

## **Beyond Petroleum, Beyond Money**

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In one second our moon, 2,159 miles in diameter, intercepts as much energy from the sun as two million barrels of oil. All the oil pumped from every oil well in the world could not light the moon for even one minute a night.

Earth 7,926 miles in diameter intercepts thirteen and one half times as much sunlight. Six billion of us splitting the bill for sunlight would be liable for 29,000 kW, 37,275-horse power, running 24 hours a day. At \$.10/kWhr we would each owe \$70,000/day close to the value of 10 pounds of gold.

Far in the future mankind by the trillions may be spread throughout space. They will lease nice orbits about suns as we lease condominiums in Florida. It is difficult to imagine such a time or such negotiations; the quantities are so huge we can hardly hold them in our minds. \$70,000 / day? You will have to put it on my tab. We can be relieved not to think of all the sunlight that goes in all directions, streaming past the earth and other planets, that is more than twice a million times a million more than hits the earth.

British Petroleum is a huge international oil company whose ads showing BP as a friend of the environment can be seen in many magazines. They, with the Ford Motor Company, sponsor the carbon initiative, a 10 year university wide research program within The Princeton Environmental Institute.

Princeton relies on British Petroleum as their sponsor and unfortunately also for their energy statistics. BP counts oil, coal, gas, uranium, and hydroelectricity.

Then, with the aplomb of someone mistakenly taking a step off a cliff, they add the category “renewable energy”. How do they count that? Sometimes you read that the letters BP stands for Beyond Petroleum. How far beyond petroleum do they see? Lord Browne of Madingly, group Chief Executive of British Petroleum explains that, although BP recognizes that billions use wood and dung for fires, these uses are difficult to add up. BP counts only wind generators or sunlight converted to electricity or hot water in pipes as renewable energy. The sun that warms the earth every day, the millions of millions of kilowatts that distill our water, grow our food and blow our winds escape the count of BP.

Princeton evidently can't afford to diverge from their patron, but let's think about BP's oil the same way Lord Browne thinks about nature's energy. Though the oil companies pump tens of millions of barrels of oil every day, which powers hundreds of millions of cars, trucks and airplanes, why not disregard all this the way BP disregards sunlight and count just the oil used to lubricate door hinges?

Waking from this daydream we realize that Lord Browne's count of energy is really a count of money. Solar energy is free, and therefore uncounted, but our uses of solar energy, are fascinating and can be measured.

For instance let's remember that a moon second of sunlight equals the energy of 2 million barrels of BP petroleum.

Steve Baer 03/02/05