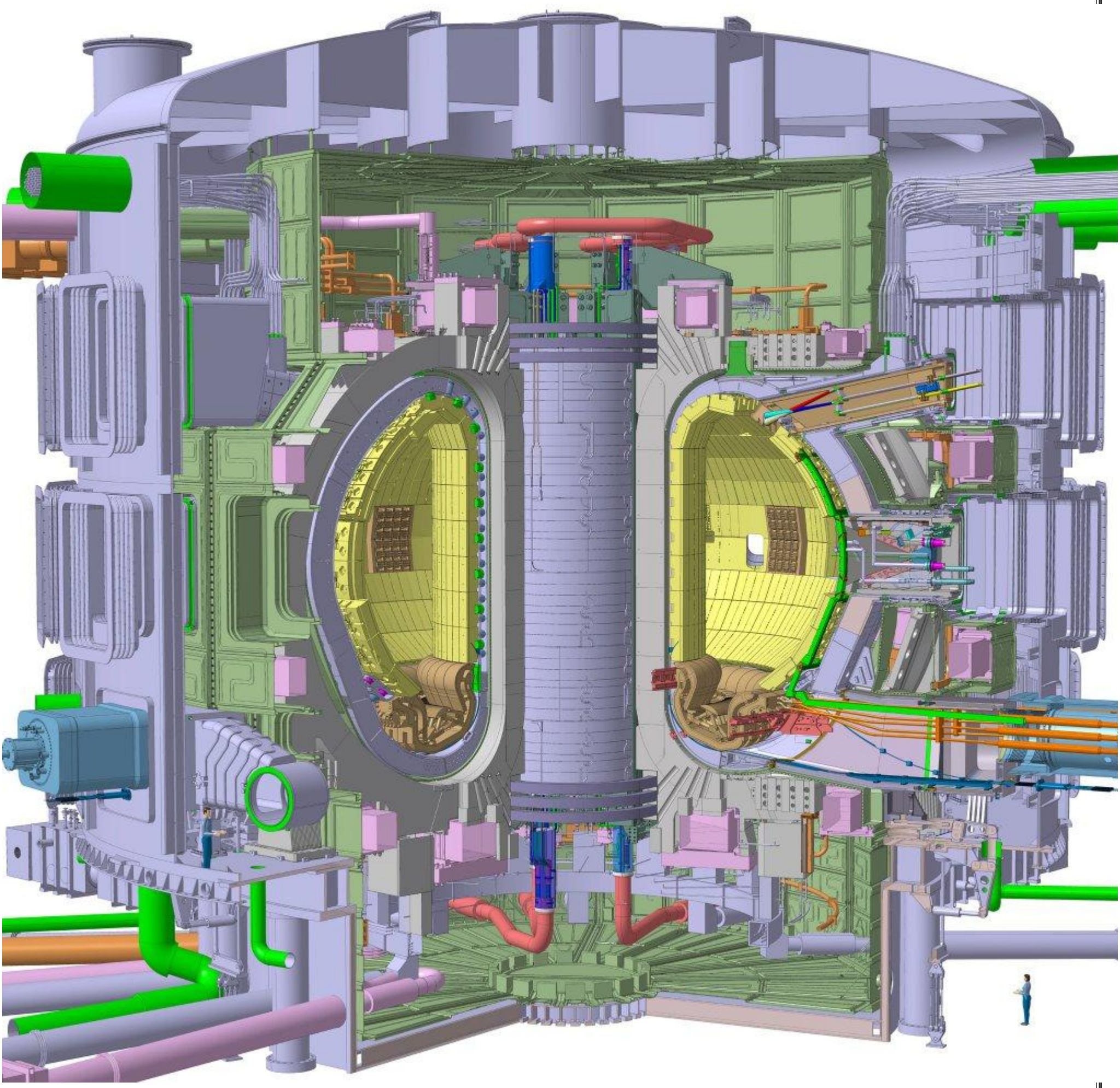
ITER - The Way? - ***by Rolf A. F. Witzsche***



International Thermonuclear Experimental Reactor (ITER)

The reactor will stand 100 feet tall, without substructure and containment, for a total of 120 feet (1/4 of the height of the Great Pyramid in Egypt)

The reactor will weigh 23,000 tons (three times the weight of the steel in the Eiffel Tower) - but far too small for a practical demonstration plant a maximum sustainable burn time of 1000 seconds is expected with continuous refueling and fuel-cleansing - (current world record is half a second)

Operating temperature greater than 100 million degrees, and a fast neutron velocity of 17.6 MeV must be made tolerable in equipment design. Materials don't yet exist that can reliably carry such loads.

- the International Fusion Material Irradiation Facility, will be built to design and test such materials (2020-2060 timeframe)

Fusion energy expected to be generated: 500 MW thermal (ITER will not actually utilize any, as a short-run test reactor):
- With 30% efficiency for thermal, mechanical, and electricity conversion, the net out would equal 150 MW
Input power to cause fusion: 50MW. (Potential net output power would be reduced thereby to 100 MW.
- Actual electricity generation is reserved for the next step, the anticipated much larger DEMO experiment, beyond 2040, if, if, if....
- If all goes well, fusion power in the order of 2000 MW to 4000 MW might be achievable in the 2080 timeframe,
- Commercial fusion would likely be requiring facilities 8 times larger, dwarfing the pyramids of Egypt.
- - see: http://en.wikipedia.org/wiki/ITER