

# DOCKET

08-ALT-1

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## Project Concept Survey 08-ALT-1 for AB 118

**Describe the concept; identify specific goals, technology and the plan to bring the project to completion.**

California's Alternative and Renewable Fuel and Vehicle Technology Program will significantly impact the lives of our state's citizens. While engineers, scientists, and environmentalists who are already committed to the cause will lead the development of alternative energy and fuel technologies, the impact of the Program will be maximized only with the support of the state's 36 million citizens. The key to building a broad base of public support is through educational outreach. For citizens of the State of California to commit to new fuel and sustainability practices, they need to both recognize problems we collectively face and understand the possible solutions. To develop these understandings, a basic knowledge of the principles of energy, engineering, and environmental science is required.

One way to create an informed population is to educate our youngest citizens – our children. Currently there are no science content standards that directly address alternative fuels and energy, and as a result, the topic is not adequately addressed in classroom textbooks, nor is it part of typical instruction in elementary or secondary classrooms. To address this gap, we propose developing grade-specific lessons for each grade from K-12, for a total of 130 lessons. These lessons would introduce scientific concepts related to alternative fuels and energy including natural resources, renewable and non-renewable energy, through a combination of teacher-directed and student-directed (project based) learning. To make these supplemental lessons relevant to teachers and students and easy to use, we would link lessons to corresponding chapters in state-adopted textbooks at each grade level. Because 25% of students in California are ESL/ELL, the lessons would have components for ELL/ESL learners, and because 25% of parents of California students did not graduate from high school, the lessons would have a parental education component.

**Describe the funding needs, term of the funding, amount of state and other sources needed. Describe the funding needed per-widget (if appropriate).**

Development costs of \$250,000 for research and development of lessons, website design and production, program marketing, and two years worth of implementation and moderation of online student-centered learning community.

**Describe the expected results, in terms of gasoline or diesel fuel displaced, and greenhouse gas emission reductions, or other appropriate metric**

Expected results of the proposed educational outreach program cannot be quantified according to established metrics. However, the expected results can be described in a general sense:

- an informed and mobilized public that is both capable and willing to solve our energy problems both at the present time and in the future; and
- a cadre of students with long-term dedication to energy conservation and resources.

**Describe how this project idea would be compatible with sustainability goals and standards. Summarize the environmental data you have (and or provide links to any related references) assembled to meet the sustainability goal standards**

This curriculum project idea is compatible with sustainability goals and standards in that it teaches concepts and practices of sustainability to students.

**Please check the below boxes that best characterizes the concept:**

**Project Type**

- Fuel Production
- Fuel Transport/Storage/Blending Facility
- Fuel Infrastructure (Station, Pump, Electric Charging Facility, Fueling System)
- Vehicle Deployment (Fleet, Consumer)
  - Light-Duty
  - Medium-Duty
  - Heavy-Duty
- Vehicle/Engine Technology or Components
- Performance Test/ Protocol Development
- Workforce Training, Public Outreach, Education
- California Manufacturing Plant
- Other \_\_\_\_\_

**Fuel/Technology**

- Electric Drive  Plug-in Hybrid EV
  - Batter Electric Vehicle
  - MD/HD Hybrid or Hydraulic Hybrid
  - Non Road Electric
  - Other \_\_\_\_\_
- Natural Gas (CNG, LNG)
- Renewable Diesel/Biodiesel
- Hydrogen
- Ethanol
- Propane
- Vehicle Efficiency
- Other Education on the above topics

**Development Stage**

- Widespread commercial Availability-Consumer Acceptance
- Early Market Deployment/Development
  - Fleets
  - Consumers
  - Fuel Producers
  - Infrastructure owners
  - Manufacturing Plants
- Market Niche Demonstration and Feasibility
- Application Research and Development (Validation Test, Prototype Development)
- Other Available for teachers