

Committee Draft Investment Plan Terrabon Comments 052411.

infrastructure in Northern California. Further allocations for medium- and heavy-duty propane vehicles are discussed in the Medium- and Heavy-Duty Vehicles section of the investment plan.

### *Biofuels*

There is a broad variety of feedstocks available for renewable biofuels. California possesses a significant volume of waste-based feedstocks, which offer a particularly excellent opportunity for expanding the production of low-carbon fuels. The Energy Commission is interested in expanding the use of low-carbon, sustainable feedstocks. Similarly, a variety of fuel conversion processes exists, and the Energy Commission expects to maximize the processes that use abundant, waste-based feedstocks. Within biofuels, the investment plan focuses on three fuel end uses: advanced ethanol, diesel substitutes, and biomethane.

#### Gasoline Substitutes (\$11.5 Million)

Ethanol and other gasoline substitutes that are drop-in fuels offer a significant opportunity for reducing both greenhouse gas emissions and petroleum use. The state's Low Carbon Fuel Standard and *Bioenergy Action Plan* and the federal Renewable Fuel Standard rely heavily on biofuels (including ethanol) to meet their targets. The Energy Commission is providing \$7.5 million to expand in-state production of ethanol and other gasoline substitutes. This funding is intended for the development of new facilities that can use waste-based cellulosic feedstocks to produce a low-carbon fuel.

An additional \$4 million will be provided to expand E85 (85 percent ethanol and 15 percent gasoline) dispensers and retail outlets. Given the relatively modest marginal cost for the purchase of flex-fuel vehicles, the Energy Commission is not proposing vehicle funding for this fuel category.

#### Diesel Substitutes (\$7.5 Million)

Diesel substitutes, such as biodiesel and renewable diesel, similarly offer an immediate opportunity to significantly reduce California's greenhouse gas emissions and petroleum dependence. The same policy drivers that will accelerate ethanol and gasoline substitutes will also accelerate diesel substitutes. To accelerate the in-state production of diesel substitutes, the Energy Commission will provide \$7.5 million to expand and support California's diesel substitute production plants.

#### Biomethane (\$8 Million)

The production and use of in-state biomethane will further advance state policy in the transportation sector. Biomethane, when produced from waste-based resources or byproducts, possesses one of the lowest carbon intensities of any existing fuel. Additionally, biomethane can reduce lifecycle greenhouse gas emissions in a broad variety of fuel pathways, from natural gas to hydrogen to ethanol. Anaerobic digestion of waste-based feedstocks is proving to be a robust and cost-effective technology for creating very-low-carbon transportation fuels that can be

readily incorporated into natural gas vehicles and fueling systems. The annual fuel potential from California's waste-based feedstocks is estimated to be more than 1,750 million diesel gallon-equivalents. For these reasons, the Energy Commission is allocating \$8 million to develop in-state biomethane production for the transportation sector.