

Atlantic Biomass, LLC.



Disappearing Non-Renewable Carbon User Fee

Robert Kozak

President, Atlantic Biomass

***Treasurer, Advanced Biofuels
USA***

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How Will a "Disappearing" Non-Renewable Carbon User-Fee Work?

- Only direct R&D and project implementation will be funded.
- **Performance**, not technology selection, will be used to establish goals.
- No “credits” or “dividends” will be created.
- Higher prices will be used to decrease non-renewable fuel use.
- Focuses on immediate, low-cost reductions of GHGs without negative environmental economic effects.
- End when non-renewable carbon fees are no longer collected – Success Has Been Achieved!

Annual Non-Renewable Carbon Fuel User Fee

12,000 miles @ 27mpg = 440 gallon/year

		\$50/Ton Non-Renewable Carbon		\$75/Ton Non-Renewable Carbon		\$100/Ton Non-Renewable Carbon
0% Renewable Fuel Fee/Gallon		\$ 0.13		\$ 0.19		\$ 0.25
Annual User Fee		\$ 57.20		\$ 83.60		\$ 110.00
10% Renewable Current E10 Fuel Fee/Gallon		\$ 0.11		\$ 0.16		\$ 0.21
Annual User Fee		\$ 48.40		\$ 70.40		\$ 92.40
30% Renewable Proposed Tier 3 Fuel Fee/Gallon		\$ 0.08		\$ 0.13		\$ 0.17
Annual User Fee		\$ 35.20		\$ 57.20		\$ 74.80
85% Renewable E85 Fuel Fee/Gallon		\$ 0.02		\$ 0.03		\$ 0.04
Annual User Fee		\$ 8.80		\$ 13.20		\$ 17.60

Projected Non-Renewable Carbon User Fees from US Motor Vehicles

Potential Fee Revenue	\$50/Ton Non-Renewable Carbon		\$75/Ton Non-Renewable Carbon		\$100/Ton Non-Renewable Carbon
Year 1	\$4.8 Billion		\$7.2 Billion		\$9.6 Billion
End Year R85 Fuel & 35% Mileage Increase	\$535 Million		\$803 Million		\$1.07 Billion

What Should “Disappearing” Non-Renewable Carbon User-Fees Be Used For?

Option 1

Reduce Green House Gas Emissions (GHGs) as quickly as possible?

Option 2

Increase stock value of electric vehicle companies?

Realities of Reducing US Motor Vehicle GHGs

(US DOT Numbers)

US Vehicles Registered 2020	276,000,000
2020 Vehicle Sales	14,500,000
Sales as % of Fleet	5.3%
Years to Replace Fleet	19

US has Two-Tier Vehicle Fleet

US DOT Statistics

Average age of household vehicles for several years ^a				
	Automobile	Van	Sport utility	Pickup
1969	5.1	U	U	U
1977	5.5	6.4	U	7.3
1983	7.2	8.5	U	8.5
1990	7.6	5.9	U	8.4
1995	8.2	6.7	6.6	9.7
2001	9.0	7.6	6.4	10.1
2009	9.5	8.7	7.1	11.2
2017	10.1	10.7	8.3	13.1

Why US Has Two-Tier Vehicle Fleet

- Average price of New US Vehicle 1977: **\$5,813**
- Average price of New US Vehicle 1996: **\$18,993**
- Average price of New US Vehicle 2020: **\$40,179**
- Change in “Real Value” of US salaries since 1978: **0 Percent** (Pew Research Center 2018)

Is it Possible to Reduce CO₂ Emissions from Older Vehicles?

Can it be Cost-Effective?



New Electric Vehicle

CO₂ Reduction: 200 g/mi

Cost: \$43,000



High% Biofuel Retrofit

CO₂ Reduction: 150 g/mi

Cost: \$700 (parts & labor)

Cost Effectiveness Performance of E85 Retrofit v. Electric Vehicle Purchase

(Life Cycle Emission Values from EPA)

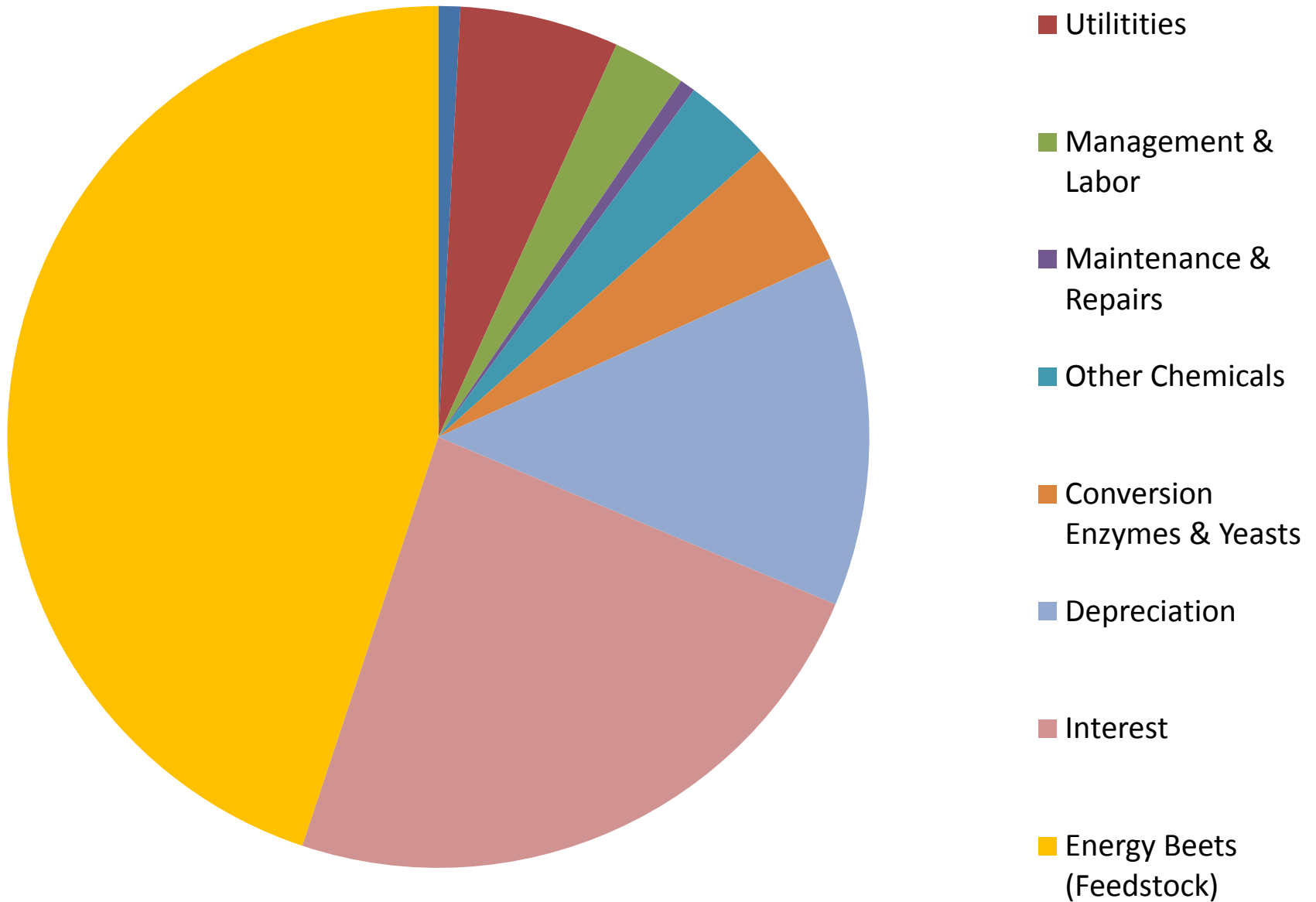
	CO ₂ g/mi	Cost
E10 Gasoline	410	
2002 Focus E85 Retrofit	260	\$ 700
% CO ₂ Reduction	36.6%	
\$/ 1 percent CO ₂ reduction	\$ 17.50	
Ford Mustang Mach E	210	\$ 43,000
% CO ₂ Reduction	48.8%	
\$/ 1 percent CO ₂ reduction	\$ 877.55	

	E85 Retrofit	Ford Mach E
Vehicles/Year/\$4 Billion	5,714,286	93,023
Annual CO ₂ Tons Reduced @ 10,000 miles/yr	9,428,000	204,000

Specific “Disappearing” Fee Uses

- Reduce biomass input costs.
- Reduce biofuel production costs.
- Fund “Climb the Ladder” bioproduct development.
- Certify retrofits, train mechanics to retrofit, establish retrofit centers.

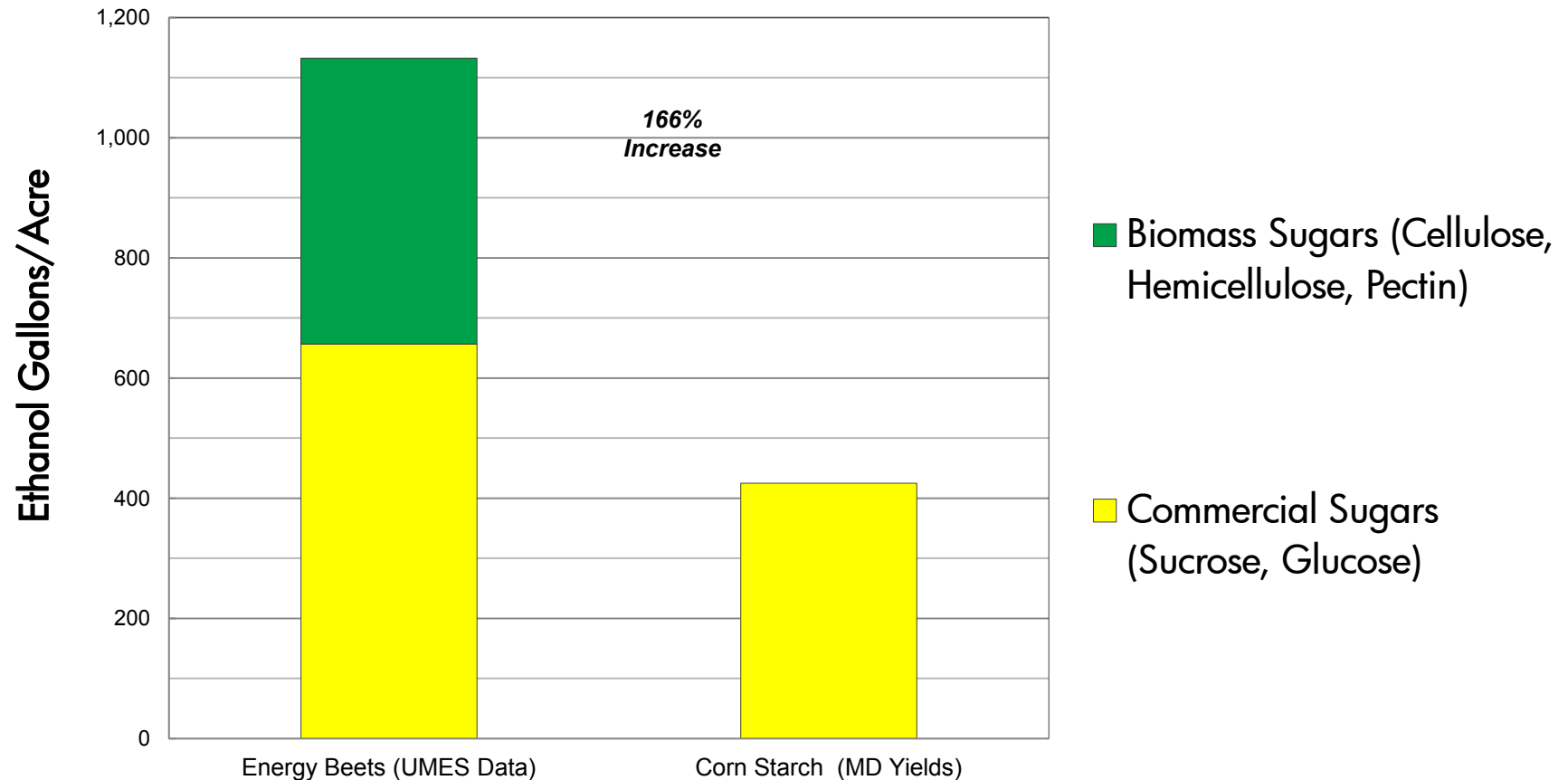
Ethanol Production Costs



Biomass Cost Reduction Goals

- Commercialize biofuel crops that increase per acre yields and farmer income.
- Utilize low-cost/non-cost biomass residuals as feedstocks.
- Reduce nutrient inputs.
- Produce animal feed by-product from residual biomass.
- Create viable biomass/biofuel economies in minority/low-income farm communities.

Potential Ethanol Production Energy Beets vs Corn Starch



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MEI² 2020 ENERGY INNOVATION SEED GRANT: Utilizing Industrial Hemp Biomass for High Throughput Biofuel Production in Maryland



Biofuel Production Cost Reduction Goals

- Increase R&D funding to improve yields.
- Utilize structural polysacharides; pectin, cellulose, hemicelluloses.
- Develop new Inexpensive enzyme processes.
- Simplify hardware.
- Use “Disappearing” fees for prototype development.

Retrofit System Goals

- Work with manufacturers, community colleges, and NIASE to create training and certification programs.
- Use vehicle I/M emission mechanic training as model.
- Work with community colleges and community groups to establish community-based retrofit centers and education programs.
- Expand availability of high biofuel percentage content fuels.

Climb the Ladder Product Research

- Develop more profitable products
- Jetfuel production
- Use ethanol as feedstock
- Use enzyme process for producing recyclable plastics

How do We Make the “Disappearing Fee” a Reality?

- Use existing legislation – add only designated funding clause
- Use Reconciliation (51 vote) legislative technique

§7404. (Clean Air Act Section 104) Research relating to fuels and vehicles

(a) Research programs; grants; contracts; pilot and demonstration plants; byproducts research

The Administrator shall give special emphasis to research and development into new and improved methods, having industry-wide application, for the prevention and control of air pollution resulting from the combustion of fuels. In furtherance of such research and development he shall—

- (1) conduct and accelerate research programs directed toward development of improved, cost-effective techniques for—
 - (A) control of combustion byproducts of fuels,
 - (B) removal of potential air pollutants from fuels prior to combustion,
 - (C) control of emissions from the evaporation of fuels,
 - (D) improving the efficiency of fuels combustion so as to decrease atmospheric emissions, and
 - (E) producing synthetic or new fuels which, when used, result in decreased atmospheric emissions.^{[1](#)}


§7404. (Clean Air Act Section 104) Research relating to fuels and vehicles

- (2) provide for Federal grants to public or nonprofit agencies, institutions, and organizations and to individuals, and contracts with public or private agencies, institutions, or persons, for payment of
 - (A) part of the cost of acquiring, constructing, or otherwise securing for research and development purposes, new or improved devices or methods having industrywide application of preventing or controlling discharges into the air of various types of pollutants;
 - (B) part of the cost of programs to develop low emission alternatives to the present internal combustion engine;
 - (C) the cost to purchase vehicles and vehicle engines, or portions thereof, for research, development, and testing purposes; and
 - (D) (D) carrying out the other provisions of this section, without regard to section 3324(a) and (b) of title 31 and section 6101 of title 41:

Disappearing Non-Renewable Carbon User Fee: Proposed Legislation

- (3) A designated fund for grants issued under 7404 (a) (2) used specifically for the reduction of CO₂ emissions from motor vehicles, shall be established.
- (A) Monies for this designated fund shall come from a user's fee on the portion of fuel used in vehicles that does not come from a renewable source. Fuels shall include, but not be limited to liquid, gas, and electric. Existing state and municipal collection services currently collecting Highway User fees shall be utilized when possible.
- (B) The Administrator shall establish the non-renewable user fee. Other Secretary's that establish values related to Green House Gas (GHG) emissions shall work in consultation with the Administrator in setting the fee.
- (C) The fee shall be discontinued when the annual revenues from the fee fall below \$100 Million (2021 USD).

Atlantic Biomass, LLC.



Many Thanks

Bob Kozak

President

Atlanticbiomass@aol.com