

Figure 27

Bio-based Energy: Pros and Cons

Purported Benefits	Challenges
Strengthens national security by displacing foreign oil. As oil supplies contract, a transition beyond a petroleum-based economy is necessary.	Replacing 8 percent of the U.S. gas consumption required 36 million acres of corn in 2010. Improving fuel efficiency standards by 1.1 MPG would have done the same.
Helps in the transition to new generations of more efficient types of biofuels, such as cellulosic ethanol.	After many years and billions of dollars in government and industry supports, there still are no commercially viable cellulosic ethanol plants on line.
Could eventually shift away from corn-based agriculture to perennial crops like switch grass, miscanthus, perennial sorghum and others that have less impact.	Challenges still remain in terms of crop storage and transport, prices required to make farming profitable, and the agricultural impacts of next-generation fuel crops.
Reduces greenhouse gas (GHG) emissions.	Studies show that ethanol from Brazil has lower GHG emissions than U.S. corn-based ethanol. Currently, tariffs prevent the import of foreign ethanol.
Becomes an economic engine for rural development.	Almost 80 percent of ethanol plants are now absentee-owned operations that have profited mightily from state and federal supports.
Helps with future development of crop "residues" such as straw, stalks, and other by-products for primary fuel source.	The use of bio-fuels to produce energy that charges batteries may be far more practical than running cars with liquid biofuels.
Biotechnology can overcome obstacles with specifically designed energy crops, innovative enzymes, and other breakthroughs.	Biotechnology's impacts include uncontrollable cross-pollination, the creation of resistant weeds and organisms, human health allergies, and concentration of wealth and seed supply.
Biofuels are just part of a larger integrated future energy strategy.	It takes 2/3 of a gallon of fossil fuel to make 1 gallon of corn ethanol. This diverts us from the real need for energy conservation and fuel reduction.
Provides farmers with new markets and opportunities for farmer-owned multinational cooperatives.	There are far more effective ways to compensate farmers fairly than to support an industry now dominated by large corporations.
Ethanol is a clean-burning fuel.	Making ethanol with coal power emits more GHGs than gasoline. Making ethanol with natural gas and biomass power has less emissions than gas.