



Testimony of Mr. Abraham Silverman

Chairman Murkowski, Ranking Member Manchin, members of the committee, I am honored to appear today to testify on the issue of climate change and what we can do as a country, using market forces, to reduce the greenhouse gas emissions that cause it.

My name is Abe Silverman, and I'm the Vice President and Deputy General Counsel of NRG Energy, Inc., a large, publicly traded independent energy company. What does it mean to be an independent company in the electricity space? It means that NRG is *not* a rate-regulated utility and, therefore, does not have captive rate-payers or a guaranteed rate of return on the capital that we invest. We have to earn our customers, and our shareholders – not our customers – bear the risks associated with the power plants we build and other projects that we undertake.

Our company is also proud to be a leader in acting to address climate change – even in the absence of a comprehensive, federal approach. We have embarked on that effort by establishing science-based greenhouse gas emission reduction targets and making the business decisions that are required to meet those targets in a way that provides consumers with the affordable, reliable and clean electricity they want while generating a return for our shareholders. For our shareholders, and for the general public, we provide granular disclosure of our progress towards meeting those targets. I am pleased to be here today sharing not only what we have done as a company but what we believe the federal government can do to facilitate broader participation – from energy companies and consumers alike – in the actions that are needed to mitigate climate change.

I. Introduction

Avoiding the worst consequences of climate change requires massive carbon reductions, and those actions must be *at a price that consumers can afford*. The American experience is the most impactful, most consistent force for enabling innovation, improving performance and lowering costs for consumers is, in a word, competition. It seems so obvious, but it is important to remind ourselves that clean energy is not exempt from the laws of economics, nor should we expect it to be.

To move towards an environmentally and *economically* sustainable future, our electricity markets need to be re-focused in two key ways.

- First, government needs to stop restricting the right of electricity customers, large and small, to procure the type of energy that aligns with their interests and values. Consumers nationwide want to buy green power. Why do we allow federal and state policies to stand in the way of giving consumers what they want?
- Second, a *competitive* clean energy market, open to all forms of carbon-free power, represents the lowest cost solution to meeting government-set carbon objectives. Indeed, wholesale electricity markets – where the objective is lowest cost reliability – utilize

government-set reliability targets, and then use the market to achieve those targets in the most affordable way.

In working to move towards an environmentally and *economically* sustainable future, there are also a few things that we must avoid. Specifically:

- Don't redistribute precious tax revenue or ratepayers' hard-earned dollars via subsidies for commercially mature generating technologies;
- Don't lock consumers into excessively-priced contracts for specific clean energy technologies when lower cost clean energy is available instead;
- Don't provide corporate welfare to existing power plants *that are profitable* under the guise of promoting carbon free energy; and
- Certainly don't make customers buy overpriced energy from specific well-connected companies.

A better approach is to define the attributes that we are looking for in our energy supply – in addition to reliability – and then incentivize private capital to compete to provide those attributes. Every carbon-free megawatt has the same value to fight climate change. When everyone competes, the lowest-cost resources win. Imagine a competitive, technology-inclusive, market where renewable energy, nuclear, carbon capture, or battery storage projects win because they provide the most green attributes at the lowest price; not because they have the biggest lobbying budgets.

Unfortunately, the concept of a pro-innovation, competitive energy market is presently under attack. In the absence of leadership from the federal government on these matters, many state governments are falling into the same tired pattern of handing out billions to prop up aging, uncompetitive facilities, or signing consumers up to contracts for expensive, one-off generating technologies. I understand that there are good reasons – at least good political reasons – why lawmakers sometimes support subsidies. Areas where power plants are located want to save the jobs. Owners are glad to use any argument to enable a stream of payments to their shareholders. Environmental groups sign on to bailout legislation because too often they see it as the only viable means of increasing green energy funding. While often well-intentioned, many of these programs lock in inefficient and expensive contracts for the next decade or more, without the benefit of ever having opened them up to competition. And they weaken – perhaps fatally – the competitive wholesale markets that companies like mine depend on, which means more jobs lost and other communities that feel the sting of plant closures.

As a society, we need a laser-focus on reducing emissions at the lowest possible cost. Subsidies defeat the markets, defeat innovation, and defeat job creation and new investment. Subsidies, in the form of long-term contracts, are not only wasteful, but risk locking customers into bad deals and forestall innovation for, in some cases, half a generation or more. If we fritter away our societal resources by treating green energy spending as corporate welfare or a jobs program, we risk missing out on the maximum carbon reduction possible and even leave ourselves vulnerable

to a homegrown version of the ‘Yellow Vest’ ratepayer revolt. In short, if we are serious about reducing carbon emissions, we should not be paying more for “boutique” clean energy when less expensive, but equally clean, options are available.

Today, the regions of our country with the most competitive electricity markets – where the objective is lowest cost reliability – provide unquestionable benefits, in the form of unparalleled reliability at the lowest possible price. Because of these markets, the cost of the electric energy we all consume, and the price we pay to maintain the capacity is needed to produce it, are the lowest they have been since restructuring.¹ Innovations in turbine technology led directly to more efficient use of natural gas – utilizing less fuel to produce a MWh and emitting less pollutants while doing it. Forced outage rates are down versus pre-competition levels. The cost of renewables and batteries are dropping. And a burgeoning demand response industry accounts for almost 10% of the supply stack in such key markets as PJM. All of these and other innovations were largely driven by the investment of shareholders’ “at-risk” capital where there was no ability to pass the cost of potential failures along to captive ratepayers.

Addressing climate change in the power sector is – at this point – more of an economics problem than it is an engineering challenge. Our economic problem is that under the status quo monopolists’ top priority will always be to defend their turf by seeking subsidies, including by cynically warning of layoffs. So long as legislators succumb to this political pressure, the innovation and consumer choice that could grow the economy and benefit the environment will be stifled. Fortunately, there are better alternatives.

II. Defining Climate “Success”

What does success look like in 2030, in terms of technology and utility business model?

On the grid, technology will have evolved to what we at NRG refer to as the “Four Product Future” – renewables, controllable demand, battery storage and fast-ramping natural gas – which combine to form the backbone of an affordable and reliable green grid.² In practice, this means that clean energy sources provide the majority of the electrons consumed. Homes, businesses and electric cars possess smart technology that will adjust electricity consumption seamlessly, forming flexible virtual power plants. Massive batteries, capable of storing electricity during times of plentiful sun or wind, inject that stored power back into the grid during times of high energy demand or low production. All while modern, efficient, natural gas power plants stand by to keep the grid humming and balance variability in consumption and production.

¹ Notably, this reduction in costs for energy often has not been noticed by end-use consumers, because the monopoly providers of transmission and distribution service – utilities – spent billions of dollars on new Transmission & Distribution facilities which have dramatically increased customers’ costs for those services even while energy costs have gone down.

² For more on the Four Product Future, please visit: <https://www.nrg.com/insights/energy-education/the-four-product-future-transforming-the-energy-industry-today.html>.

Behind the scenes, the electricity business model will have shifted in equally important ways. An open source platform for buying and selling electricity will exist in place of today's utility energy monopolies. Indeed, nowhere is the need to "quarantine the monopoly" more important than in the energy sector. Many have raised concerns about how big tech companies stifle innovation by operating a dominant platform – and then selling products on the very platform they control. This same conundrum permeates today's utility sector. Everywhere in the country, other than Texas, we are forced to sell our products through utility-dominated market platforms. Why should my company develop a new technology or product, spend the money to test and develop that product, if utility monopolies are then allowed to sell identical products on the platforms they control (often with risk-free, ratepayer-funded capital)? Thus, if we want to see innovation flourish, we need to confine the monopoly business model wherever possible.

III. Solutions

Step 1: Let Consumers Decide

The first big step is empowering consumers to choose, if they wish, to "green" their own power supply free from unfair competition and domination by monopolies. Public opinion polls have consistently found that overwhelming majorities, across parties, support taking action to address climate change. We ought to test if that's real, or not, by letting consumers vote with their pocketbooks. Among larger, commercial and industrial buyers seeking to green their power supply, we have seen powerful advocates³ for open, competitive energy markets enter the fray. Why can't every single person in the United States decide, if they wish to do so, to 'fire their utility' in favor of picking a greener energy solution, and telling a larger pool of companies that they will have to compete – on the basis of cost – for that consumer's business?

Instead, customers in two-thirds of the country must battle powerful regional monopolists who fight to keep their stranglehold on the customer relationship, all in the name of protecting against profit erosion that may come with customers choosing to take their business elsewhere. In Florida, the utility lobby is so strong, that customers looking for the right to produce and sell solar power in the Sunshine state couldn't even get a constitutional amendment on the ballot last November. Fortunately, they will have another chance in 2020, as citizens take their fight for consumer choice to the ballot box again, this time in the form of an initiative requiring Florida to open its electricity markets.

But, the best part of this first step? Enabling enhanced customer choice doesn't cost taxpayers a penny. Putting the power to choose in the hands of more consumers presents a tremendous opportunity to let consumers take control of their own carbon footprint and for innovators to offer options to drive meaningful change. Still, unleashing consumer demand,⁴ by itself, is only part of the solution.

³ See, e.g., the Renewable Energy Buyers Association, a trade group representing large corporate buyers interested in sustainable solutions: <https://rebuyers.org/>.

⁴ See, e.g., The Myth of the Ethical Consumer, by Timothy Devinney, discussing the limits on consumer uptake of sustainable products.

Step 2: The Competitive Clean Energy Market

In a clean energy attributes market, NRG sees head-to-head competition between all zero-carbon resources as the lowest-cost means of achieving ambitious carbon targets. NRG has worked with the well-respected economists Drs. Kathleen Spees and Sam Newall of The Brattle Group to develop a competitive clean energy attributes market that could be implemented at either the federal, state, or multiple-state levels. The market design is laid out in a whitepaper attached to this testimony. It is also the basis of the Competitive Clean Energy Act, which has been introduced into the Illinois Legislature (Senate Bill 135 Amendment 2 / House Bill 125 Amendment 2, introduced by Sen. David Koehler). Our competitive clean energy market adheres to the following key principles:

- Technology-Inclusive: All zero-carbon resources – nuclear, wind, solar, carbon capture and sequestration, and voluntary emission reduction commitments – are allowed to compete to sell their attributes. Every increment of clean electricity, regardless of technology, is paid the same clearing price because every carbon-free megawatt has the same value to fight climate change. Everyone competes. Lowest-cost resources win.
- Quantity Matches Desired Carbon-Free Electricity Content: The market is designed to procure carbon-free energy in the quantities specified by regulators in each delivery year.
- Moves Carbon Price Signal into the Forward Timeframe: Forward market clearing moves the carbon investment price signal three-years into the future, allowing for new entrants to arrange for financing early in the development cycle.
- Financeable Contracts for New Winning Resources: New resources receive financial support (in the form of long-term contracts) that ensures they actually get built.
- Assigns Risk Appropriately: Private capital competes, not only on who has the best technology, but on accepting the lowest rate of return. Investors wear technology, regulatory, and performance risk.
- As Price Goes Down, Procurement Goes Up: Encourages early achievement of clean energy goals, because total clean energy purchases increase as price-per-megawatt decreases (i.e., a downward sloping demand curve).
- Allows Participation from Third-Parties: Opens up lowest cost procurement to third-parties (municipalities, private businesses, etc.) on a *voluntary* basis, encouraging even faster achievement of carbon goals.

Step 3: Re-Define Cooperative Federalism

NRG sees a clear need for federal leadership. Competition for long-term renewables contracts centrally cleared through a centralized market structure is the most promising option for achieving long-term decarbonization at the lowest possible cost. Even more promising would be a coordinated forward auction for renewable and conventional energy that co-optimizes the

procurement of renewable and conventional capacity, resulting in a total fuel mix that delivers the state's preferred carbon goals at the least possible cost, while also ensuring that reliability is maintained. Under such a system, states would achieve all of their environmental goals and consumers would save money in the process.

The main federal protector of competition in the energy sectors – the Federal Energy Regulatory Commission – is, unfortunately, nowhere to be seen on the clean energy playing field. For that matter, it seems to be nowhere in terms of basic protection of well-functioning markets. Congress gave the FERC exclusive jurisdiction over sales of electric energy for resale, as well as programs “affecting” or “in connection with” those sales. That means that FERC *should* have the authority—and, indeed, the duty—to ensure that rules or practices affecting wholesale rates are just and reasonable. But it has struggled to enact even basic efforts to harmonize federal competition policy with state subsidies. If the Agency wants to remain relevant in today's changing regulatory climate, it must take immediate steps to evolve wholesale market structures in a world increasingly concerned with carbon externalities.

If a state picks a politically-favored entity to receive lucrative long-term contracts without conducting a competitive solicitation that is open to all parties, then how can anyone say that the state has provided consumers with rates that are just and reasonable? In the absence of clarity on that question, there is absolutely a role for federal oversight.⁵ In such scenarios, there must be a federal role if the Federal Power Act is to have any meaning as a consumer protection statute.

States are increasingly incorporating carbon, jobs, tax, and other externalities into their energy policies. In isolated cases, states have adopted jobs and economic development programs which “mix and match” environmental and economic goals in a deliberate effort to avoid federal jurisdiction. Clearly, the answer cannot be that FERC is powerless to prevent this type of consumer abuse. Congressional leadership is key to helping FERC refocus on preserving the benefits of competition and restoring a functional cooperative federalism relationship.

Electricity markets in the regions of the country that have elected to restructure and minimize the role of monopoly utilities provide billions in annual savings to consumers while delivering reliability. These highly competitive markets, however, are likewise sidelined from the fight against carbon pollution because we have not added carbon considerations into their core missions of ensuring reliability at the lowest possible costs. As a result, we have denied consumers access to the markets most able to deliver the lowest priced carbon abatement.

Strong Congressional leadership can help break the log-jam that has threatened competitive markets. States are (understandably) reluctant to stall progress on meeting carbon goals. This leaves an opening for Congress to redefine cooperative federalism by, for example, allowing

⁵ For example, regulators in Illinois and New York committed ratepayers to more than \$10 billion in no-bid contracts over the next decade on keeping economically inefficient nuclear plants operating in the wholesale market. Both states implemented these programs without ever testing these investments to determine whether consumers could have received more carbon “bang-for-their-buck” elsewhere. Other states risk falling victim to the same rhetoric, as evidence by recent bailout efforts in Pennsylvania.

states to set the desired carbon content of their electricity, but leave it for federal regulators, running some of the most fiercely competitive markets in the world, to accomplish that goal at just and reasonable rates.