations

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## Opportunities and Priorities

- Achieve 2020 Transportation Fair Share Greenhouse Gas Emission Reductions – Projections from Plausible Scenarios.
- Increase California Economic Development Opportunities – Locate Facilities in California.
- Fund Practical Near Term Opportunities That Offer Pathway to Future 2050 Priorities
- Identify Government Roles (And Investment Amounts) That Can Make a Difference



## How Recommendations Were Developed

- AB 118/AB 109 Direction and Eligibility
  - Vehicles and Components
  - Fuel Infrastructure
  - Fuel Production
  - Manufacturing Incentives
  - Workforce Training
- Emphasis on Deployment, but Eligibility for Research, Development, and Demonstration



## How Recommendations Were Developed

- GAP Analysis
  - Government and Private Sector Investment
  - Relevance of Other Funding to California
  - Coordination with ARB
- Informal Discussions – Approximately 100 Meetings
  - Federal, State, and Local Governments
  - Fuel Producers, Terminal Operators, and Fueling Infrastructure Owners
  - Fleet Managers/Operators
  - Automakers, Engine and Truck Manufacturers, and Upfitters
  - Utilities
  - Public Interest Organizations and Consumer Groups
  - Universities



## Electric Drive

### **Action (Light-, Medium- and Heavy-Duty Vehicles)**

- Support pre-commercial, demonstration and deployment of electric drive technologies, including upfit/retrofit applications for PHEV and BEV.

### **Rationale**

- Offer incentives (rebates) in coordination with ARB to help offset differential costs for deployment of low GHG emission vehicles (OEM and ARB certified retrofits) and possibly components.
- Co-fund niche market demonstrations and differential costs of low GHG MDV and HDV applications.



## Electric Drive

### Action

- Support development of public access electric charge stations.
- Support non-road demonstrations and deployment, including TSE, TRU, cold ironing, forklifts, harbor craft, locomotive, etc.

### Rationale

- Co-fund early adopter network of public access charging to support expected roll out of low GHG emission vehicles (OEM and retrofit).
- Coordinate with ARB to co-fund early action and surplus options to show proof of concept and/or accelerate market deployment, possibly through loans.



# Hydrogen

## Action

- Support high-volume fleet and retail fueling stations.
- Support mixed-use hydrogen fueling stations for transit, H/CNG and Hythane fuels and other applications (forklifts).

## Rationale

- Co-fund fueling network to support early adopter vehicles and accelerate increased hydrogen fuel through multiple uses to maximize low GHG emissions.



# Hydrogen

## Action

- Support low cost development of renewable sources of hydrogen.
- Support demonstrations of low cost tank designs and components for fueling station storage and evaluate fuel cells in transportation niche applications.

## Rationale

- Co-fund development of projects to produce low GHG emission feedstocks and meet 33 percent renewable requirement (SB 1505).
- Co-fund development of technology to reduce component cost and accelerate development of multiple low GHG emission options.



## Biofuels

### Action

- Support development of in-state biofuel production facilities, including projects that enhance transition of imported corn to low GHG California feedstocks and develop waste residues, biomethane, biogas, biodiesel/renewable diesel and purpose grown crop sources.

### Rationale

- Co-fund development of California projects to develop low GHG emission fuels, reduce reliance on imported fuels and stimulate California economic benefits. Explore loan financing for some options.



## Biofuels

### Action

- Support expansion of E-85 fueling stations.
- Support biodiesel/renewable diesel fuel storage/blending terminals.

### Rationale

- Co-fund development of fueling station network to support availability of OEM flexible fuel vehicles and accelerate achieving low GHG emissions.
- Co-fund projects to maximize early GHG emission reductions in MDV and HDV markets. Explore loan guarantees.



## Natural Gas and Propane

### Action

- Support deployment of OEM and retrofit LDV, MDV, and HDV in early adopter markets.
- Support the development of MDV and HDV engine and fueling and storage technologies.

### Rationale

- Offer incentives (rebates) in coordination with ARB to offset differential vehicle costs.
- Co-fund development of low GHG emission technology to increase options for transition and merging with improved efficiency.



## Natural Gas and Propane

### Action

- Support development and retrofit of existing fueling infrastructure.

### Rationale

- Co-fund fueling station projects to support growth in low GHG emission vehicle availability and expansion of fleets and other buyers. Explore loans and loan guarantee financing options.



## Vehicle and Engine Efficiency

### Action

- Develop and demonstrate LDV, MDV, and HDV engine design and components, hydraulic hybrid, and electric hybridization with diesel engines and alternative fuel engines.

### Rationale

- Co-fund vehicle and component development to increase GHG emission reductions in multiple types of engine fuels and market niche applications.



## Non GHG Reduction Categories

### Action

- Support workforce training initiatives with employers, manufacturers, training programs, and government agencies.
- Support development of sustainability best management practices, standards, verification programs, and technical research.

### Rationale

- Emerging industry and new to market vehicle and fuel options require transition funding to meet industry and consumer needs.
- Full fuel cycle analysis and measurement requires independent methods to verify GHG emission reduction results.



## Non GHG Reduction Categories

### Action

- Support development of standards and certification for fuels and vehicles.
- Support public outreach and education programs.

### Rationale

- Co-fund development of government standards, guidelines and certification tests to enhance statewide transition to alternative fuel and vehicle options.
- Co-fund programs to provide independent information source and increase awareness of low GHG transportation options.



## GHG Reduction Categories

### **Action**

- Support updates to FFCA, market, fuel and technology assessments, financing mechanisms, reporting metrics, and program effectiveness.

### **Rationale**

- Fund fundamental analysis and program activities to stay current and influence future funding decisions to reflect market changes, research insights, and financing trends.



# Manufacturing and Production Incentives

## **Actions**

- Support development of equipment manufacturing facilities located in California.

## **Rationale**

- Provide incentives in conjunction with other state and local business retention, expansion and recruitment programs to accelerate in-state use of low GHG emission fuels and vehicles. Explore tax exemptions, loans and loan guarantees for some options.



## Funding Recommendation Conclusions

- Reflect analysis reflecting GHG emission reduction potential and practical, near term market, technology and financing factors.
- Reward early adopters that maximize GHG emission reductions at earliest timeframes to meet 2020 goals and transition to 2050 vision.
- Flexible to shift as demand and market growth justifies optional funding allocations.