WASHINGTON — Congressional Republicans on Wednesday opened a formal assault on the authority of the Environmental Protection Agency to regulate greenhouse gases, raising doubts about the legal, scientific and economic basis of rules proposed by the agency.

The forum was a hearing convened by the energy and power subcommittee of the House Energy and Commerce Committee to review the economic impact of pending limits on carbon dioxide and other heat-trapping gases. But much of the discussion focused instead on whether climate science supports the agency’s finding that greenhouse gases are a threat to health and the environment; that finding is what makes the gases subject to regulation under the Clean Air Act.

Lisa P. Jackson, the E.P.A. administrator, was subjected to more than two hours of questioning, some of it hostile, about proposed limits on emissions from factories, refineries, power plants and vehicles.

Republican lawmakers asserted that the science underpinning the regulatory effort was a hoax, questioned the agency’s interpretation of a Supreme Court decision giving it power to regulate carbon dioxide, and accused the Obama administration of sacrificing American jobs in its misplaced zeal to address climate change.

“The E.P.A. and the Obama administration have decided that they want to put the American economy in a straitjacket, costing us millions of jobs and billions of dollars a year,” Representative Joe L. Barton, Republican of Texas, said in his opening remarks. “They couldn’t get it through the legislative process, so they’ve tried to do it by a regulatory approach. It’s not going to work.”

He later told Ms. Jackson that he was delighted she could appear before the committee and said that she should plan to be there frequently over the next two years.
Another Republican, Representative John Shimkus of Illinois, asked Ms. Jackson whether she believed in the law of supply and demand. Ms. Jackson, who holds a graduate degree in chemical engineering from Princeton University, replied, “I was trained in it.”

“But do you believe that as costs go up, supply goes down?” Mr. Shimkus demanded.

“It depends on the elasticity of the cost curve,” Ms. Jackson responded.

A third Republican questioner, Representative Lee Terry of Nebraska, asked Ms. Jackson facetiously if she liked puppies. She started to answer that she did, provided that they were properly housebroken. Mr. Terry sharply interrupted, saying he was only mocking the gentle questions that Democrats were asking to elicit rehearsed answers.

Ms. Jackson repeated her now-familiar defense of greenhouse gas regulation at the hearing, saying that cleaning up the environment would not only improve health but also create jobs.

She said the Supreme Court, in Massachusetts v. Environmental Protection Agency, obliged the agency to determine whether carbon dioxide emissions endangered human health and welfare. Ms. Jackson said that both the George W. Bush administration and the Obama administration had concluded that the emissions do so.

And she strenuously objected to a bill introduced last week by two top Republicans on the committee, Representatives Fred Upton of Michigan and Edward Whitfield of Kentucky, seeking to overturn that court decision and thwart the agency’s efforts to carry it out.

“Chairman Upton’s bill is part of an effort to delay, weaken or eliminate Clean Air Act protections of the American public,” Ms. Jackson said in her opening statement. “Chairman Upton’s bill would, in its own words, repeal the scientific finding regarding greenhouse gas emissions. Politicians overruling scientists on a scientific question — that would become part of this committee’s legacy.”

Mr. Upton said that his bill, called the Energy Tax Prevention Act of 2011, was narrowly drawn to restrict agency regulation only of carbon dioxide and other greenhouse gases, not the other air pollutants that have been shown to have more direct effects on health.

He said that regulating carbon dioxide emissions would make the most abundant fuels prohibitively expensive to use, and would put American manufacturers at a disadvantage compared with industries in countries that have no such rules.

“Needless to say,” Mr. Upton said, “the Chinese government and other competitors have no intention of burdening and raising the cost of doing business for their manufacturers and energy producers the way E.P.A. plans to do here in America. Our goal should be to export goods, not jobs.”

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