Keynote Remarks

by

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This has been a wonderfully insightful conference so far, and I want to thank both states' chambers for inviting me. We at NRG are proud to be one of the very few Fortune 500 companies led by a Hispanic CEO, Mauricio Gutierrez, and I am delighted to have as a colleague on my team Nelson Reyneri, NRG's director of strategic alliances and policy, who is the chairman of the board of the U.S. Hispanic Chamber of Commerce. It is great to see the organizations work together to put on this timely event.

About NRG

NRG serves approximately 7.5 million residential, commercial and industrial consumers of energy and related services, we are one of the biggest shippers on the natural gas pipeline network in the United States, we own or operate tens of thousands of megawatts of power generation across many fuel sources and renewable technologies, we have a smart home company (Vivint) and a home battery and energy storage company (Goal Zero). Put simply, we have raised and invested many, many billions of dollars in capital over our corporate history, so I am pleased to set the stage on how money gets raised, invested, and ultimately produces value in this part of the American economy.

Investment in the Energy Sector

It is hard to overstate how capital intensive the energy industry is. Globally, $1.8 trillion in capital spending was estimated in 2022 across the energy sector. That is more than nearly any other industry (other than government!). And that figure is projected to grow a cumulative 30% until 2030. To put this figure in context: About 10% of that $1.8 trillion in annual global spending is specifically in the U.S. utility sector, which is divided between generation, electric transmission and distribution, and upgrades to natural gas utilities' delivery networks. The American utility sector has seen about 7% annual growth in capital spending, and this year [2023] it is on track to invest $168B, according to S&P Global Market Intelligence.

A Tale of Two Business Models

But because you have the real experts in finance on the upcoming panel, I thought I would instead wear my hat as a would-be historian, former regulator & past president of the National Association of Regulatory Utility Commissioners to offer a few framing remarks around a huge –but usually unremarked upon – division in the energy sector. Specifically, that divide is about whether government by regulation has chosen to assign the risk of capital investments to companies themselves – or to their customers. Specifically,

1. In one part of the industry – oil and gas especially, and in certain elements of the power sector – you have a landscape filled with risk-taking businesses in competition with one another. The success or failure of their capital investments is on them. If demand falls, if costs rise above their pricing power, if they get outcompeted on technology or marketing or in any other way, they and their capital investment can be wiped out completely. In short, these businesses operate like most businesses in America operate.
2. And on the other side of the industry – mostly in the power industry, but also sometimes in local gas distribution companies – you have almost completely the opposite phenomenon where certain energy companies' prices are not set by competitive forces, but by government. The capital investments of these businesses (or we might say "business"—since in any given area you are talking about one singular monopoly) rely on governmental permission to make them – but once that permission is granted, the risk of those investments almost always transfers to the consuming public.

The energy industry is essentially the only industry that is divided up between two such profoundly different business models. (And you can probably already tell I am skeptical about one of these!)

People often speak monolithically about "energy companies," but these businesses are completely different from one another in how they make money and the incentives that they face, and this has sometimes obvious and sometimes not-so-obvious implications about their capability for innovation, the extent to which they depend on the largesse of government, the speed at which they can move, and the opportunities they present for meaningful reform that could benefit the American people and further our national interests.

Competitive Risk-Takers vs. Monopoly Cost-of-Service

To unpack this difference a little further, consider much of the **Oil & Gas industry**, which has been arranged on the basis of competitive market principles.

> -Upstream, you have "Exploration & Production." How do you maintain capital discipline? How much of your capital needs to go into the ground to produce wells in fields to stay even or ahead? The overall need for your product, your cost of production, your relative competitive advantage versus your peers in the field, and indeed in fields all across the world, are all relevant considerations for which you own the risk.

-Downstream, there is Retail. Probably you can't conjure up a better image of American entrepreneurship than the gas station, with their iconic brands that are made to create customer-friendly, loyal relationships, their amenities, and their cross-selling products for higher value and better margin to win that loyalty and, with it, the business of customers who can go anywhere—probably even just across the street—for another alternative.

-Midstream you have the transportation infrastructure, which include oil and gas pipelines and LNG terminals.

-Here it is true that some government economic regulation exists. But, in the first instance, gas pipelines need subscribers to their capacity—called shippers—in order to be certificated in the first place. While the Federal Energy Regulatory Commissions & sometimes State Commissions typically set maximum rates for pipelines, these pipelines still are exposed to the vicissitudes of demand. If there are no shippers, a pipeline doesn't get a bailout and it goes bust.

-LNG is even more risk exposed. Before the shale boom started fifteen years ago, we saw a number of LNG *importers* go under. While federal regulatory approvals are required to operate an LNG terminal, it's not really economic regulation: it's siting, permitting, asking whether it is in the national interest to export our domestic energy sources.

The point of this exposition is to say this: Ultimately, capital investors in most of the Oil & Gas sector bear the risk that their projects are in the money – or not.

By contrast, the **Electric-Power sector** looks very different from this – at least in many parts of the United States. In most states, it is made up of utilities that enjoy a formal monopoly on retail sales and are subject to "cost-of-service regulation" to set prices, not competition.

-I subject my unfortunate U-Chicago students to several hours of how to calculate a utility's revenue requirement. But to simplify: The prices you pay a monopoly utility are usually based on a pass-through of operating expenses they incur, plus a return on the total amount of capital you invest, plus a return of that invested capital over time. Their costs are only as high as they can demonstrate them to be.

You may be asking: What's wrong with setting prices based on costs? Well, there are several perverse incentives at hand.

- First, when you set prices based on costs, things have a nasty tendency to become more costly. Generally utility sector profits are primarily a function of total capital spending. So you have utility management operating under the mandate: "Spend more, make more."
- Second, once a utility makes the capital investment, it is largely indifferent as to the efficiency of its operation. Compare this to a well or a pipeline, where production and throughput are make or break. But, again, in the cost-of-serve monopoly model, your profits are based on capital invested – and not efficiency.

- Third, there is a problem of accountability and good government. You might think a "regulated utility" means an accountable business. I disagree. A captive base of ratepayers creates a plaything for governments who want to pack social and environmental policy into utility regulation, outside the balance sheet of the state budget.

  My friend Pat Wood, the former chairman of FERC, tells a story that when he first took a job regulating utilities in the George W. Bush administration in Texas, he asked the then-Governor why he was so interested in introducing competition into telecommunications & energy. Gov. Bush answered: "Because these utility guys think that I'm their customer more than their actual customers are their customers. And that's wrong." I strongly associate my own views with that remark.

Simply put, there is a lot at stake in this **Tale of Two Business Models: risk-taking and competitive on one side; and monopoly, cost-of-service on the other.** The stakes are becoming even higher because in essence these two business models are increasingly in competition with one another.

To give one example of this: As we electrify the economy, there are going to be certain investments that had been in the "competitive" column that may move to the "monopoly" column. Take downstream supply for energy needs in transportation. We already see in some parts of the United States utility monopolies proposing to "rate base" EV supply infrastructure – essentially, making investments that are guaranteed on the back of all ratepayers, competing against gas stations that are market-exposed.

To go upstream, there is a very direct competition between rate-based power plants (like utilities' offshore wind) and the natural gas it substitutes for, which is more market-exposed.

Another interesting twist is that the Electric-Power sector is one of the very few networked industries that is largely left to state decision-making. So, each state can, does, and will continue having to make their own choices as to the appropriate structure of the Power business model.

The Virginia Administration's Leadership and the Opportunity for Competition in the Electric-Power Sector

In the vein of state leadership, it is really heartening to see policymakers thinking about what can be done to inject more competition into the Power Sector. Gov. Youngkin and his administration deserves applause in particular for identifying "competition" as 1 of 5 pillars in his Virginia Energy Plan released this time last year.

Presently, in about 14 states, including Texas, the largest electricity market, and just across the way in Maryland, customers have pretty much a free choice in their supplier. In these states, consumers can shop for power pretty much the way they shop for cell phones and airline tickets—other products that once had their prices or the identity of suppliers defined by government. A customer's choice in such a market effectively terminates a monopoly's recourse

to consumers as a sink to outsource their risk for one important part of the sector: power generation.

If you can't monopolize the supply of electricity to customers, you have to be much more concerned about whether your power plants are actually going to perform efficiently when needed, and whether they are going to be economic in the long term versus alternatives and in light of consumer demand.

Virginia at present has only a modest opening for the very largest customers to choose. Because of those limitations, only about 10% of energy in the state is competitively supplied today. But it has shown great results.

A typical person in Virginia interacts with entities being served with competitive power on a daily basis. Getting coffee in the morning at a Starbucks or Wawa, going grocery shopping at Albertsons, using their T-Mobile cellphone, and going shopping at Target.

For everyone except these lucky few, there is a lot of unfortunate regulatory red tape that needs to be trimmed.

This room is full of small business owners. Imagine a scenario where you wanted to buy a printer, an appliance, or a vehicle in Virginia. And you showed up at the Staples, Best Buy, or Ford dealership and were told, sorry, but we will need to see your license to buy what we are selling. Unfortunately, that is essentially what is happening in Virginia (but not in Maryland) today, where in the Commonwealth:

- Everyone except large customers, in order to have the privilege of shopping for an alternative energy supplier, would literally have to hire a lawyer, file an application, and ask the Virginia utility regulator (the State Corporation Commission's) permission to shop. More likely than not, the monopoly would object—no one likes to be competed against, after all!—and then cost-of-service regulation would allow it to use ratepayers' money to fund objections to its own customers' shopping. That's wrong. It should not be so difficult to shop around.
- There also exists in Virginia law a contingent provision to allow customers of any size to shop for an all-clean-energy product, but the door has now closed to that opportunity because of what we in the business call the "kill-switch." That "kill-switch" is this: As long as the utility provides a clean-energy product—no matter how unattractive in its price or the details of its supply, no matter how many customers subscribed to their offering—then the utility was permitted to re-monopolize this market and customer shopping would end immediately in this market. The utilities did just that, and it has shut off thousands of customers who were waiting in line for competitive suppliers for clean-energy products.

  You don't need to be a true believer in clean energy to think this is wrong. The unfortunate reality of this utility "kill-switch," this closed door to competition, is that all the costs of Virginia's extremely ambitious (and possibly quite expensive) clean energy

policies will be socialized to *all* customers – rather than borne by the customers who have expressed the greatest desire to go to 100% clean energy more quickly. Restoring the ability of these customers to shop would allow competition to surface the winners and losers of the clean energy debate, rather than have Government in the position of choosing them.

Virginia has the opportunity to cut this red tape and to ensure that the door opens a bit wider for competition and I personally am very enthusiastic about the opportunities for innovation that would unlock.

Challenges and Opportunities Ahead

Earlier today, Gov. Youngkin and members of his cabinet did an excellent job spelling out the challenges and opportunities the Commonwealth faces:

1. the extraordinary growth in electricity demand in the Commonwealth,
2. the need for both innovation and reliability in the Electric-Power sector, and
3. the imperative to keep costs under control

That is a tall order, but I think competition in this sector can help achieve these factors and put them in an appropriate balance. By contrast, I cannot see how trying to sieve all these objectives through a monopoly will succeed. The utility can be a helpful partner in some objectives like small modular reactors to be sure, but in other efforts, it can be hobbled by misaligned incentives, a single point of failure, or an impediment for customer-led innovations and competition in the marketplace.

Affordability. Though the market for competitive supply is very limited, the positive results in Virginia speak for themselves. The roughly 14,000 Virginia Commercial customers who have shopped saved $88M in the last 3 years compared to what they would have paid in energy-supply costs to utilities. That is the dividend of suppliers like NRG sharpening our pencils to outcompete our peers, and the incumbent utility for that matter, to earn the business of the few customers allowed to shop in the Commonwealth. It is also worth noting that even while taking advantage of competition in the supply of electricity, these customers remain customers of the utility for its important and valuable delivery services, and they have continued to pay their fair share of utilities' costs for upkeep of the grid at rates established by the State Corporation Commission. If customer choice were expanded to more customers, it's easy to see how the benefits could extrapolate into the billions.

Sometimes, I hear utilities talk up their "obligation to serve" and the supposed "rate stability" that their service offers. But the data does not bear that out. The rates that Commercial customers of Regulated Utilities in Virginia paid for electricity supply increased 25% between 2021 and 2022, despite being supplied by supposedly price-stable monopolies. In fully competitive markets, where consumers have choice, an increase also occurred – but to just use Maryland as

an example, since 2017, the rate of increase in Virginia has been 1.5x what it has been in Maryland for Commercial customers supplied by competitive retailers of power in that state. So, ironically, you are seeing more of what we in the industry call "rate shock" in some monopoly states than in competitive markets.

One reason for this result is that, in competitive markets, consumers can actively insulate themselves from price shocks and lay off this risk to their suppliers by signing 1-, 3- or 5-year fixed price deals, which makes the shocks that can and do occur in the wholesale market the problem of their supplier, not the customer. By contrast, these costs generally just pass through regulated utilities through rate adjustments and tracking mechanisms.

Reliability. Meanwhile, there is no evidence that reliability is diminished by competition; in fact, just the opposite. Winter Storm Elliot, which impacted the whole eastern United States last Christmas, saw monopoly utilities fail in the Carolinas. Meanwhile, the power stayed on in every single competitive power market. In Winter Storm Uri in 2021, in Texas, the power went out, but the remaining monopoly utilities' fleets of power generators underperformed the competitive part of the sector in the state, an instructive lesson that "competition" did not cause the blackout.

Growth. Bringing us back to investment and finance, I'll conclude on this note: Obviously it is easier to finance projects that have recourse to a captive base of customers who pay whatever prices the government sets for a monopoly.

But there is a lot of risk about being "wrong" in an energy sector undergoing a big transition with lots of technological changes. As we've talked about today, that risk in the oil & gas world gets housed with companies making the investments. All too often in the utility sector, it falls on consumers. While there is a careful balance to be struck in this regard, there need to be more opportunities for competitive suppliers to take on the risk of making investments to serve customers.

And for Virginia specifically, the simple reality is that there is more than enough growth and opportunity in the Commonwealth to ensure that competitive suppliers and customers have a seat at the table in determining the future of Power supply in the Commonwealth.

Thank you again to the Chambers for having me, to the Youngkin Administration for its bold policies in this space, and for all of the dedication of the people in this room who work so hard on these issues every day.