

their money as tax credit. For instance, instead of repaying the initial capital, the co-op could dedicate, say, 150% of the amount of the investment as tax credits (both setup and initial per-gallon credits) to the investors. The investors make a 50% return on their money in tax savings the first year, and the co-op owns the station free and clear.

By now, you are getting the picture of why the structure of an LLC gives you maximum flexibility to work the angles legally. Here's another reason: With all the alcohol being used within your LLC, you could force the BATF/Treasury Department to license you to legally receive **specialty denatured alcohol (SDA)**. SDA requires a special permit because it's much easier to convert it to drinking alcohol, compared to **completely denatured alcohol (CDA)**, which can't be made drinkable. Companies that make things with alcohol are permitted to buy SDA in order to make whatever product they are in the business of producing. The denaturants are generally other parts of whatever the product's formula normally contains.

If you want to use a completely nonpetroleum denaturing additive with your alcohol, the

difference between SDA and CDA might be crucial, since the approved complete denaturants seem to all be petroleum-based. A nonpetroleum fuel formula may relieve you of several additional regulatory burdens, as well as give you the great feeling of not handing the oil companies *any* of your money for fuel. But if no nonpetroleum CDA formula is approved by the BATF/Treasury Department, all of our co-ops can demand licensing under the SDA provisions—the BATF won't like it, but it doesn't really have the ultimate legal authority to stop us (and our lawyers).

### Band Together

Starting a co-op is so much easier today than it was when I first did this back in the 1980s. At that time, there wasn't any affordable alcohol to buy, so co-ops had to go into both production and distribution. The learning curve was so steep that none of the more than 100 co-ops that started as a result of my classes survived after the price of gasoline plummeted in the late '80s.

In the '80s the motivation wasn't Peak Oil, the greenhouse effect, or displeasure at corporations

Fig. 29-8



running our government—it was anger at OPEC and the price of gas. When the price dropped, so did most people's motivation to make and distribute alcohol. Today we can start by buying alcohol for distribution and then learn how to make it to replace the alcohol that's being purchased, a much less steep learning curve.

Your organization should join together with other co-ops to form regional buying groups, like our Alcoholics Unanimous, that allow you to buy alcohol on moderately long-term, stable contracts with producers of your choice. Nowadays, we can choose whom we want to buy alcohol from, whether it is a corn farmer cooperative, Archer Daniels Midland Corporation (which doesn't buy GMO corn), a large corporate recycler of food waste, or a local guy recycling food waste in a small still. This will help stabilize the price of alcohol, make sure farmers get a fair price for their crops, and ensure that you will have alcohol if supplies get tight as oil runs out.

Banding together with other co-ops can also get you out of paying for outside companies to truck alcohol to your station. A group of co-ops can easily afford a couple of used fuel trucks to move the alcohol from the farm distillery, keeping all the stations topped up. Part-time drivers can come from the membership. You can also reduce the per-gallon expense of owning the trucks by delivering alcohol to personal fuel tanks in suburban and

rural areas surrounding the city. This could create mini-co-ops that don't need to go to the expense of building a cardlock station.

I personally think that co-ops should go out of their way to buy the output of local mini-stills—which might put out only 10,000 to 50,000 gallons per year of 192-proof fuel. In fact, your co-op should even pay a little more for mini-still fuel, since the more you localize production and use, the more everyone in your community financially benefits. Exporting your fuel purchase capital out of state is better than exporting it out of the country to a transnational corporation, but local production, patronage, and marketing should be priorities. Besides, the local police ought to get to eat fresh donuts every day, with the mini-distilleries taking away the day-olds.

### **Farmers, Byproducts, and Integrated Production**

Once your co-op is up and running and has a thousand members or so (and especially if you're urban), you should talk to local farmers about contracting with them to grow and process energy crops specifically for your co-op. This allows you, for instance, to get alcohol of 192 proof instead of water-free 200 proof, saving the extra expense and energy needed to remove the last bit of water. (The large ethanol plants supply the oil companies with octane-boosting additives, which their corporate customers demand be 200 proof, and denatured with gasoline.)

When you contract for feedstocks, if you insist that your fuel must be produced organically, you will directly reduce the use of pesticides and other chemicals. You will help farmers diversify cropping in your region, and, if the farmer chooses energy crops that don't share pests with the local monoculture, growing them will frequently give her nearly pest-free crops. Since many excellent rotation crops increase farmers' incomes over corn or soybeans, you may have less trouble than you think getting some of them to take on your contract.

If the farmer uses strategies outlined in this book, you may find that your group may be collectively buying organic produce, organic fish, organic chicken or eggs, or even organic beef and abalone from the farmer, in addition to the alcohol. In fact, you might fill up from the farmer's fuel truck when you pick up your veggies, or, alternatively, have

**Fig. 29-9 Fuel oil tank alcohol dispenser.** These mass-produced 275 gallon oval fuel oil tanks are rated for flammable liquids. As you can see here, they make dandy private filling stations. Get a permit for it using fuel oil and add your electric pump and vent later, after approval. You can use the same tank to fuel your cogenerator.



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The U.S. Department of Agriculture has several programs for value-added production on the farm; those of you who are urban distribution co-op members may want to research what funds are available for your farmer to capitalize these licensed occupations.

A minimum and maximum performance standard would be set for each operation, perhaps a net of \$30,000 minimum to \$150,000 maximum per year. If an operator can't make the minimum after a number of years, he has to give up his license for someone else to try. If the income is greater than \$150,000, then it is time to issue another license and have two producers of that co-product. This system of capping income prevents what happened at the Bohr farm, when licensees made so much money that they retired and stopped full production.

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*Let's speculate wildly. If each of the approximately 650,000 remaining farmers in the U.S. produced 250,000 gallons per year of alcohol, we would replace all 160 billion gallons of transportation fuel in the U.S.*

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## ALTERNATIVE FUEL VEHICLES



Fig. 29-11

A thousand-person distribution co-op using 500,000 gallons per year at a single station could easily contract for crops and processing done on as little as 250–1000 acres. That's about the size of the average Midwest farm today. A larger co-op could contract with three farmers, for instance, who would each grow one section (640 acres). This would minimize risk for both the farmers and the co-op, allowing the farmer to transition some acreage to contract growing for the co-op, while still doing what she currently knows well. The farmers could share crop-specific equipment as they rotate through different crops.

Use whatever crops work in your local climate: beets, sorghum, cattails, Jerusalem artichokes, chestnuts and hazelnuts, or buffalo gourds growing under mesquite. Soon you may be using hemp, willow, sudan grass, cattails, or coppiced tree crops for cellulosic alcohol.

If the distribution co-op is going to finance a farmer to take on producing alcohol, insist that at least three or four different crops are grown, so that all of you aren't gambling on a single crop. This means having an alcohol plant that can handle diverse feedstocks, and having a greater variety of farm equipment to work the multiple crops.

As soon as the farmers start to see the big improvements in their soil and profits, you may start to find plenty of self-organized farmers offering alcohol to distribution co-ops. After all, that's what happened in the CSA movement. It went from consumers being the initiators to farmers proactively organizing and looking for urban customers.

### Where CSEs Can Lead

So let's speculate wildly. If each of the approximately 650,000 remaining farmers in the U.S. produced 250,000 gallons per year of alcohol, we would replace all the gasoline and half the diesel fuel used in the U.S. That's with each farmer producing only about 30 gallons per hour on a continuous basis for 325 days a year. An integrated plant this size would fit on less than an acre; the farmer could grow a few scores of acres in high-value food production, and the rest of her acreage in bulk fuel crop production. Each farmer, depending on climate and local markets, could supply all the transportation fuel needs of 250 to 500 people, and supply several times this number of customers with all the produce, fish, shrimp, dairy, flowers, fruit, nuts, and meat they need.

In closing, I would like to leave you with the words of Howard Zinn:

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*"[People] want change but feel powerless, alone, do not want to be the blade of grass that sticks up above the others and is cut down. They wait for a sign from someone else who will make the first move, or the second. And at certain times in history there are certain intrepid people who take the risk that if they make that first move others will follow quickly enough to prevent their being cut down. And if we understand this, we might make that first move.*

*"... And if we do act, in however small a way, we don't have to wait for some grand utopian future. The future is an infinite succession of presents, and to live now as we think human beings should live, in defiance of all that is bad around us, is itself a marvelous victory."*

—HOWARD ZINN

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