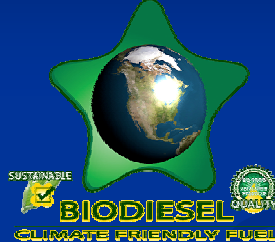


“Carbon Challenge”

www.CO₂ STAR.org



*Inspiring Corporations & Individuals to Become
Carbon Neutral Using Labeling & Action Plans*

www.co2star.org

Global Carbon Labeling Effort

- Co2 Star involved in a global effort to establish carbon labeling w/ “Carbon Challenge” initiative
- Program combines labels & intro of low carbon fuels, lubes, tires, vehicles and transport
- Relies on “Carbon Challenge” mechanism to get both corporations & consumers to reduce Co2
- Labels become mechanism to identify low Co2 actions and affect market share, green image, energy costs and shareholders
- Promotion through major sporting events

EU & Carbon Labels

- EU already has carbon labeling requirements for cars and a Low Co2 car promotion in UK
- EU Commission supported Co2 Star Pilot Program to put carbon labels on fuel, lubes & shipping
- Pilot project in Germany to put Co2 label on biodiesel pumps
- Pilot in Netherlands for biodiesel use by trucks and labeling of finished products (tulips to EU)

UK & Carbon Labels

- UK is moving aggressively to track and in the future reward fuels based on Co2 performance
- RTFO tracking requirements for carbon & sustainability are forcing changes in supply chain
- Supermarkets are competing to demonstrate their “green” credentials through various efforts
- Carbon Trust working with UK Govt. to develop a carbon labelling program for consumer products

UK RTFO Impact

- Default value of RTFO requirements are conservative (20% Co2 reduction from rape-biodiesel)
- Onus is on producer to prove the life cycle benefits of oil crop and compete on basis of carbon benefits
- UK producers seeking low carbon sustainable options for meeting biofuel demand that is affecting actions of oil and sugar producers worldwide

Carbon Labels in California

- Co2 Star is proposing to Senator Florez the idea to introduce a bill in 2008-9 for Co2 labels
- Will mirror pilot program in EU with car companies & label fuel, lubes, tires & cars
- Will provide “credits” against mandatory Co2 reductions in new cars
- Will assist in implementation of “Low Carbon Fuel Standard” of CA Air Resources Board

Co2 Star Retail Fuel Network

- Co2 Star has partnered with group involved in purchase of several hundred gas stations in CA
- Stations will have “alternative fuel” island with hydrogen, electric, biodiesel, ethanol & GTL/BTL
- Hydrogen effort tied to major auto companies & state’s hydrogen highway initiative
- Stations will offer zero friction lubes and promote efficiency measures (tires, additives, etc)

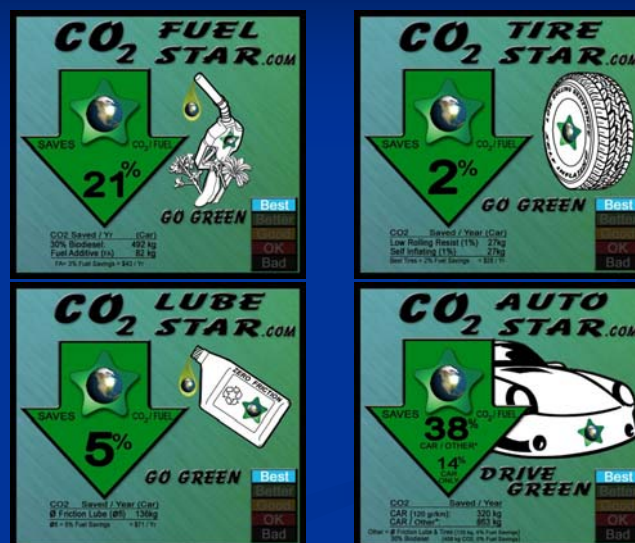
Carbon Labels in Brazil

- Brazil leading world in development of biofuels with low carbon sustainable footprint
- Co2 Star partner w/ Biodiesel Brasil to introduce biodiesel to schools (workshops, oil collect, buses)
- Native oil seed tree planting for competitive sources of oil for biodiesel or alternative fuels
- Approaching Petrobras about program to promote low carbon footprint biodiesel & ethanol in 2008

Integrated Strategy with Car Co's

- Participating in EU Co2 Star Program could help in defining their “green car” strategy
- builds off credits already proposed for “soft measures” such as tires in reaching mandatory Co2 reduction goals in 2012
- Concept is to have car companies promote use of low carbon fuels, lubes & tires using common label

Carbon Labeling Integrated Strategy



Details of Promotion

- Car companies will put a carbon label on vehicle & recommend use of low carbon fuels, lubes & tires
- Results in substantial life cycle carbon reductions that can be “credited” against new car requirements
- Overcomes biggest barrier to biofuel use, support from car companies to overcome warranty barrier
- Similar labels on fuel, lube & tires to encourage use

Proposed Label: Co2 Auto Star



New Car Using B-30 Biodiesel,
zero friction lube, best tires

Proposed Label: Co2 Lube Star



Anti-Friction Treatment in All Lubricants
5-7% Co2 Reduction & Fuel Savings

Proposed Label: Co2 Tire Star

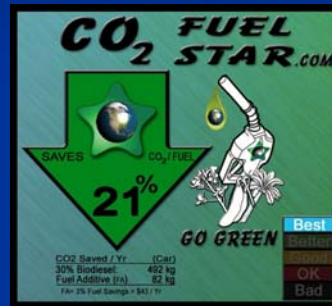


Low Rolling Resistance Tires & Self Inflation Systems
(1-3% fuel savings & Co2 Reduction)

Proposed Label: Co2 Fuel Star (EU)



5% Biodiesel &
Fuel Additive



30% Biodiesel &
Fuel Additive

Low Carbon Biofuels

- Biofuels have very different life cycle Co₂ benefits
- Corn based ethanol has at best 20% Co₂ reduction
- Sugar cane ethanol in Brazil has a 90% Co₂ reduc.
- Soy biodiesel USDA study shows 78% Co₂ reduction but this may not stick in further studies
- Canola/rape biodiesel Co₂ is about 60%
- Palm biodiesel is highly variable but can be very good or very bad depending on how calculated & sustainability standard met

2nd Generation Biofuels & Co2

- Much better Co2 reductions from ethanol if made from cellulosic materials (= to Brazil)
- Co2 reductions from renewable diesel may be higher or lower than biodiesel
- Much better Co2 if fuels moved by pipeline
- Much better Co2 if gasify entire biomass into bio-crude & then convert to Biomass to Liquid
- Opportunities to blend 1st & 2nd generation fuels (BioGTL, BioBTL)

BioGTL & BioBTL



Combining Biodiesel & Gas to Liquid or
Biomass to Liquid Fuel

Sustainability Element Essential

- Biofuels must meet sustainability standards to gain strong consumer acceptance
- Definitions of “sustainability” and importance differ depending on market (EU, US, Japan)
- Sustainability checkmark will be included in Co2 Star fuel label to address issue
- Sustainability standard chosen will be based on any international consensus reached on issue or standards established in each region
- Sustainability effort to save & replant forests

Sustainability Standard

SUSTAINABLE



Sustainability standard will be developed jointly with:

- WBCSD Roundtable on Sustainable Biofuels
- Other global sustainability groups

Native Jungle Sequestration

- Avoiding deforestation of native jungles is major concern due to increase in palm plantations
- Efforts to define sustainability of palm focus now on certification of palm as being planted pre 2005
- This will have little impact on deforestation since most palm oil sold to edible oil markets in China
- Alternative is to get producers to buy logging rights and preserve wild jungle through “offset” effort
- Wild jungle sequesters equal Co₂ as tree planting
- Hectare for hectare “offset” for all palm planted

Sequestration w/ Tree Planting

- Opportunities to provide future oil or feedstock for biofuels can be combined with tree planting
- Sequestration of Co₂ as trees grow & displacement of petroleum from using oil seeds for biodiesel
- Selection of native species can improve biodiversity
- Partnerships with industries seeking Co₂ credits to assist in initial plantation start up
- Partnerships with oil or biodiesel producers seeking to improve “sustainability” with offsets

Carbon Neutral Sports Events

- Co2 Star working with various sports organizations to propose “carbon neutral” sports events
- Discussions with National Football League about 5 year plan to offset Co2 emissions from events
- Discussions with Beijing Olympic Committee about reducing pollution & “greening” Olympics
- Promotion of efforts by sponsors to lower Co2 emissions through their participation in Co2 Star
- Dual promotion of corporations & Co2 Star

Warranties & Biodiesel

- Current auto & engine warranty limit is for B5
- Warranty positions changing rapidly as a result of Renault & PSA supporting use of B-30 in in MY 2008 cars & Brazil test data with injection company participation showing no problems with B-20
- Co2 Star is intended to “push the envelope” of what companies will support using carbon labels

Co2 Star & Low Cost Gasoil

- Co2 Star has teamed up with major petroleum supplier to offer discounted gasoil to market if companies commit to participating in Co2 Fuel Star
- Savings from lower cost of petroleum provide incentive for start up of carbon labeling effort and introduction of biodiesel or 2nd generation biofuels
- Introduction occurring worldwide in conjunction with negotiation of long term supply contracts
- Results in lower carbon fuel at no increase in cost

Co2 Travel Star

- Most relevant program for Malta is “Co2 Travel Star” aimed at promoting low carbon travel
- Approaching major airlines through “Co2 Air Star” to encourage Co2 reductions & offsetting
- Approaching bus, taxi, rental car and shuttle services through separate Co2 Star initiatives
- Aim is to identify travel partners willing to lower Co2 emissions and then refer them to consumers seeking lower carbon travel options

Co2 Truck Star & Shipping Star

- Co2 Star is also initiating program involving major US truck stops, truck & rail companies & companies involved in shipping products
- Labeling planned of truck stop fuel pumps, trucks, rail & shipped products and promotion aimed at certifying shippers as “low carbon”
- Will create demand for use of efficiency measures and biodiesel to reduce transport Co2
- Will augment EPA “Smart Way Transportation”

Low Carbon Shipping & Trucks



Better for the Environment



Co2 Shipping Star

- Numerous companies are likely to want to have “Co2 Shipping Star” designation to keep customers
- Program shows company cares about environment and lowers fuel costs using biofuels & efficiency
- Allows for use of label on finished products
- Numerous benefits from marketing low carbon fuels & lubes to get consumers to go to retail store
- Can be tied in with EPA Smart Way Transportation which has major corporate participation already

Carbon Label for Fuel, Stores, Trucks



“Green” Market Positioning

- Retailers like Wal-Mart recognize “green” market positioning is extremely important to compete with other stores and create customer loyalty
- UK supermarkets promoting who is “greenest”. Starting to market low carbon fuels & lubes
- Through partnerships with key groups (retailers, auto companies, shippers, NGO’s & government) strong interest in low carbon fuel/lube products likely
- “low carbon footprint” will put company in strong position to compete with other “green grocers”

Co2 Transit Star

- Program is targeted at transit companies to get them to use low Co2 biofuels, lubes & tires
- Allows transit companies to lower fuel costs and Co2 footprint from combined measures
- Provides revenue opportunities from sale of advertising promoting other Co2 Star partners
- Reduces emissions from use of biodiesel & fuel and lubricant additives

Co2 Transit Star



Co2 School Star

- Program aimed at school buses in US, CA, UK to increase use of biodiesel & improve efficiency
- Objective is to have buses use biodiesel, efficiency additives, zero friction lubes
- Includes program to educate students about production of veg oil & conversion to biodiesel
- Tie in to any production of oil that also leads to better nutrition (ex: camelina & Omega 3)
- Opportunities for corporate sponsorship

Co2 School Star



Before Biodiesel & additives



After Co2 Star !

High Yield & Native Species

- Key to increasing sustainability of biofuels is to increase yields per hectare, select species carefully and minimize fertilizer & other inputs
- Full utilization of all biomass with BTL processes will also increase total fuel produced
- W. Africa palm yields could increase dramatically
- High oil or sugar yield varieties of traditional crops
- Several new species show great promise including camelina, uricuri, macauba, algae, full cane stalk

Points to Ponder

- A global Co2 Star program offers benefits to governments, industry, consumers & environment
- Promotional benefits to participating companies as a result of ad opportunities at sporting events
- Offset of costs of biofuels through efforts to reduce fuel use, offer gasoil discounts, etc.
- Sustainability essential for biofuels to advance but new approaches needed to really solve problem.
- Malta can benefit from promoting itself as “green” travel destination with help from Co2 Travel Star

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