



Greening the ORNL Fleet of Vehicles

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Initial Steps



- A small ethanol tank (≈ 300 gallons) was installed on site in 1999.

- ORNL purchased 32 flex-fuel pick-up trucks, sedans, and mini-vans in 1999 and 14 in 2000.
- This represents 100% of all vehicles ordered in these classes.



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Expanded Infrastructure

- New 8,000-gallon E-85 tank installed at ORNL in 2001
- Fleet of 40+ flex-fuel vehicles (pickups, sedans, mini-vans)



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- ORNL became a founding member of the East TN Clean Fuels Coalition
- State of TN established E-85 refueling established in Nashville in 2003



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Rising Momentum

- DOE-Oak Ridge Operations established a refueling station in 2004
- BWXT Y-12, Wackenhut, and ORISE now purchasing E-85 vehicles



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- In 2005, ORNL will have 91 flex-fuel vehicles (~18% of total fleet, 27,400 gallons of E-85 consumed in 2004)
- *Next steps:* East Tennessee corridor of ethanol infrastructure--including a public refueling pump



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ORNL's Commitment

- ORNL is leading by example--by meeting the Executive Order 13149 goals in 2005 and continuing to green its fleet.
- ORNL's 25-year history of biofuels feedstock research and collaborations with NREL on conversion technologies has benefited the nation.
- ORNL's materials science, fuels, combustion, and emissions research is also contributing.
- Ethanol is less polluting than gasoline, it is locally produced, it could revitalize the farm economy, and it contributes very little to global warming.
- However, more work is needed to reduce ethanol costs, improve performance, and cut emissions.

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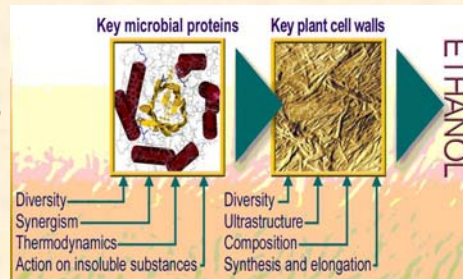


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One Vision: Cellulosic Ethanol Could Fuel Half of the U.S. Passenger Fleet

Biological sciences are crucial:

- Plant architecture and composition must be tailored to maximize feedstock production
- "Protein machines" are needed to dismantle plant cell walls to improve conversion to fuels



Double Biomass
Production to
10 tons/acre

Improve
Conversion
Efficiencies

Double Fleet
Fuel
Efficiency

Currently idle land could
fuel half of the
U.S. Passenger Fleet

30 Million Acres

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