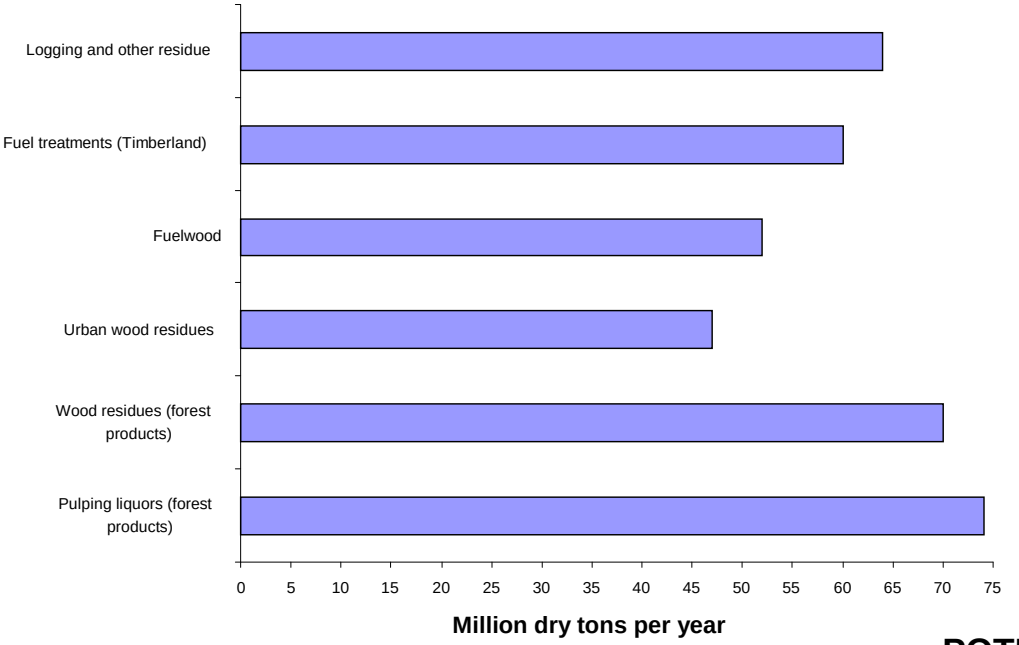
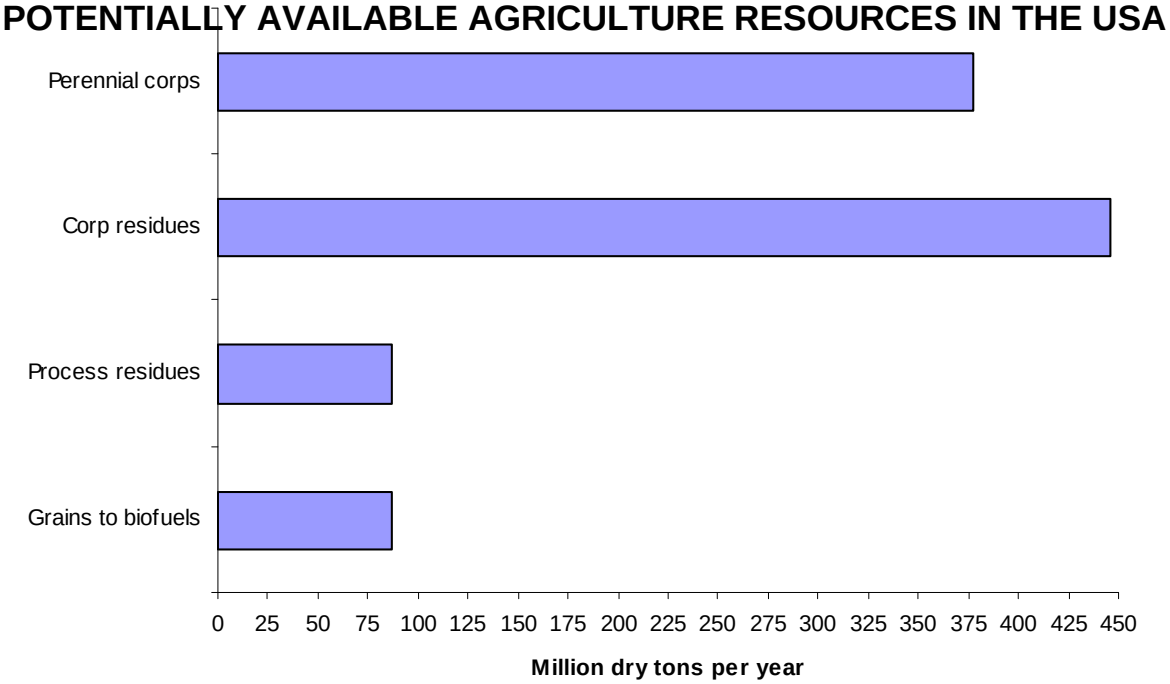
BioResource Demand and Availability

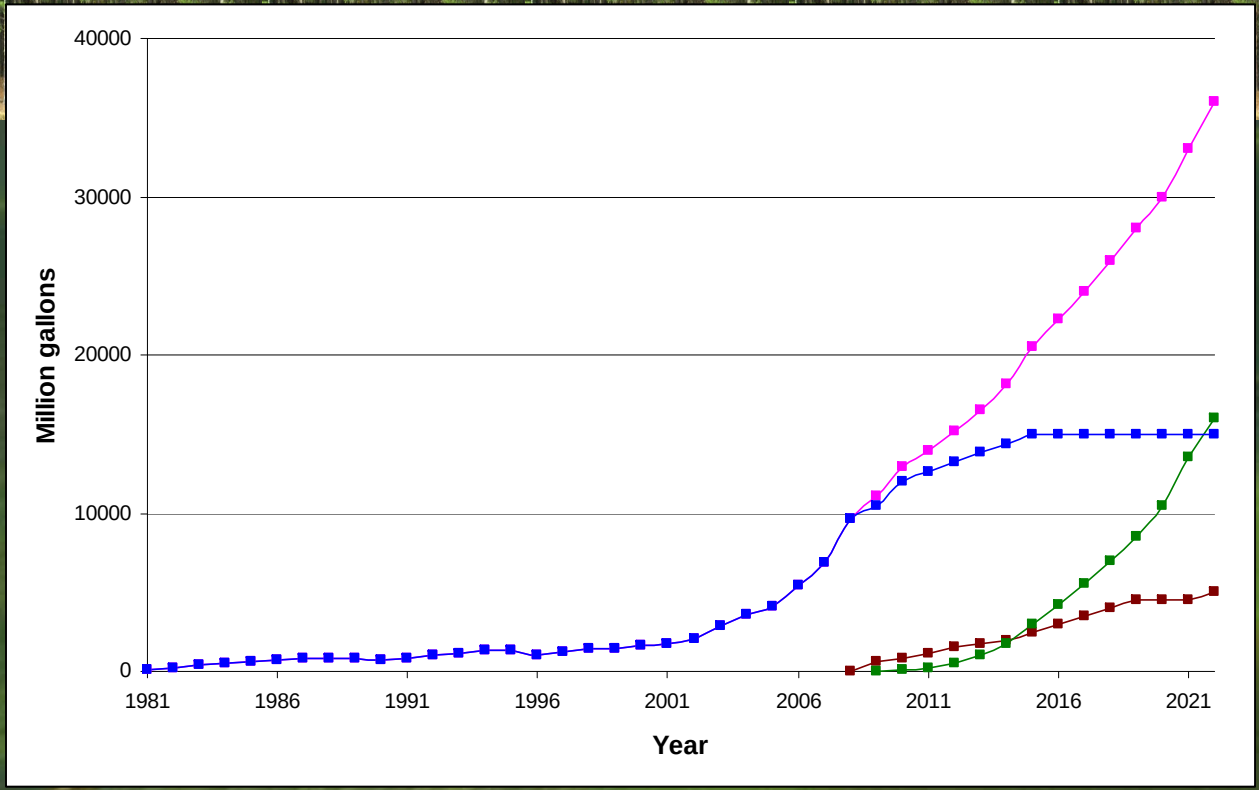
POTENTIALLY AVAILABLE FOREST RESOURCES IN THE USA



POTENTIALLY AVAILABLE AGRICULTURE RESOURCES IN THE USA



BioResource Demand and Availability



U.S BIOFUEL PRODUCTION FROM 1981; STARCH BASED FIRST GENERATION BIOETHANOL (BLUE), CELLULOSIC SECOND GENERATION BIOETHANOL (GREEN), BIODIESEL AND UNDIFFERENTIATED ADVANCED BIOFUELS (BROWN) AND THE PROJECTED USA GROWTH

Lignocellulosic bioresource	~Cost ($/ton)
*Timber**	
Southern pine (SW)	40
Spruce and Douglas Fir (SW)	20
Oak (red, white, black) (HW)	40
Current agricultural energy corps	
Corn	280
Soybean	210
*New generation energy corps***	
Switch grass, Corn stover	35-45
Hybrid poplar, Eucalyptus	40-50

COST OF TYPICAL INDUSTRIAL BIORESOURCES AND NEW GENERATION LIGNOCELLULOSIC ENERGY CORPS IN THE USA/2008

* Calculated as; standard cord is 1.4 SW or 1.6 HW short tons.
** Calculated farm-gate value for economical feasibility with existing technologies.