Re: terraforming

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Sticking affordably close to home, our Earth moon is absolutely chuck full of exactly what humanity needs the most; that being energy.

However, first things first; Our moon needs an atmosphere, although not all that much and certainly not persay for humans to breath. Creating and sustaining a lunar atmosphere could start out as CO2/Rn, eventually becoming entirely robotic with a rather nifty byproduct of extracting He3, while otherwise creating basalt micro−balloons and terrific fibers.

Creating composite tether(s) of 4.84 GPa requires a process of burning basalt on the moon, or rather just something short of burning basalt.

Solar energy conversion need not be costly nor all that complex, especially as per situated upon the moon. A little somewhat environment testy but, certainly not a problem for robotics.

Direct thermal conversion and storage into a well insulated storage tank of water or perhaps h2o2 isn't exactly rocket science. Possibly an existing geode pocket may hold the key to energy storage. Otherwise, as stored energy into somewhat massive flywheels is another perfectly viable manner of keeping terawatts available on demand.

The maximum possible thermal conversion is supposedly 59% of whatever's available. However, taking roughly a little better than half of that as to what a solar sterling engine process cycle can obtain and lo and behold, we're at 33% of 1.4 kw, thus 462 watts per m2 of concentrated energy, and even if that were cut by another 25% affords 346 watt/m2.

Since the source of said energy is essentially free, and upon the moon it's certainly unobstructed and continuous for half the time, represents that a 1e6 m2 solar reflector farm should contribute better than 300 MW for accomplishing whatever task. Although, if the process were to be primarily that of melting basalt, then the direct focus of the solar energy upon the raw basalt furnace or kiln should be somewhere near 50% thermal conversion efficiency. thus 700 MW would become available for such direct process heating, of which being situated within such an already roasting and near perfect vacuum

environment is only going to improve upon the kiln thermal insulation and thus greatly improve upon the process throughput of melting volumes of basalt tonnes per hour, that which melted basalt can be effectively reassimilated/extruded into those continuous (4.84 GPa) fibers having absolutely no atmospheric contamination whatsoever. Thus obtaining the absolute purest form of basalt fiber anywhere in our solar system.

Of course, there's a rather nasty byproduct as to the process melting of all that lunar basalt. Since I do not believe O2 contributes anything to the GPa aspects of basalt, quite possibly the kiln process can be modified as to entirely rid all of the associated O2, that being a nasty byproduct of Oxygen(O2) that'll have to get released into the environment. Since better than 50% of said basalt is supposedly O2, and if persay the process of producing the basalt composite tether of such continuous fibers were to be accomplished at a rate of 100 tonnes per hour, that process is going to seriously contaminate the lunar environment with roughly 50 tonnes of O2 per hour. That's 200,000 tonnes worth of O2 contamination per year as based upon processing basalt into continuous fibers from just one 1e6 m2 solar farm that's obviously limited to 4380 hours (− sunrise/sunset hours where the solar farm may be physically limited as to redirect solar influx should represent at least 4000 hours worth of 100% effective process time) of what the available solar farm sunlight per year has to offer.

Of course, ridding basalt of O2 should only push the fiber GPa to better than 9. In fact, processing almost anything in the absense of O2 should prove highly advantage. I mean to suggest; what is it about O2 that's all that great?

Unfortunately, in order to satisfy all of the mainstream status quo freaks that never want anything to ever change, especially of anything that'll lead into diminishing the value of their investments into oil, coal and gas stocks, or thereby negatively impacting their 'cold−war for profit' investments, whereas at somewhat greater expense the O2 contamination of the moon could be eliminated by simply burning it off (just kidding).

However, once enough tether fiber has been created for the LSE−CM/ISS, I see no valid reason why the solar conversion farms couldn't remain online, in which case they'd be focused upon the burning/vaporising of lunar basalt for the sole function of terraforming the moon into obtaining and maintaining an atmosphere of mostly O2. I see nothing in the laws of physics that would preclude the notion of retaining at least a 0.1 bar environment, whereas at 1.623 m/s/s we should then be able to aerodynamically land shuttles upon the moon. If need be, the lunar atmosphere could be fortified with Rn and CO2 because, since it's going to remain a dry as a bone and at a tenth the pressure, the likes of Rn can be easily moonsuit excluded and/or filtered out, and even 100 fold the concentration of CO2 that's here on Earth shouldn't harly matter, whereas the need to having abodes underground is still going to remain the safety requirement, whereas those internal environments can

remain as free of CO2 an Rn as need be.

I'm fairly certain that I'm way over my level of observational expertise, so please feel perfectly free as to explain in specific numbers and/or by providing other correct details as to what's possible, by way of your contributing better notions and proven methods that don't have to be invented. The sooner we get something established on and/or above the moon, and proceed with extracting and shipping the processed He3 back to Earth, the sooner humanity will stop killing off one another and the sooner we'll stop polluting mother Earth to a fairlywell.

If humanity were to obtained as a whole, access to lots of cheap and squeaky clean energy as to fusion burn, whereas no one has just cause nor motive as to fight over said energy, the quality of life as we know it should only improve and the environment of Earth can become salvaged, and to even be thinking otherwise is absolutely sadistic and as perverted as you can imagine.

Regards, Brad Guth / GASA−IEIS
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My old LSE−CM/ISS page:
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