

ESTABLISHING A BIOFUEL STATION IN SOUTHERN MARIN

1. ABOUT GREEN ENERGY NETWORK

- A. GEN
- B. DAMON KNUTSON
- C. DURRELL KNUTSON
- D. ASSOCIATES

2. ETHANOL PRODUCTION

- A. TRADITIONAL
- B. CELLULOSIC
- C. BIOFUELS ENERGY CORPORATION

3. ETHANOL IN CARS

- A. E10, EX, E85
- B. VEHICLE CONVERSIONS
- C. FLEXTEK

4. ETHANOL STATIONS

- A. THE DEPOT MODEL
- B. ETHANOL FROM A PUMP

5. ESTABLISHING A BIOFUEL STATION IN SOUTHERN MARIN

- A. RESTRICTIONS
- B. FUNDING
- C. TAX CREDITS

6. CONCLUSION

- A. PLANNING
- B. PRODUCTION
- C. VEHICLES
- D. STATIONS

PRODUCED BY DAMON KNUTSON, GREEN ENERGY NETWORK

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ABOUT GREEN ENERGY NETWORK

GREEN ENERGY NETWORK

A COMMUNITY OF PROGRESSIVE INDIVIDUALS DEDICATED TO END THEIR RELIANCE OF PETROLEUM AS THE PRIMARY FUEL FOR TRANSPORTATION. BY PROVIDING ETHANOL FUEL TO THE LOCAL COMMUNITY, GEN HAS BEEN ABLE TO ACCUMULATE REAL-WORLD EXPERIENCE WITH DOZENS OF VEHICLES. EXPERIMENTING WITH BLENDS FROM 10%-95% ALCOHOL UPON "NORMAL" CARS, FFVs, AND FLEXTek CONVERTED VEHICLES ALIKE.

DAMON KNUTSON, CO-OPERATOR OF GEN

DAMON GRADUATED FROM SONOMA STATE UNIVERSITY WITH A BA IN ENVIRONMENTAL STUDIES AND PLANNING AND A PROFESSIONAL CERTIFICATE IN ENERGY MANAGEMENT AND DESIGN. HIS BROAD SKILL-SET HAS BEEN ATTAINED BY WORKING MULTIPLE TRADES OVER THE YEARS. HE'S HAD ALMOST TWO DECADES OF EXPERIENCE IN COMPUTER TECHNOLOGIES AND WEB DEVELOPMENT, FOUR YEARS IN SOLAR ENERGY, AND APPROXIMATELY FIVE YEARS IN THE CONSTRUCTION TRADES. SINCE 2001, DAMON HAS SPENT MUCH OF HIS TIME DEVELOPING A BIOFUELS INFRASTRUCTURE FOR SONOMA COUNTY.

DURRELL KNUTSON, CO-OPERATOR OF GEN

WHILE DURRELL'S CHILDHOOD EXPERIENCES FORMED HIS DEEP APPRECIATION AND DEDICATION TO THE ENVIRONMENT, HIS EDUCATIONAL BACKGROUND AT CAL POLY SAN LUIS OBISPO WITH CITY AND REGIONAL PLANNING FORMED THE BASIS FOR HIS PURSUITS IN ENVIRONMENTAL PLANNING AND SCIENCES. HIS CAREER PATH HAS LED TO WORKING WITH ARCHITECTS, PLANNERS, GOVERNMENT AGENCIES, AND PETROLEUM COMPANIES. DURRELL'S BROAD RANGE OF ENTREPRENEURIAL BUSINESS EXPERIENCE, INCLUDES COMPUTER CONSULTING, REAL ESTATE MARKETING, AND ALTERNATIVE FUEL PROMOTION. MUCH OF HIS SUCCESS RESULTS FROM HAVING CREATIVE IDEAS WITH PRACTICAL APPLICATIONS. EXAMPLES INCLUDE ENVIRONMENTAL COMMUNICATIONS ORGANIZATION (A COMPUTER CONSULTING BUSINESS ASSISTING ENVIRONMENTAL AND SOCIALLY RESPONSIBLE ORGANIZATIONS WITH TECHNOLOGY SOLUTIONS AND MARKETING TOOLS), REALTOUR ONLINE (ONE OF THE FIRST VIRTUAL TOUR SERVICES TO FEATURE 360-DEGREE PANORAMIC PHOTOGRAPHY ONLINE), ARENABID, INC. (REAL ESTATE AUCTION COMPANY THAT DEVELOPED PROPRIETARY SOFTWARE ENABLING SIMULTANEOUS BIDDING IN REAL-TIME BOTH ONLINE AND ONSITE), AND MLS EXPRESS (A SERVICE TO ASSIST HOME SELLERS WITH LOW COST MLS LISTINGS). DURRELL IS DEDICATED TO APPLYING ALL HIS EXPERIENCE AND EFFORT TOWARDS GENERATING CREATIVE ALTERNATIVE FUEL SOLUTIONS.

KEY ASSOCIATE RELATIONSHIPS

LAGUNA FARM & BIOFUELS RESEARCH COOPERATIVE (SEBASTOPOL)
BIOFUELS CO-OP (NEVADA CITY)
NORTH BAY ELECTRIC AUTO ASSOCIATION
SONOMA COUNTY BIODIESEL CO-OP
SKYMETRICS
ROYAL PETROLEUM (SANTA ROSA)
DARYL HANNAH
NATIONAL ETHANOL VEHICLE COALITION (NEVC)
BIOFUEL ENERGY CORPORATION (TEXAS)
RENEWABLE ENERGY PARTNERS
MICHAEL BOCH & LORI GRACE ☺



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ETHANOL PRODUCTION

CORN BASED ETHANOL

MOST OF THE ETHANOL IN THE U.S. COMES FROM STATES IN THE MIDWEST WHERE CORN IS GROWN IN VAST FIELDS. IN THIS PROCESS THE KERNELS ARE REMOVED AND CRUSHED IN A MILL. WATER, ENZYMES AND YEAST IS ADDED FOR FERMENTATION TO TAKE PLACE. THEN THE RESULTING MASH IS PUT INTO AN ALCOHOL DISTILLATION DEVICE TO SEPARATE THE ALCOHOL FROM THE WATER. THIS PROCESS OVERALL INVOLVES A BIT OF ENERGY – BUT IT IS BELIEVED TO USE ABOUT 80% LESS INPUT ENERGY THAN STANDARD GASOLINE. LET THE RECORD SHOW – I BELIEVE CORN BASED ETHANOL TO BE A THING OF THE PAST. IT'S ALL ABOUT WASTE MATERIALS AND CELLULOSE.

CELLULOSIC ETHANOL PRODUCTION

HEAT A POT OF WATER UP TO 180 DEGREES AND REDUCE THE PH. ADD WOOD CHIPS, SAWDUST, GRASS CLIPPINGS, OR ANY OTHER PRE-SHREDDED PLANT MATERIAL. AGITATE FOR ABOUT 3 HOURS. THEN LET IT COOL AND ADD SOME HYDRATED LIME TO BRING THE PH UP A BIT. ADD A SPECIAL NATURAL FUNGUS AND AGITATE FOR ANOTHER 9 HOURS. ADD YEAST AND LET FERMENT FOR ABOUT 4 OR 5 DAYS TO YIELD A LOW GRADE ALCOHOL. FINALLY, PUT THE SOLUTION INTO AN ALCOHOL DISTILLER TO SEPARATE OUT THE 190 PROOF ALCOHOL. -- THIS IS HOW YOU CAN TURN WASTE PLANTS INTO ALCOHOL.

ON THE PROPER SCALE (AS LITTLE AS 50 GALLONS AT A TIME) THE CELLULOSIC PRODUCTION OF ALCOHOL CAN BE 10 TIMES CHEAPER AND EMBODY FAR LESS ENERGY IN THE PROCESS THAN USING TRADITIONAL CORN AS THE FEEDSTOCK. 1 TON OF USED NEWSPAPERS CAN YIELD 120 GALLONS OF ALCOHOL.

CURRENTLY, THERE IS A LOT OF MONEY INVESTED IN HIGH-TECH COMPANIES USING EXOTIC MAN-MADE ENZYMES TO BREAK-DOWN THE CELLULOSE INTO SUGAR. BUT THE FUNGUS WE WERE TURNED ONTO IS THE SAME ORGANISM THAT WAS DISCOVERED IN NATURE DURING WWI BECAUSE IT WAS EATING AWAY ALL OUR COTTON UNIFORMS AND TENTS. THE FUNGUS ITSELF NATURALLY CREATES AN ENZYME POWERFUL ENOUGH TO DO THE JOB.

BIOFUELS ENERGY CORPORATION

THE PROCESS DESCRIBED ABOVE HAS BEEN TWEAKED AND HONED BY A CORPORATION IN TEXAS (BIOFUELS ENERGY CORPORATION -BEC). I WENT OUT THEIR WITH SOME OTHER ETHANOL ENTHUSIASTS TO MEET THESE FOLKS AND LEARN FIRST-HAND HOW IT ALL WORKS. TECHNICALLY, THE PROCESS APPEARS TO CHECK OUT – THOUGH BEC IS UNDERSTANDABLY GUARDED ABOUT THE WHOLE THING WHICH MAKES IT TOUGH TO VERIFY EVERYTHING ON MY OWN. BUT ALSO, ON THE BUSINESS SIDE OF THINGS, BEC HAS A VERY INTRIGUING ASSOCIATE PROGRAM WHERE THEY WILL GO THROUGH GREAT LENGTHS ON THEIR END TO SUPPORT GROUPS IN OTHER AREAS IN THE PRODUCTION OF ETHANOL USING THEIR PROPRIETARY METHODS.

LONG STORY MADE SHORT... THEY PROPOSE TO FUND 65% OF THE OPERATIONS IF WE CAN COME UP WITH THE OTHER 35% (INCLUDES THE LAND, FEEDSTOCK, BUILDINGS, PERMITS, ETC). A 4M GALLON/YR. PLANT IS ESTIMATED TO COST ABOUT \$12M TOTAL. PRETAX NET WORKS OUT TO BE ABOUT \$800K/YR. ON THE ASSOCIATE SIDE. THESE ARE ALL PRELIMINARY AND ROUGH ESTIMATES BASED ON A TECHNOLOGY AND PROCESS THAT HAS YET TO BE PROVEN. BUT ISN'T THAT WHAT INNOVATION IS ALL ABOUT?!

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ETHANOL IN CARS

E10, EX, E85

E10 (GASOHOL) IS 10% ALCOHOL AND 90% GASOLINE. CURRENTLY, ALL GAS IN CALIFORNIA HAS 5.7% ALCOHOL IN IT ALREADY, BUT THERE ARE A FEW STATIONS CARRYING 10%. FROM WHAT I GATHER, SUPER UNLEADED IS NOTHING MORE THAN GAS WITH 10% ALCOHOL. E10 IS CLOSER TOWARDS REDUCING PETROLEUM AND GREENHOUSE GASES, ESPECIALLY IF THE ENTIRE STATE OF CALIFORNIA WERE TO SWITCH. BUT IT IS STILL ONLY 4.3% BETTER THAN WHAT WE ARE CURRENTLY DOING IN TRANSPORTATION. ALL CARS THAT RUN ON GASOLINE CAN ACCEPT E10 AND STILL HONOR THEIR WARRANTY. ALL GAS CARS CAN HANDLE E24, BUT WILL USUALLY VOID THEIR WARRANTIES. AND THERE ARE EVEN MANY CARS ON THE ROAD TODAY THAT CAN HANDLE UPWARDS OF 50%. THE PROBLEM IS THAT THE HIGHER CONCENTRATIONS OF ALCOHOL BEGIN TO HAVE STRONGER AND STRONGER PROPERTIES OF SOLVENCY WHICH CAN BEGIN TO DETERIORATE SOME OF THE MATERIALS IT COMES INTO CONTACT WITH (FUEL LINES, SEALS AND GASKETS). THE OTHER PROBLEM IS THAT AS YOU ADD MORE AND MORE ETHANOL TO THE MIX, SOME CARS JUST DON'T KNOW HOW TO COMPENSATE WITH THE LOWER ENERGY CONTENT. ETHANOL MAY BE "SPASH BLENDED" TO CREATE THE APPROPRIATE MIX FOR EACH USER. JUST POUR IN THE ETHANOL INTO YOUR TANK, AND THEN POUR IN THE GASOLINE - OR VICE-VERSA. THERE ARE CURRENTLY OVER 5,000,000 FLEXIBLE FUEL VEHICLES (FFVs) IN THE US, AND ANOTHER 1,000,000 ARE ANTICIPATED TO BE ADDED EVERY YEAR. THERE ARE ACTUALLY MORE FFVs THAN DIESEL CARS. FFVs ARE DESIGNED TO RUN ON E85 (85% ETHANOL / 15% GAS). ONLY 300,000 ARE IN CALIFORNIA - AND MANY OF THE DRIVERS OF THESE VEHICLES DON'T EVEN KNOW THEY CAN USE ETHANOL. THERE ARE ONLY ABOUT \$100 IN PARTS THAT MAKES AN FFV DIFFERENT THAN ANY OTHER CAR (DIFFERENT FUEL LINES, TANK, AND A FUEL SENSOR THAT OTHER CARS DON'T HAVE).

CONVERSIONS

THERE ARE NO CONVERSIONS OR AFTERMARKET PARTS THAT HAVE BEEN CERTIFIED BY THE EPA AS MEETING THE STANDARDS TO MAINTAIN CLEAN EXHAUST EMISSIONS. TECHNICALLY SPEAKING, CONVERTING A VEHICLE THAT WAS DESIGNED TO OPERATE ON UNLEADED GASOLINE ONLY TO OPERATE ON ANOTHER FORM OF FUEL IS A VIOLATION OF THE FEDERAL LAW AND THE OFFENDER MAY BE SUBJECT TO SIGNIFICANT PENALTIES. ALL VEHICLE CONVERSIONS MUST BE CERTIFIED ACCORDING TO MOBILE SOURCE ENFORCEMENT MEMORANDUM 1A (MEMO 1A), THE ADDENDUM TO MEMO 1A, AND THE REVISION TO THE ADDENDUM TO MEMO 1A, WHICH WERE ISSUED BY EPA. ONLY COMPANIES WHO OBTAIN EITHER A EPA CERTIFICATE OF CONFORMITY ACCORDING TO OPTION 1 OR A RETROFIT SYSTEM CERTIFICATION FROM THE CALIFORNIA AIR RESOURCES BOARD (CARB) ACCORDING TO OPTION 2 OF THE ADDENDUM TO MEMO 1A MAY PERFORM ALTERNATIVE FUEL VEHICLE CONVERSIONS. NO AFTERMARKET CONVERSION COMPANY HAS TAKEN THE INITIATIVE TO CERTIFY AN E85 KIT THAT WOULD ALLOW A GASOLINE VEHICLE TO OPERATE ON E85. HOWEVER, SOMEHOW THE VILLAGE IDIOT AND HIS CRONIES ARE IN CHARGE OF OUR NATION. SO ARE WE GOING TO LET THE GUIDANCE OF THE CURRENT ADMINISTRATION DICTATE EVERY ASPECT OF OUR LIVES? OR DO WE HAVE ENOUGH TRUST IN OURSELVES TO TAKE SOME INITIATIVE. WELL, IF YOUR ANSWER IS "NO!" - THERE ARE OPTIONS...

FLEXTEK

A SIMPLE DEVICE WHICH WORKS IN MANY CARS. THERE ARE 4, 6, OR 8 CONNECTORS DEPENDING ON HOW MANY CYLINDERS YOU HAVE. PLUG THESE WIRES TO YOUR FUEL INJECTOR PLUGS, GROUND THE DEVICE TO A CONVENIENT SPOT, AND IT'S READY TO DO IT'S MAGIC. A SMALL BOX CONTAINING CIRCUITRY HAS A SWITCH LABELED "G" FOR GAS, AND "A" FOR ALCOHOL. WHEN YOU ARE RUNNING ON MORE ETHANOL THAN THE CAR CAN HANDLE, JUST SWITCH OVER TO "A". IT'S A GOOD IDEA TO GRADUALLY WORK YOUR WAY UP TO THE HIGHER BLENDS SO YOU DON'T RELEASE TOO MUCH GUNK FROM YOUR TANK AT ONCE. YOU'LL WANT TO CHECK YOUR FUEL FILTER PERIODICALLY AND CHANGE IT OUT UNTIL YOUR SYSTEM IS RUNNING ON CLEAN E85. IT IS EVEN POSSIBLE TO RUN 100% ETHANOL. WHEN IT COMES TIME TO SMOG - YOU MAY NEED TO PUT GASOLINE IN YOUR TANK AND POSSIBLY REMOVE THE DEVICE SO YOUR CAR DOES NOT RUN SO CLEAN AS TO CONFUSE THE SMOG DEVICE.

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ETHANOL STATIONS

THE DEPOT MODEL

ALREADY PROVEN TO BE PERMISSIBLE BY LAW AND TECHNICALLY DOABLE, AN ETHANOL DEPOT HAS TWO MAIN ASPECTS IN ORDER TO WORK ABOVE THE BOARD. FIRST, IT HAS TO BE LOCATED ON AGRICULTURAL LAND. AND SECOND, CARB WILL NOT ALLOW A PUMP FOR RETAIL PURPOSES. THE FUEL CAN ONLY BE DISTRIBUTED IN FUEL CANS AND MAY NOT BE PLACED INTO THE VEHICLES ON THE PREMISES UNLESS THEY ARE THE "FARM" MACHINERY.

WE'VE BEEN USING THIS MODEL FOR OVER A YEAR NOW AND HAVE A FEW NOTEWORTHY OBSERVATIONS TO REPORT...

1. FUEL CONTAINERS SHOULD BE RELIABLE AND EASY TO HANDLE.
2. A WELL-DESIGNED PROTOCOL FOR DROPPING CONTAINERS OFF AND PICKING THEM UP IS KEY.
3. THIS MODEL LEAVES VERY LITTLE MARGIN FOR "PROFITABILITY".
4. ADMINISTRATION NEEDS TO BE IN PLACE AND COMPREHENSIVE.
5. HOME DELIVERY IS POSSIBLE BUT COSTLY.
6. ADDING SATELLITE DEPOTS MAY BE THE "KILLER APP" TO MAKE THIS MODEL SUSTAINABLE.

ETHANOL FROM A PUMP

A RETAIL STATION IN TERMS OF WHAT WE ARE ALL FAMILIAR WITH MAY BE DIFFICULT AT BEST. BUT THE ANSWER MAY BE A HYBRIDIZATION OF THE DEPOT AND THE RTC IN SAN DIEGO (CURRENTLY THE ONLY LEGIT STATION IN CALIFORNIA). SINCE THERE ARE A HOST OF REQUIREMENTS THAT COME ALONG WITH SELLING FUEL TO THE PUBLIC, ONE WAY AROUND THIS IS TO FORM A USER GROUP OR CO-OP. THIS IS HOW THE BIODIESEL STATIONS ARE ABLE TO OPERATE - AND IT IS HOW A SMALL BIOFUEL STATION SERVING ETHANOL COULD BEGIN AS WELL. WITH THE USER GROUP MODEL, ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS) REQUIREMENTS ARE MET USING ANY CRUDE METHOD OF TRACKING FUEL USAGE AMONG THE MEMBERS. A CONVENTIONAL FUEL DISPENSER CAN BE USED - AND THE STATION CAN BE ANYWHERE LOCAL CODES PERMIT. BUT CARB HAS YET TO CERTIFY THE HARDWARE FOR THIS PROCESS. ANSWERS ARE A FEW PHONE CALLS AWAY - BUT IT LOOKS AS THOUGH CALIFORNIA WILL HAVE IT'S FIRST ETHANOL COMPLIANT FUEL PUMP THIS SUMMER. OF COURSE - THERE IS STILL ONE MORE MAJOR HURDLE TO OVERCOME. CARB INSISTS THAT THE VAPOR LOSE IS SIGNIFICANT ENOUGH THROUGH THE FUEL TANKS THEMSELVES TO WARRANT SPECIAL, EXPENSIVE COOLING/SHIELDING SYSTEMS WITH ABOVE GROUND TANKS. AGAIN - THIS WILL REQUIRE MORE DIGGING TO DETERMINE HOW EXTENSIVE A STORAGE SYSTEM IS REQUIRED.

THERE ARE CURRENTLY FOUR LEGITIMATE FUELING FACILITIES IN CALIFORNIA. THE RTC IN SAN DIEGO WHICH IS THE ONLY RETAIL OUTLET, AND LAWRENCE LIVERMORE LABS, LAWRENCE BERKELEY NATION LABS, AND THE VANDENBERG AIRFORCE BASE. WE'VE ALREADY BEGUN DISCUSSIONS WITH THE RTC AND HAVE VISITED THEIR STATION. IT MAY BE FASTER TO GET INFORMATION FROM THESE FOLKS AS OPPOSED TO THE REGULATORY AGENCIES INVOLVED - AT LEAST FOR PRELIMINARY INVESTIGATION. WE MAY ALSO NEED TO WORK WITH BAAQMD.

ANOTHER IMPORTANT ITEM TO NOTE IS THAT CARB ALSO HAS A PROCEDURE FOR CERTIFYING THE FUEL ITSELF. AS LONG AS YOU USE GASOLINE FROM THE REFINERIES - THERE WILL BE NO PROBLEMS BECAUSE THEY ARE ALREADY PART OF THE ENTRENCHED SYSTEM. BUT E85 COMING INTO CALIFORNIA OR FROM WITHIN CALIFORNIA NEEDS TO MEET THERE STANDARDS FOR E85 (WHICH DON'T REALLY EXIST). THE WAY THEY SEEM TO PUT IT IS THAT EACH PRODUCER NEEDS TO CERTIFY THEIR OWN FUEL AND ANY BATCH IS SUBJECT TO THEIR TESTING.

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RESTRICTIONS

THERE ARE CERTAIN LIMITATIONS IMPOSED BY THE FEDS, THE STATE, THEN MARIN, AND FINALLY THE CITY WHERE THE STATION WILL BE.

NATIONAL LIMITATIONS ARE REALLY MINIMAL. ANYTHING THAT OTHER STATES ARE DOING WILL BE BY ANY AND ALL FEDERAL AGENCIES. IN FACT, THE EPA IS MORE CONCERNED ABOUT HOW WE PUT THE FUEL IN OUR CARS MORE THAN ANYTHING ELSE.

HOWEVER, CALIFORNIA AIR RESOURCE BOARD (CARB) HAS MUCH TIGHTER CONTROLS ON A FUELING STATION. THEIR CONCERNS ARE RELATED TO POSSIBLE VAPOR LOSE WHEN STORING ALCOHOL IN THE TANKS, AND WHEN DISPENSING THE FUEL FROM THE PUMP. THEY ARE ALSO NERVOUS ABOUT THE CORROSIVE EFFECTS ON THE EQUIPMENT. BACK IN JANUARY OF THIS YEAR, NEVC SAID THEY WERE WORKING WITH CARB ON CERTIFYING A FUEL SYSTEM THAT SHOULD BE READY BY TIME OF THIS WRITING.

MORE RESEARCH AND PHONE CALLS NEED TO HAPPEN BEFORE WE CAN GET A GOOD INDICATION OF HOW RESTRICTIVE MARIN AND THE CITY OF CHOICE WILL BE. IN ALL LIKELIHOOD – IT'S NOT THESE GUYS YOU NEED TO WORRY ABOUT. YOU WILL FIND PROGRESSIVE MARIN REPRESENTATIVES AND DEPARTMENTS TO BE VERY SUPPORTIVE OF AN ALTERNATIVE FUELING STATION. THE TOUGH NUTS TO CRACK WILL BE IN THE STATE AGENCIES. LOCALLY, YOU WILL SIMPLY NEED TO COMPLY WITH ALL STANDARD ORDINANCES (FIRE, SAFETY, ZONING, ETC).

FUNDING

LOOKING FOR FUNDING? THE CLEAN CITIES PROGRAM IS A GREAT PLACE TO START (WWW.EERE.ENERGY.GOV/CLEANCITIES). THE NATIONAL ETHANOL VEHICLE COALITION (NEVC) WAS RECENTLY AWARDED \$84M TO DOLE OUT FOR FLEDGLING ETHANOL STATIONS ACROSS THE NATION. SEE ATTACHMENTS TO THIS DOCUMENT FOR OTHER GREAT SOURCES OF FUNDING.

TAX CREDITS

- 43.35 CENTS PER GALLON OF E85 IS AVAILABLE AS A FEDERAL TAX CREDIT TO ETHANOL PRODUCERS (SECTION 4081).
- 51 CENTS TAX CREDIT IS AVAILABLE TO BLENDEES FOR EVERY GALLON OF ETHANOL THEY ADD TO FUEL.
- TAXPAYERS MAY CLAIM A 30% INCOME TAX CREDIT FOR THE COST OF INSTALLING ETHANOL VEHICLE REFUELING PROPERTY FOR USE IN A TRADE OR BUSINESS OR AT THE PRINCIPAL RESIDENCE OF THE TAXPAYER. IN THE CASE OF RETAIL CLEAN-FUEL VEHICLE REFUELING PROPERTY, THE CREDIT MAY NOT EXCEED \$30,000. IN THE CASE OF RESIDENTIAL CLEAN-FUEL VEHICLE REFUELING PROPERTY, THE CREDIT MAY NOT EXCEED \$1,000. THIS E85-RELATED CREDIT EXPIRES AT THE END OF 2009. INTERNAL REVENUE CODE SECTION 30C.
- THERE IS A 10-CENTS-PER-GALLON CREDIT FOR SMALL ETHANOL PRODUCERS WHERE PRODUCTION DOES NOT EXCEED 15M GAL/YR AND PRODUCTION CAPACITY DOES NOT EXCEED 30M GAL/YR. (SECTION 4D). A NEW LAW ALLOWS COOPERATIVES TO ELECT TO PASS THE SMALL ETHANOL PRODUCER CREDIT THROUGH TO THEIR PATRONS.

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CONCLUSION

PLANNING

IF YOU ARE SERIOUS ABOUT BUILDING A BIOFUEL STATION IN MARIN, THERE ARE SOME PLANNING CONSIDERATIONS TO BE ADDRESSED BEFORE PICKING UP A HAMMER OR YOUR CHECKBOOK.

I SUGGEST BOUNCING THE CONCEPT OFF OTHER SEASONED INDIVIDUALS WHO MAY HAVE MORE ANSWERS THAN THIS DOCUMENT OR THE PRESENTATION SUPPLIED. IN COMPLETE CANDOR, I SHALL LET YOU KNOW JUST HOW I WOULD TACKLE THIS ISSUE...

FIRST OF ALL, THERE IS THE CHICKEN 'N EGG DILEMMA - SIMPLY HAVING A BIOFUEL STATION IS NOT IN ITSELF ENOUGH TO DO MUCH GOOD. YOU STILL NEED A SOURCE OF THE FUEL AND YOU STILL NEED VEHICLES AND CUSTOMERS TO USE THE FUEL. YOU WILL NEED TO DEVELOP ALL THREE ASPECTS. PERHAPS THREE SEPARATE LLCs SHOULD BE USED IN ORDER TO PROVIDE ADDITIONAL LAYERS OF LEGAL PROTECTION AND NOT PUTTING ALL YOUR EGGS/CHICKENS IN ONE BASKET.

ETHANOL FUEL PRODUCTION

PRODUCTION IS KEY TO THE FINANCIAL HEALTH OF THIS HOLISTIC MODEL. SIMPLY RESELLING ETHANOL THAT'S BEEN HANDLED BY SEVERAL MIDDLEMEN ON ITS' WAY FROM NEBRASKA IS NOT A VIABLE LONG TERM STRATEGY FOR FINANCIAL SUCCESS. THERE ARE A NUMBER OF SOURCES LOCALLY THAT MAY SUPPLY CHEAP LOW-GRADE ALCOHOL FOR FURTHER REFINEMENT IN ORDER TO GET STARTED. AND CELLULOSIC ETHANOL HAS GREAT PROMISE. THIS WILL NEED TO BE DEVELOPED ASAP BY THROWING SOME SEED MONEY AT R&D IN THIS AREA. RESEARCHING THE VIABILITY OF LOCAL FEED STOCKS, PROCESSING LOCATIONS, TECHNICAL FEASIBILITY, AND DEVELOPING A MODEL FOR PRODUCING 1 OR 4 MILLION GALLONS PER YEAR.

VEHICLES

CONVERSIONS ARE A SIGNIFICANT PART OF THE CUSTOMER BASE AND NEED SOME DEVELOPMENT AS WELL. MICHAEL'S GROUP AND GEN HAVE ALREADY MADE STRIDES IN REAL-WORLD EXPERIMENTATION. WE SHOULD BE ABLE TO FIGURE OUT A QUASI-LEGAL METHOD OF ENHANCING VIRTUALLY ANY VEHICLE ON THE ROAD TO RUN ON ETHANOL. THE VEGI-OIL FOLKS ARE DOING IT WITHOUT BEING HASSELED BY ENFORCEMENT AFTER ALL. EV FOLKS CONVERT WITH IMPUNITY AS WELL. PERHAPS WE NEED TO FORM A RELATIONSHIP WITH THE MANUFACTURERS OF THE FLEXTEK AND BECOME DISTRIBUTORS FOR BETTER PRICING TO OUR MEMBERS. WE ALSO NEED TO FIND OUT EXACTLY HOW MANY FFVs ARE ALREADY IN OUR AREA AND HOW TO REACH THE OWNERS FOR MARKETING PURPOSES (SIDE NOTE... FFVs CURRENTLY DO NOT ENJOY HOV LANE BENEFITS). AND IT WOULD BE HELPFUL TO KNOW HOW MANY PEOPLE SIMPLY WOULD COME TO THE STATION AND DO WHAT EVERYONE SEEMS TO DO IN THE MIDWEST - 50% E85 AND 50% GAS SELF BLENDED AT THE PUMP

THE BIOFUEL STATION

THE DEPOT MODEL IS THE SMALLEST BUT THE QUICKEST AND EASIEST MODEL TO IMPLEMENT. A DEPOT WITH A PUMP IS EVEN MORE ATTRACTIVE BECAUSE OUR EXPERIENCE SHOWS A SIGNIFICANT RELUCTANCE FOR PEOPLE TO USE GAS CANS AS A MEANS OF REFUELING - BUT USING A PUMP WILL ALSO FIND RESISTANCE FROM CARB. ANOTHER ROUTE ALTOGETHER IS TO CONVERT AN EXISTING GAS STATION TO OFFER E85. NO MATTER WHICH PATH WE TRAVEL, I HIGHLY RECOMMEND ALIGNING OURSELVES WITH THE LIKES OF NEVC, RFA, AND LOCAL GOVERNMENTAL OFFICIALS.

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