

# Physics for future Presidents

Department of Physics, Carnegie Mellon, Fall 2019, Deserno

**Homework 2**, *draft* due in recitation on Thursday, Sep 5<sup>th</sup>;  
*finalized essay* due the next day, in the lecture on Friday, Sep 6<sup>th</sup>

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## Hydrogen Economy

In his 2003 State of the Union address, former President George W. Bush announced that the United States would develop a hydrogen economy. Specifically he said<sup>1</sup>

*“[...] Tonight I’m proposing \$1.2 billion in research funding so that America can lead the world in developing clean, hydrogen-powered automobiles.*

*A simple chemical reaction between hydrogen and oxygen generates energy, which can be used to power a car, producing only water, not exhaust fumes.*

*With a new national commitment, our scientists and engineers will overcome obstacles to taking these cars from laboratory to showroom, so that the first car driven by a child born today could be powered by hydrogen, and pollution-free.*

*Join me in this important innovation to make our air significantly cleaner, and our country much less dependent on foreign sources of energy. [...]”*

Write a short essay (one page) in which you discuss the following:

What is the general idea behind a “hydrogen economy”? What misconceptions do some people have about such an economy? Could it help to make the US much less dependent on foreign sources of energy? What are the “obstacles” that Bush alluded to?

Recall that, if you wish, you can use our word-template for essays, which you can download on the course web-page under the link “Study Aids & Handouts”. This template will also automatically “remind” you what information you should put on your homework sheet.

**Important:** You are expected to bring a **draft version** of the essay to recitation on Thursday, September 5. The **finalized essay** is due on the next day in class, on Friday, September 6.

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<sup>1</sup>see for instance: <http://www.johnstonsarchive.net/policy/bushstun2003.html>