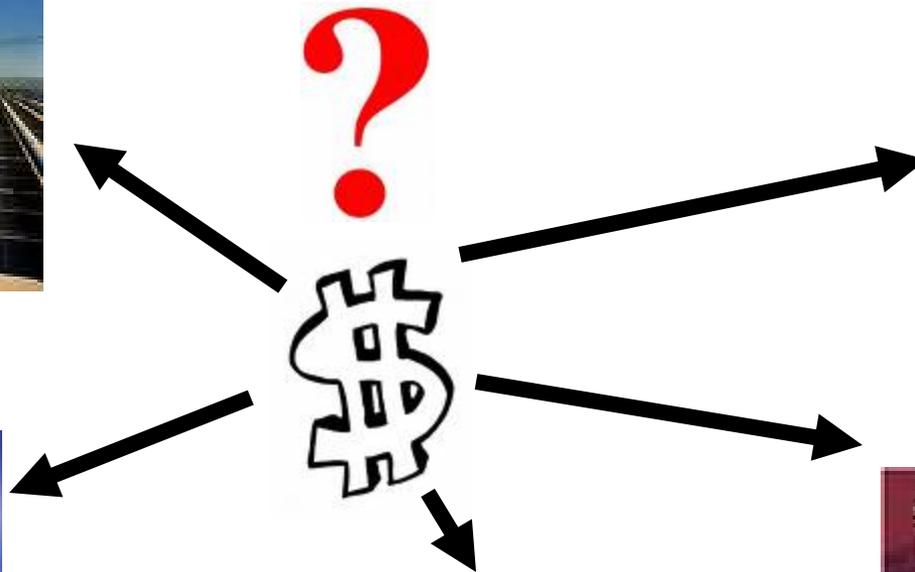
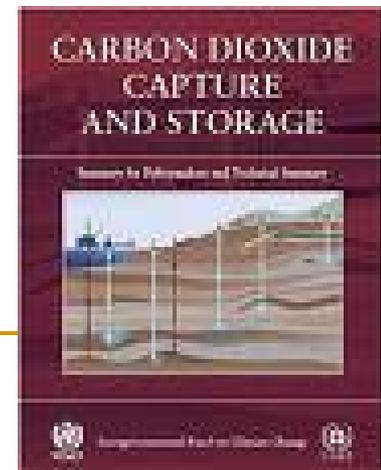
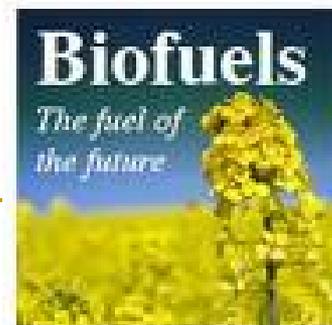


E3lab

Professor Erin Baker, edbaker@ecs.umass.edu
Energy, Environment, and Economic-Decision Making Lab

We are applying mathematical modeling and economic reasoning to determine how research dollars can best be spent on energy technologies in the face of climate change.



Nominal versus Real price



Nominal price: 5 cents

The *real* price of a Coke in 1900 was about \$1.10



What is the recent history of oil and gasoline prices?

- Between **1995** and **2014** did real prices (adjusted for inflation) ...
 - A. Halve?
 - B. Stay about the same
 - C. Double?

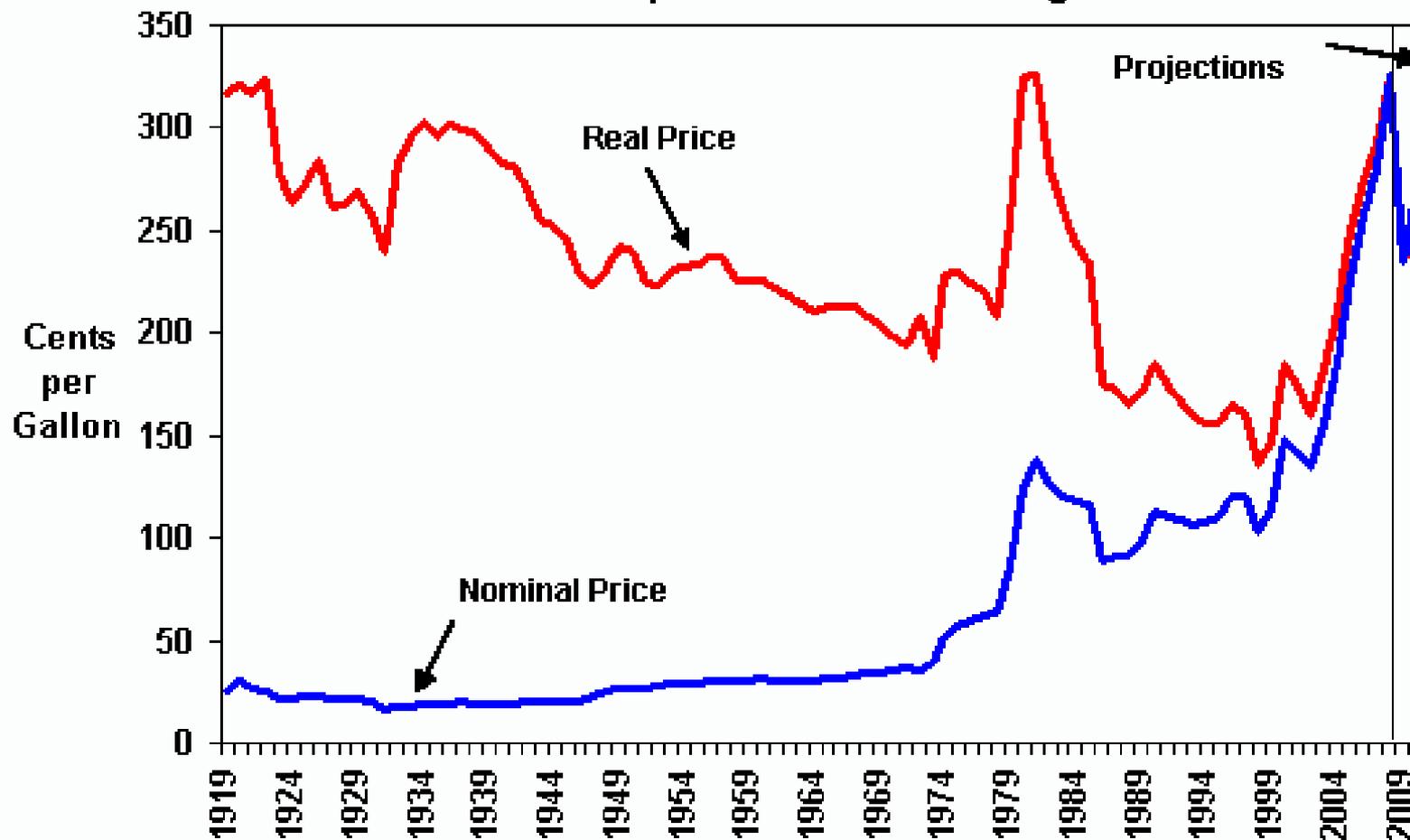
What do you think?

What is the long term history of gasoline prices?

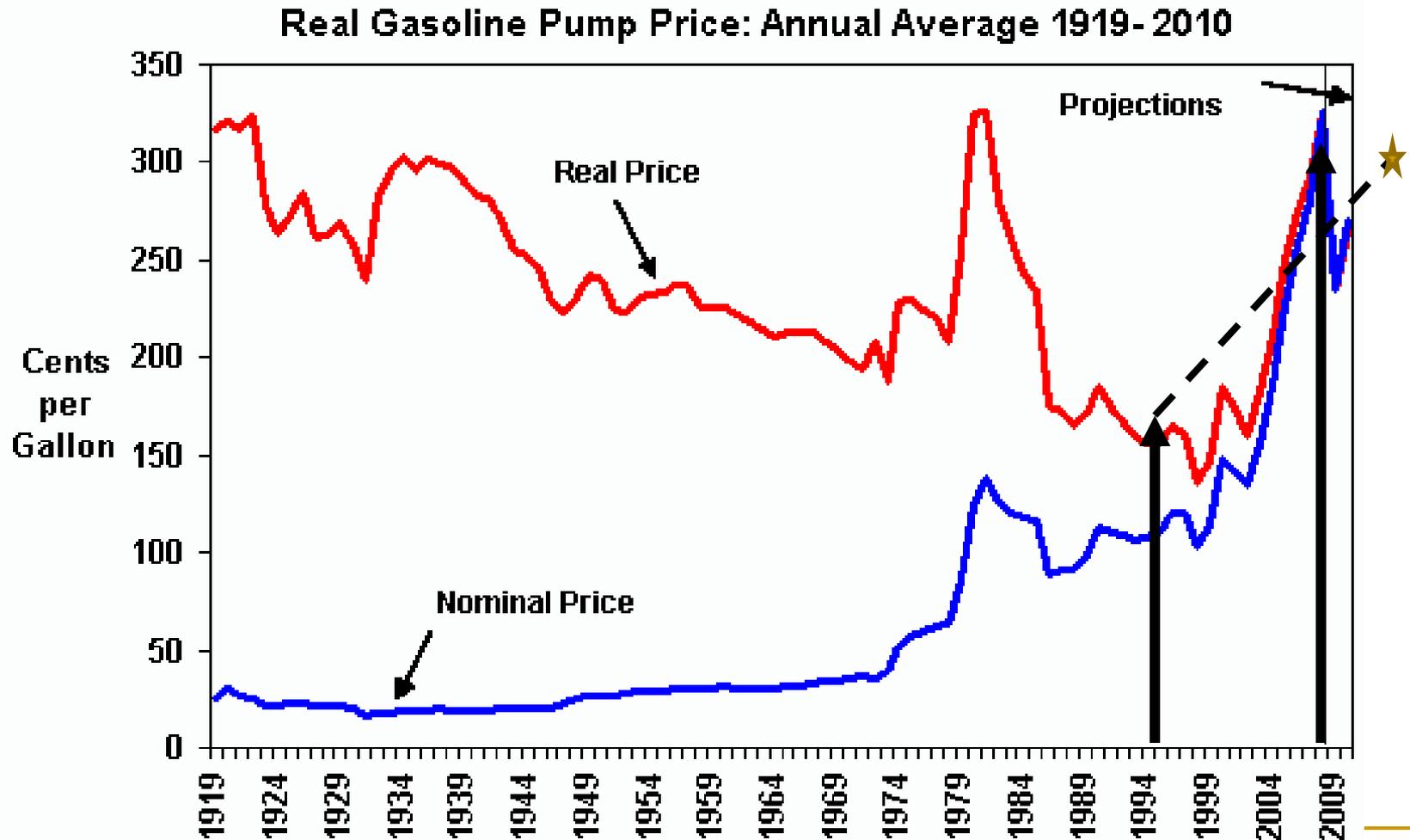
- Between **1920** and **2000** did real prices (adjusted for inflation) ...
 - A. Decrease by about 50%
 - B. Stay about the same
 - c. Increase by about 50%

What do you think?

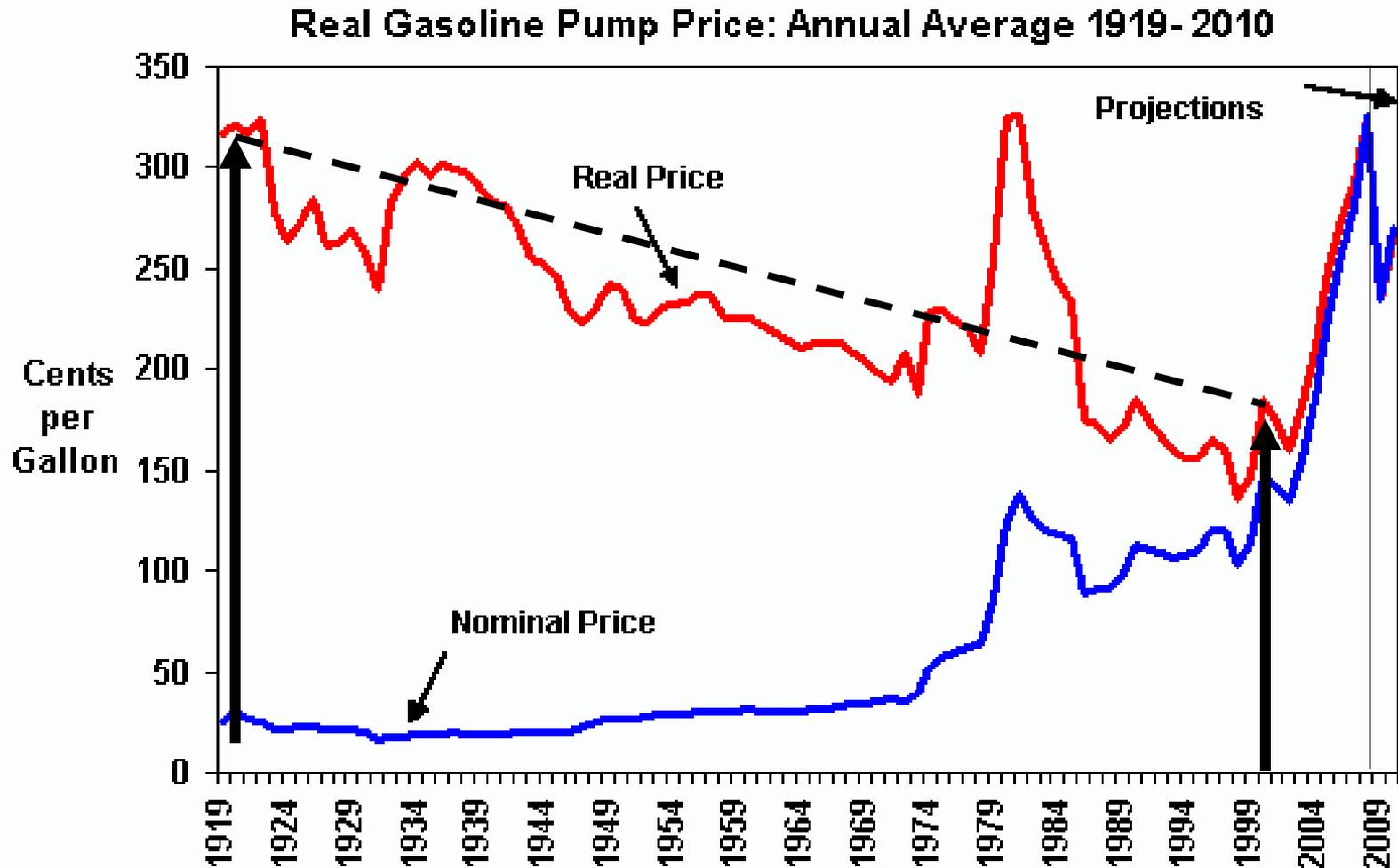
Real Gasoline Pump Price: Annual Average 1919-2010



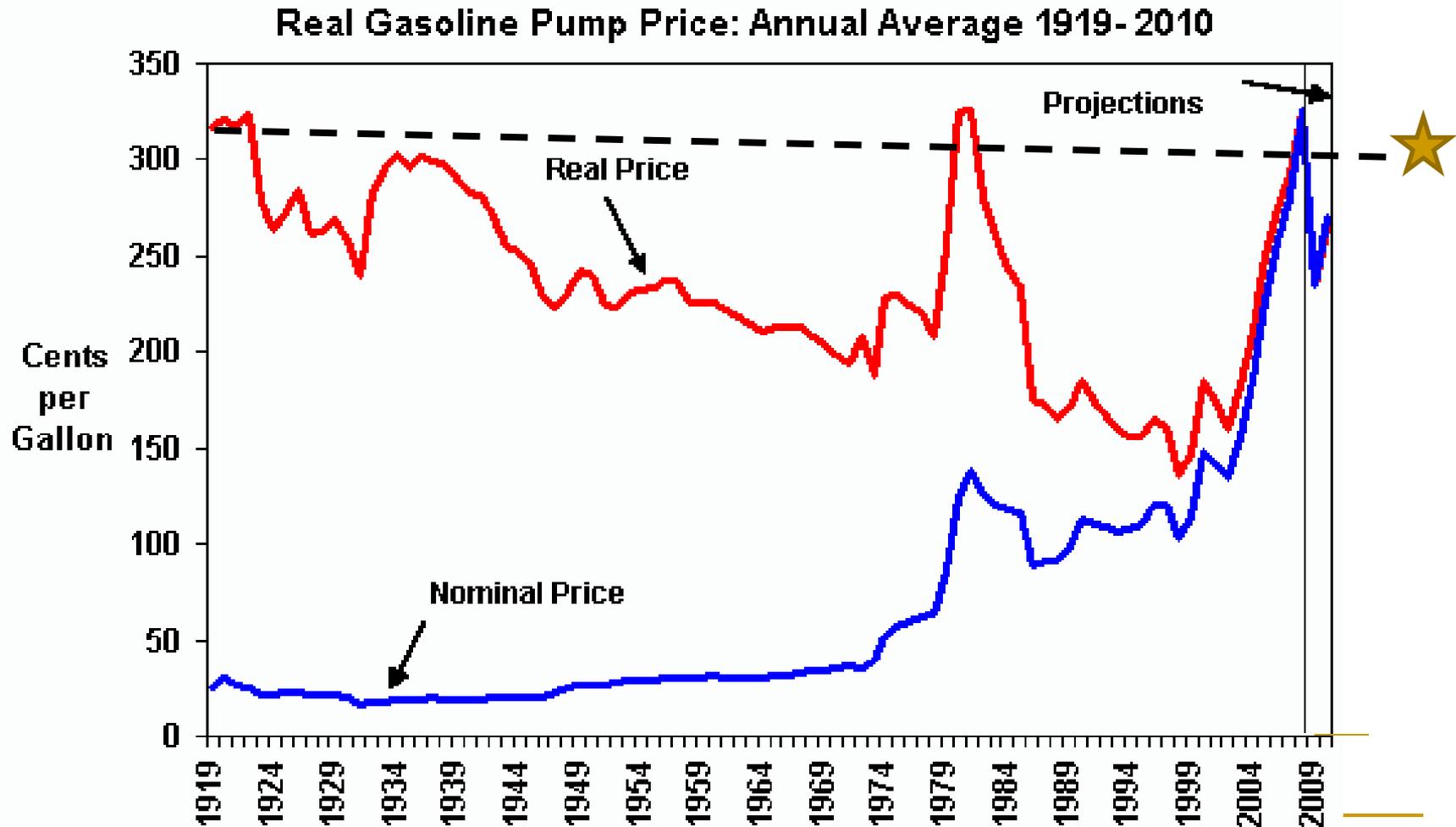
Prices have increased during undergraduates' lifetimes



But, until the recent run-up in prices, the longer term trend has been downward



The average price in early 2015 is between \$2-3.00



Turn to your neighbor

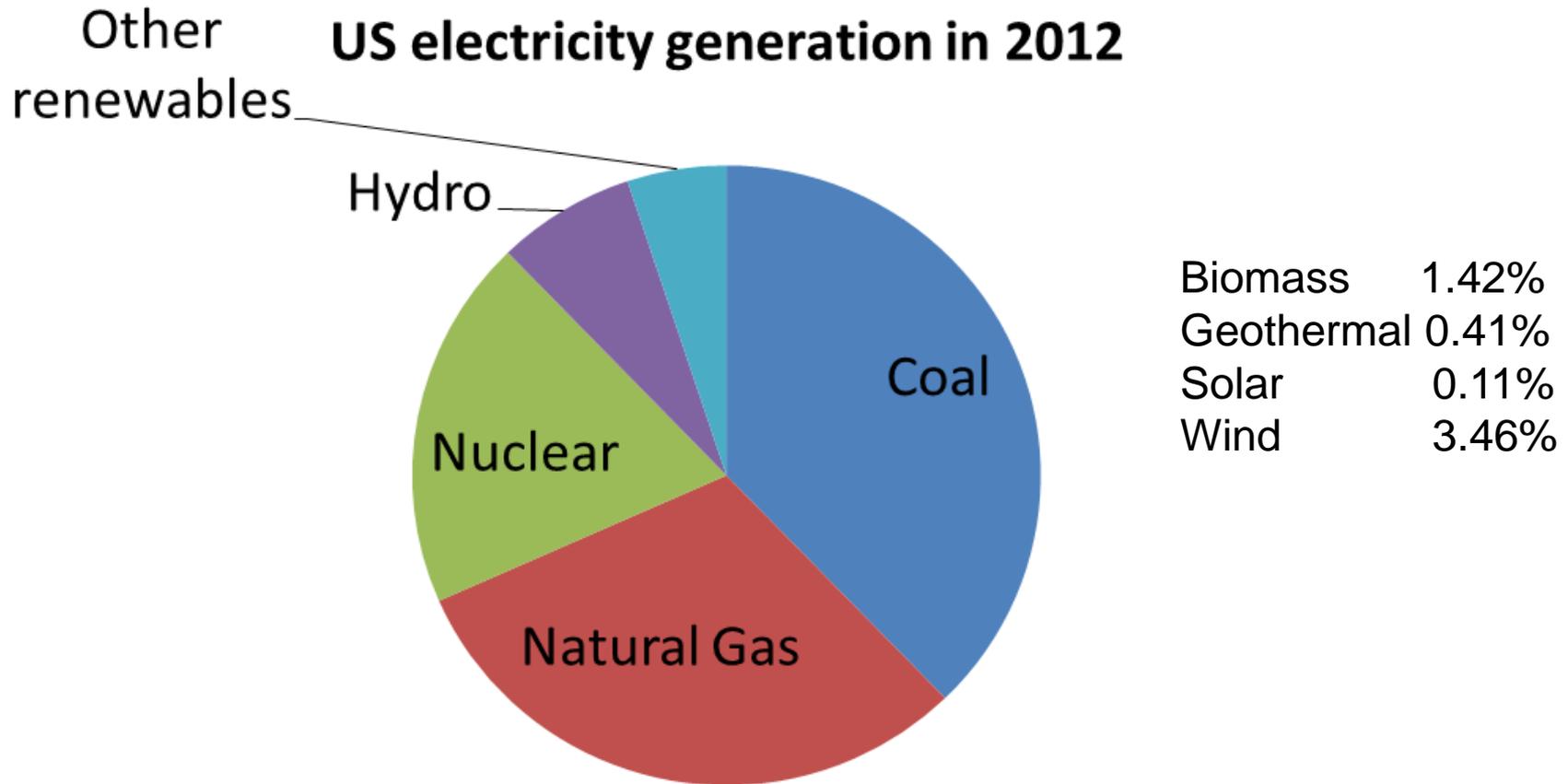
- Why is it reasonable to expect gasoline prices to have risen over the last 100 years?
 - What explains the fact that they did not?
-

US Electricity Portfolio

- How much electricity in the US is generated by solar? Type your answer in as a percent. For example, if your answer is 97% type in 97.



Solar is only 0.1% of electricity

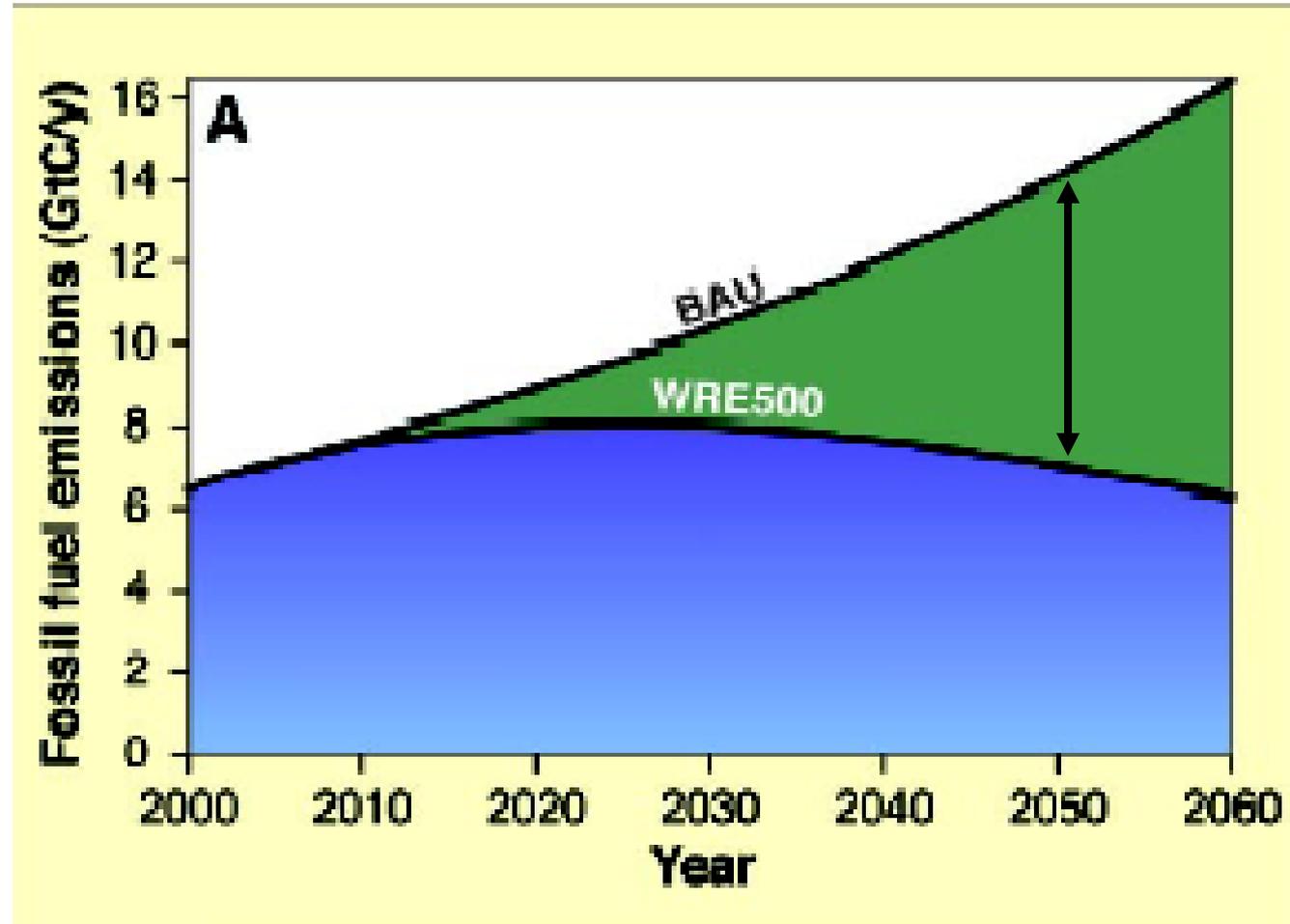


Less than 6% of generation is from non-hydro renewables

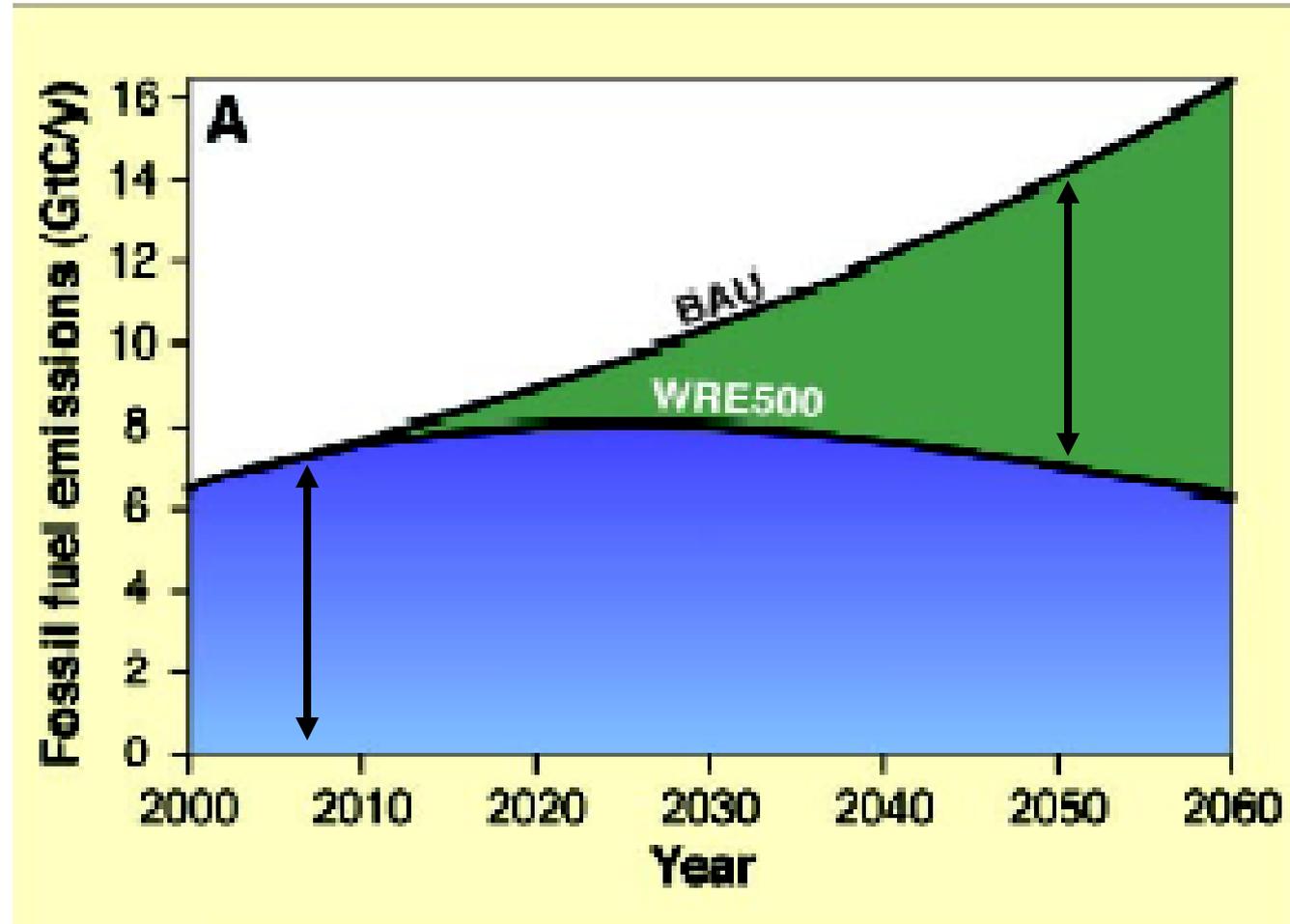


Climate Change

Preventing climate change is a BIG challenge



In just 40 years we need to producing as much as energy as we produce now, fossil free



What can be done about Climate Change?

- Reduce emissions
 - Short run, through emissions policies
 - Long run, through technical change & emissions policies
- Adapt to changes



Technical change

What motivates you

