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Good Morning. I don't know if you've been scanning the newspapers, but TechNucleonogy Inc. of Mississauga is developing a car powered by a nuclear reactor. What made this more interesting was Scarborough petroleum giant Smith-Michaels Oil & Gas issuing a statement saying that the nuclear car was "preposterous" and that fuel costs would be so large that no one could afford the car. TechNucleonogy Inc. has refuted this and says that the nuclear car will have a fuel cost per kilometer on par with conventional cars.

Your assignment for the upcoming issue is to ascertain the validity of each company's statements. Some quantitative evidence is needed but remember - we're not a scientific journal; you can make simplifying assumptions and estimates.

I am including a few excerpts from recent newspaper articles, that will give you a place to start. Also, below is a link to a website with a schematic for the engine of a nuclear sub. It may help you understand the basic idea behind the mechanical system of the car.

- [PWR Nuclear Submarines](#)



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Excerpt from "Toronto Times", May 21, 2019:

"TechNucleonogy Inc. of Mississauga has announced plans to move forward with the development and production of a commercially available nuclear powered car. The vehicle will be powered by a nuclear reactor similar to pressurized-water nuclear reactors used to generate electricity. Heat produced by fission is used to drive a turbine which operates a generator and turns the drive shaft through a complex system of gears. It is these gears and the additional use of mechanically operated cadmium control rods that regulates the speed of the car. The technology is an offshoot of nuclear sub technology. Except for the means by which the engine produces energy, the PWR automobile essentially mirrors current gasoline powered vehicles. Because of this mechanical similarity, the efficiency of converting energy produced by the engine into mechanical energy used to drive the automobile is approximately equal to that of today's gasoline fueled car. TechNucleonogy Inc. has paired with Canadian automaker Carada Ltd. to create the first production model. A Carada spokesperson says it will be a typical sedan, expected to compete with models such as the Toyota Camry or Honda Accord."

Excerpt from "Toronto Times", May 23, 2019:

"Smith-Michaels Oil & Gas of Scarborough has issued a public statement against TechNucleonogy Inc. which recently announced development of a nuclear powered automobile. SMOG, a world leader in petroleum products such as automotive gasoline, says that the cost of fueling the proposed vehicle makes it inaccessible to the general public. Smith-Michaels Oil & Gas continued to call the proposed automobile 'preposterous' and said that 'people willing to spend that much money on fuel should just by a private jet'. TechNucleonogy Inc. quickly released a counter-statement stating that the cost of fueling the nuclear vehicle will be equal or less than fueling a gasoline vehicle."

Excerpt from "Toronto Times", May 24, 2019:

"TechNucleonogy Inc. has bought the exclusive rights to EXER or 'exothermic reaction energy recovery' technology developed by researchers at the University of Toronto at Mississauga. This technology collects between 98 and 99 percent of the energy released by exothermic chemical reactions and converts it into stored electrical energy. TechNucleonogy Inc. has said it will use the technology to lower the energy cost of using gaseous diffusion to enrich uranium. Enriched uranium is the fuel that powers the new nuclear automobile under development by TechNucleonogy Inc. and Carada Ltd. By lowering the electrical expense of the gaseous diffusion process, the company hopes to lower fuel costs."