

Bio fuels

Bio fuels are those fuels produced from biomass and therefore they are considered as a renewable energy. They can be: solid (biodegradable part of urban, industrial or vegetal waste) liquid (bioalcohol, biodiesel) gases (biogas, hydrogen) Among the bio fuels, biomass fuels belong to a subgroup that can be used for internal combustion engines (diesel engines and Otto). They are usually liquid. Bio fuels come from vegetal raw materials that have suffered biologic and physical and chemical processes. At the moment there are two types of bio fuels: Bio diesel, that is obtained from transesterification of vegetal oils (used: frying oil, animal fat, or vegetal: rape or sunflower). There are studies that indicate the good performance of certain kinds of palm trees or fruits such as jojoba, in Mexico. The product that is obtained from this process is a substitute of normal diesel, even though at the moment it is used mixed with it, at 50% proportions. It is obtained from transesterification of vegetable oils and animal fat with a soft alcohol, such as methanol or ethanol. In the year 2004 13,000 tons of bio diesel were produced in Spain (source: eurObserver) bio ethanol, it is obtained mainly from seeds with high levels of sugar through fermentation. In this case, raw materials that are used are beetroot, sugar millet, corn. It is also being studied the use of improved energetic crops, as the lignocellulose ones as the thistle, that contain simple sugar and therefore ethanol can be obtained through fermentation. Nevertheless in other cultures as cereals, energy is stored as more complex carbohydrates as starch, that has to be hydrolysed before its fermentation into bio ethanol. It is used as additive in petrol stations. This compound substitutes traditional fossil fuels and improves its environmental effect. In the year 2004, 194,000 tons were produced in Spain (source: eurObserver) Biogas is obtained by the decomposition of organic matter, mainly in waste waters (therefore purifying water plants have an enormous potential), farm waste, industrial biodegradable waste (as the produced by the beer industry, sugar industry, etc), in anaerobic conditions and through direct action of micro organisms, its composition is usually about 50-70% methane (CH₄) and 20-50% carbon dioxide (CO₂). It can also have hydrogen and hydrogen sulphur in small amounts. The heat value of biogas is approximately 6 Kw /m³ Bioethanol plant in Teixeira, Curtis (Galiza) Source: Abengoa