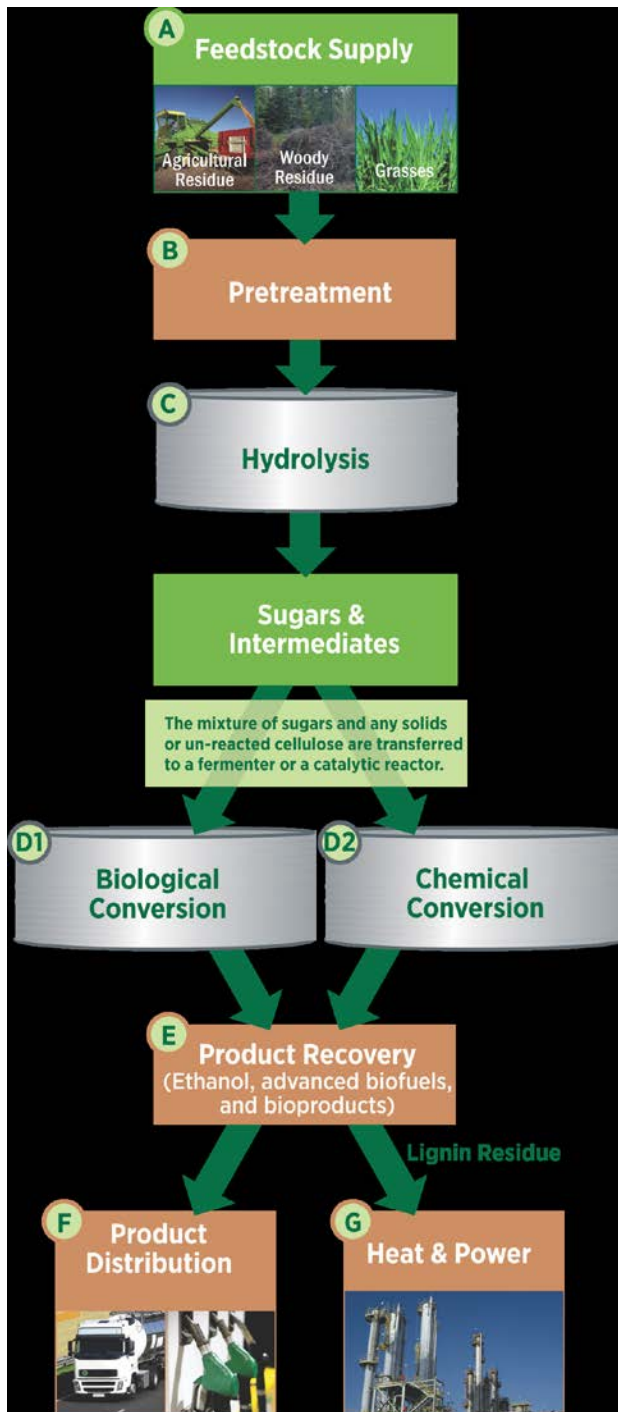


## Beware the “Naturally Occurring” Exemption

Using the flowchart of biochemical conversion developed by the U.S. Department of Energy Bioenergy Technologies Office as a template, see thoughts as to whether the naturally occurring exemption applies in each of the processing steps.



Source: US Department of Energy Bioenergy Technologies

In **Step A**, it is likely that the feedstock supply is biomass that is either unprocessed or processed only by manual, mechanical, or gravitational means. If that is true, the biomass would be considered naturally occurring.

In **Step B**, in which the cell walls are broken down, one must consider whether the feedstock/biomass is simply heated or if chemicals are added. In the first instance, output from Step B would continue to be considered naturally occurring, but in the second instance, it would not.

In **Step C**, enzymes or other catalysts are added to the biomass, which enables the sugars to be separated.

In **Step D1/D2**, microorganisms, or chemical catalysts are used to convert the sugars to other building block chemicals. The derived substances generated in these steps (C, D1 or D2) -- and any additional steps -- would not be considered naturally occurring.

Importantly, **once a naturally occurring substance is processed chemically, it is no longer considered naturally occurring**, nor are its derivatives considered naturally occurring.