

Scientists put heads together, develop fuel from wood chips

Seeking ways to ease America's dependence on oil, researchers at Michigan State University are developing a process to convert wood chips and sawdust into liquid fuel or raw materials for chemicals.

For years researchers have known that wood chips could produce glucose, a basic raw material in chemicals which can also be turned into ethanol, similar to the way corn can be used to make gasoline.

The problem has been finding the most commercially feasible method,

and researchers in two departments at MSU — chemical engineering and plant research — think they may have found it. The wood chips are dried and then treated with a hydrogen fluoride process — called HF saccharification.

The two MSU departments are in the second year of a two-year federal grant and are hoping to receive another three years of funding to find out if their project is commercially feasible.

Wood, unlike oil, is a renewable resource, the researchers note.

Utilities may insulate your home free

The state's utilities will help you insulate your home, if you don't make much money.

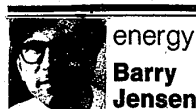
Insulation Outreach is the name of a program offering free (repeat, free) insulation to people who need it but can't afford it.

You have to meet several criteria, but if you can, your home will be warmer in winter and cooler in summer.

The first, which you probably meet if you are reading this column, is that you must use gas to heat your home and be a customer of Consumers Power or Michigan Consolidated Gas.

If you are an electric customer of Consumers or Detroit Edison and use something other than gas to heat your home, you still qualify.

You must also receive some sort of public assistance, such as ADC, general assistance, Supplemental Security Income, Emergency Needs Assistance or energy assistance.



energy
Barry Jensen

If you aren't receiving public assistance, you can't earn a lot of money. If you fall into one of the following categories and are a residential utility customer, you're a step closer to free insulation.

Persons	Household income
1	\$ 4,728
2	7,430
3	10,210
4	12,600
5	14,970
6	17,390
7+	add 2,520/person

You then have to authorize the utility to verify your income.

YOU ALSO must agree to have a home energy audit performed in conjunction with the Home Energy Analysis Program so the utility can find out how much insulation your home needs. A home energy audit is \$10 well spent, anyway.

Once all the insulation has been installed, the utility must be allowed to inspect the insulation job. This, too, is a good idea, especially if you are installing the insulation yourself.

Still with us? The next one's easy. You have to be able to get to your attic through the ceiling, or at least easily. And the building to be insulated must be no more than three stories high.

You also must need insulation so badly that the free insulation will pay for itself in seven years. This isn't all that difficult, but it rules out people who already have two feet of insulation above their ceilings.

IF YOU are a renter, you must have the landlord's written permission to install insulation.

The utility will supply enough insulation to bring the ceiling up to R-19, the recommended minimum. The insulation may be installed by you, your friends, a volunteer group or service organization. Some people may qualify for free installation by a contractor. Call your local utility if you are interested.

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