Remarks As Prepared

John W. Rowe, Chairman CEO, Exelon Corporation
Energy Policy: Above All, Do No Harm
American Enterprise Institute
Washington, DC
March 8, 2011

Introduction/Grace Notes

Thank you Chris for your kind introduction and to AEI for hosting me here today.

I am here today to talk about electricity, natural gas and the strange mix of mandates and markets that we call energy policy.

Those of us who come to AEI have a deep belief in the moral importance and practical efficiency of markets and property rights.

> We prefer that government mandates broadly and predictably frame markets, establish property rights, price externalities and leave the actual outcomes to the hidden hand.
>
> Those preferences are surely my own, but my 27 years leading electric utilities constitutes a base of experience more reminiscent of the Court of the Stuarts than Laissez Faire – more akin to Pepys Diaries than the Wealth of Nations.
>
> Electricity, like horse racing, gambling and prostitution in Nevada is too much fun to leave to the market.

To begin, my company, Exelon, is one of the largest electric and gas utility companies in the United States.

> We own two delivery companies, ComEd in Chicago and PECO in Philadelphia, and keep the lights on for about 13 million people in Illinois and Pennsylvania.
>
> We are one of the largest generators of electricity in the country, the largest nuclear power plant operator, with 17 reactors, and the largest generator of clean, low-carbon electricity through our nuclear power plants, hydro, wind and some solar.
>
> We are also the largest company that is totally committed to competitive markets and totally dependent on the prices we can obtain in them. Ironically that makes Exelon almost as dependent on natural gas prices for earnings and growth as a gas exploration company.

I am, of Course, the Alleged Carbon Bandit

For most of a decade, I worked on cap and trade legislation because:

1. The science of climate change is real, as spelled out in many National Academy of Sciences reports. (See slide 2 below.)

2. A carbon tax seemed unlikely, and still does.

3. The other proposed, non-market solutions, like generation technology mandates, cost consumers more and contribute less to solving the problem.

4. And, it offered my company a way to improve its earnings and profit from its cleaner power.

At AEI, or anywhere else, I make no apology for the fourth factor. I note, however, that Exelon constantly advocated price caps on CO2 allowances to protect the economy and consumers in the early years, and the $15 per ton cap we advocated is less than a quarter of the cost of the mandated clean energy purchases. (See slide 3 below.)

But, carbon legislation is not going anywhere anytime soon – certainly not in this Congress.

Exelon remains committed to our goal of reducing, offsetting or displacing our entire carbon footprint by 2020 – and, we are halfway to our goal.

However, Congress and the states, in well-intended efforts to clean the generation fleet, have enacted and continue to float proposals that would burden consumers, cripple markets, and increase the federal debt, while doing little for air quality and nothing for the nation's competitive position

First – Congress Should Do No Harm

Unlike most people who come to Washington, in my post carbon bandit outfit, I am not here to ask Congress for anything. In fact, I'm asking that Congress do nothing. Thankfully, this is an area where a divided Congress may excel.

Now, the reason that Congress can do nothing is that nature and technology have generously coincided to provide a great blessing – a clean, competitive, and inexpensive windfall.

That windfall is abundant natural gas – a genuine elixir that will deliver the cleaner energy we need to compete in the world.

New gas finds, both conventional and shale gas, have dramatically increased our domestic natural gas supplies. The U.S. is now the third largest producer of natural gas after the Middle East and Russia.

The Colorado School of Mines estimates that the total potential of U.S. gas supply increased by 61 percent from 2000 to 2008.

And they are not alone; CERA, MIT and others all believe the U.S. is flush with natural gas.

Natural gas enhances our energy security.

Unlike oil, nearly all of our natural gas supply is produced here.

Natural gas can reduce our dependence on oil if we fuel vehicles with natural gas.

Replacing 3.5 million heavy-duty vehicles with natural gas vehicles would save more than 1.2 million barrels of oil per day – more than the United States imported from either Venezuela or Saudi Arabia in 2009. It would also improve the annual trade balance by approximately $43 billion.

Natural gas is the cleanest fossil fuel. It emits:

Approximately 80% less sulfur dioxide and nitrogen dioxide per megawatt hour (MWh) than coal;

No mercury or particulates;

And, 55% less carbon dioxide per MWh than coal.

The natural gas industry creates jobs.

According to an IHS Global Insight study on the natural gas industry, 100,000 direct jobs were created from 2006 to 2008.

Natural gas has already jumpstarted the transition to clean energy.

Forward natural gas prices are lower than coal on a dollars per MWh basis and are expected to stay lower until 2020.

18 companies have announced their plans to retire or mothball nearly 12 gigawatts (GW) of coal-fired generation nationwide – they are simply no longer economic.

Gas usage in the utility sector was up an average of 6% year over year for the first half of 2010 compared to 2009.

Inexpensive natural gas produces cheaper clean electricity and that is one key to U.S. competitiveness. And, as one who survived the nuclear cost overruns of the 80s, I am painfully aware that cheap gas will get you if you bet against it.

U.S. energy policy has been driven by a mess of mandates and power subsidies for nuclear, cleaner coal, gas, wind, solar and other renewables – a constant urge to pick winners and losers.

Congress needs to slow down. We are already doing enough to give all of these things a chance.

As Oliver Twist did not say, “no more please.” (See slide 4 below.)

Cheap natural gas allows the energy market to work and technologies to compete without introducing new market distortions.

Through our resource guide, Exelon 2020, we have examined the cost of different technologies that would clean up the electricity fleet in PJM – our largest market and home to 163,500 MW of generating capacity. (See slide 5 below.)

Neither new nuclear, coal with carbon capture and sequestration, wind nor solar are economic. They are not economic because of energy prices, an excess of generating capacity and very low load growth.

Energy efficiency and uprates at existing nuclear plants are economic at today's prices.

New gas plants and coal to gas switching are the next cheapest options at a cost of $69 per MWh and $82 per MWh respectively, and those sources of cleaner energy are only needed as demand returns or supply is tightened by EPA regulations.

New wind, new nuclear, solar and clean coal all cost over $100 per MWh when you take into account the capacity factors, supply back up and so forth. Federal subsidies shift a portion of the costs from electric ratepayers to taxpayers, but do not change the overall economics.

When new nuclear, coal with carbon capture and sequestration, wind and solar are forced into the market through mandates, they create a discriminatory playing field.

For instance, wind currently needs about twice what the market is paying for it to break even.

Wind can only be built if it gets a renewable or clean energy credit, which consumers pay for, or if someone is willing to pay wind's higher price, which consumers will also pay for. And this is on top of the production tax credits, which taxpayers pay for.

However, even though the cost of wind is above market, because of mandates, it bids into the market much below the market price, often at zero. This collapses the clearing price for the rest of the market.

Of course, taxpayers also pay because subsidizing energy technologies adds to the federal debt.

Chairman Upton has stated that renewable energy subsidies have cost the taxpayer $100 billion over the past ten years. Yet, even with this high level of government support, wind and solar are still not cost competitive.

Renewable energy is not the only technology to receive money from the government – coal, oil, gas and nuclear combined have received billions of dollars in government support.

Some in Congress talk about doubling or tripling the size of the existing nuclear fleet to face our energy challenges. Since these plants are not currently economic at today's low natural gas prices, the government would have to spend $300-600 billion to get these plants built.

Congress should not expand the nuclear loan guarantee program beyond the current $18.5 billion already allocated and should not extend the PTC and ITC tax credits. And, I say this not just as a nuke, but also as a new owner of 735 MW of wind and the largest urban solar facility in the United States.

Wind and solar will become more economic, just not yet. Solar costs will continue to fall, and wind's economics improve as more coal plants retire.

Unlike solving the problems of social security or Medicare, where people must share pain, we can stop energy subsidies without losing the benefits of a clean energy future.

States also need to stop intervening in energy markets.

Illinois and New Jersey, two states we operate in, have considered or enacted legislation that will bring uneconomic generation into the market in the name of jobs.

In Illinois, some legislators wanted to build a 602 MW Integrated Gas Combined Cycle coal plant with some carbon capture and sequestration. The cost to build the plant would be over $3 billion.

The capacity price needed to make the plant economic would be in excess of $1,500 per megawatt day (MWd). Currently the capacity market trades between $25-30 per MWd. Its all-in costs were estimated at $200 per MWh.

This unit could not run enough to be economic, but someone would have to pay to bring it to market – in this case, Illinois ratepayers.

Like mandates, the unit would bid below market (because it is being paid outside of the market), and collapse the overall clearing price for the market.

New Jersey has passed legislation to do the same thing, except with a new natural gas plant – at least the plants are close to economic, but the bidding behavior will be anti-market.

AEI and other conservative, pro-market think tanks have been skeptical about market-based carbon legislation, but they have not put the same emphasis on the policies that would distort markets. Beware lest your fear of second best solutions opens you to far worse.

In addition to opposing electricity mandates and eliminating energy subsidies, Congress needs to let EPA do its work on the transport and toxics rules.

Now, of course, these rules will be market intrusions, but they internalize some increasingly nasty externalities, and do so consistent with current law as construed by many court decisions.

Thus far, the costs of pollution have been borne by society – in health care costs and environmental damages – but that cost is not included in the electricity price for burning coal.

The National Research Council found that the mean cost of damages per kWh from sulfur dioxide, nitrogen dioxide and particulate matter alone was $32 per MWh.

For the most polluting plants, this cost rises to $120 per MWh on top of the existing average generation price of electricity from coal of around $30 per MWh.

Total damages from these pollutants are $62 billion annually.

Now we know that the cost of externalities is a dark art. But, we also know they are substantial.

Reflecting these costs in the market will pick the most inexpensive technologies to clean up the stack.

You may not believe that the science of climate is settled, but you cannot argue that sulfur dioxide, particulates, mercury, arsenic, lead, hydrochloric acid and other acid gases, dioxins and the other toxins are not harmful to human health.

Sulfur dioxide causes acid rain and aggravates respiratory problems.

Particulates can cause severe respiratory problems and increase the chance of heart attack and stroke.

Mercury is a potent neurotoxin that causes neurological and developmental problems.

Arsenic is a poison that increases the risk of skin, lung, bladder, liver, kidney and prostate cancer. It can also cause liver disease, anemia and gangrene.

Acid gases are corrosive to human tissue and combine with water to form particulates.

Dioxins are highly toxic and can cause reproductive and developmental problems, damage the immune system, interfere with hormones and cause cancer.

EPA is enforcing the Clean Air Act's requirements. The Clean Air Act just celebrated its 40th anniversary last year, and the last major amendments to it are now over twenty years old.

The rules EPA is proposing are neither new, nor unexpected. In some cases, EPA has been working on the rules for ten years or more.

EPA is merely enforcing the law. A law that was updated in an overwhelmingly bipartisan way in 1990 – with 93% of the House voting for it and 89% of the Senate.

70% of coal retirements by capacity due to either EPA regulations or coal/gas economics are over 40 years old.

These regulations will not kill coal. 66% of the coal fleet has already installed or is in the process of installing the controls necessary for compliance.

In fact, modeling done on the impacts of these rules shows that up to 50% of retirements are due to the current economics of the plant due to natural gas and coal prices.

Most plants that are over 50 years old have not put on any pollution controls.

They are typically very small – under 300 MWs – and extremely inefficient, have weak profit margins and low capacity factors.

They are the equivalent of sending a 1959 Cadillac out to compete with a Chevy Volt.

The rules will move the generation of electricity more toward natural gas.

The existing natural gas fleet can cheaply accommodate the majority of coal retirements. Deutsche Bank believes that two-thirds of the coal to gas switch can be met by increasing the utilization of the existing gas fleet.

And if new plants need to be built, new natural gas combined cycle plants cost less than half of a new coal plant and only a sixth of the cost of a new nuclear plant. They can also be built in half the time it takes to build a new coal plant.

Finally, the rules will create jobs.

A recent University of Massachusetts study found that between 2010 and 2015, capital investments in pollution controls would create 291,577 year round jobs on average for each of those five years.

While all jobs estimates are loose, Chevy Volt jobs are better than a ‘59 Cadillac job.

Both EPA and the President have varied authority to protect against local hardship. Those asking to delay the regulations would be better advised asking for authority to offset requirements on some plants with credits for shutting down others.

Conclusion

My message to Congress is simple: No more please.

We are at a unique time in energy policy. Congress and the Administration need not do anything to drive the transition to a clean energy economy. The energy markets have begun the transition already.

Natural gas is Queen. It is domestically abundant and inexpensive and is the bridge to the future. Because of natural gas, there is no need for expensive mandates and subsidies. Natural gas allows us to compete with China and India.

EPA's rules enforcing the forty-year-old Clean Air Act will level the playing field – putting those who have not installed controls on par with those who have. These are 50-year-old, small, inefficient plants whose day has come.

The '59 Cadillac couldn't compete with efficient Japanese carmakers and these coal plants won't compete with China.

But market-driven gas plants will.

So these are my thoughts – hardly those of diehard laissez faire, very much concerned with the practical implementation of environmental requirements, but still and all, the most consistently pro-market CEO in my industry.

Above All, Do No Harm

American Enterprise Institute

John W. Rowe
Chairman and CEO
Exelon Corporation

March 8, 2011

The Science of Climate Change is Settled

"Some scientific conclusions or theories have been so thoroughly examined and tested, and supported by so many independent observations and results, that their likelihood of subsequently being found to be wrong is vanishingly small. Such conclusions and theories are then regarded as settled facts. This is the case for the conclusions that the Earth system is warming and that much of this warming is very likely due to human activities."

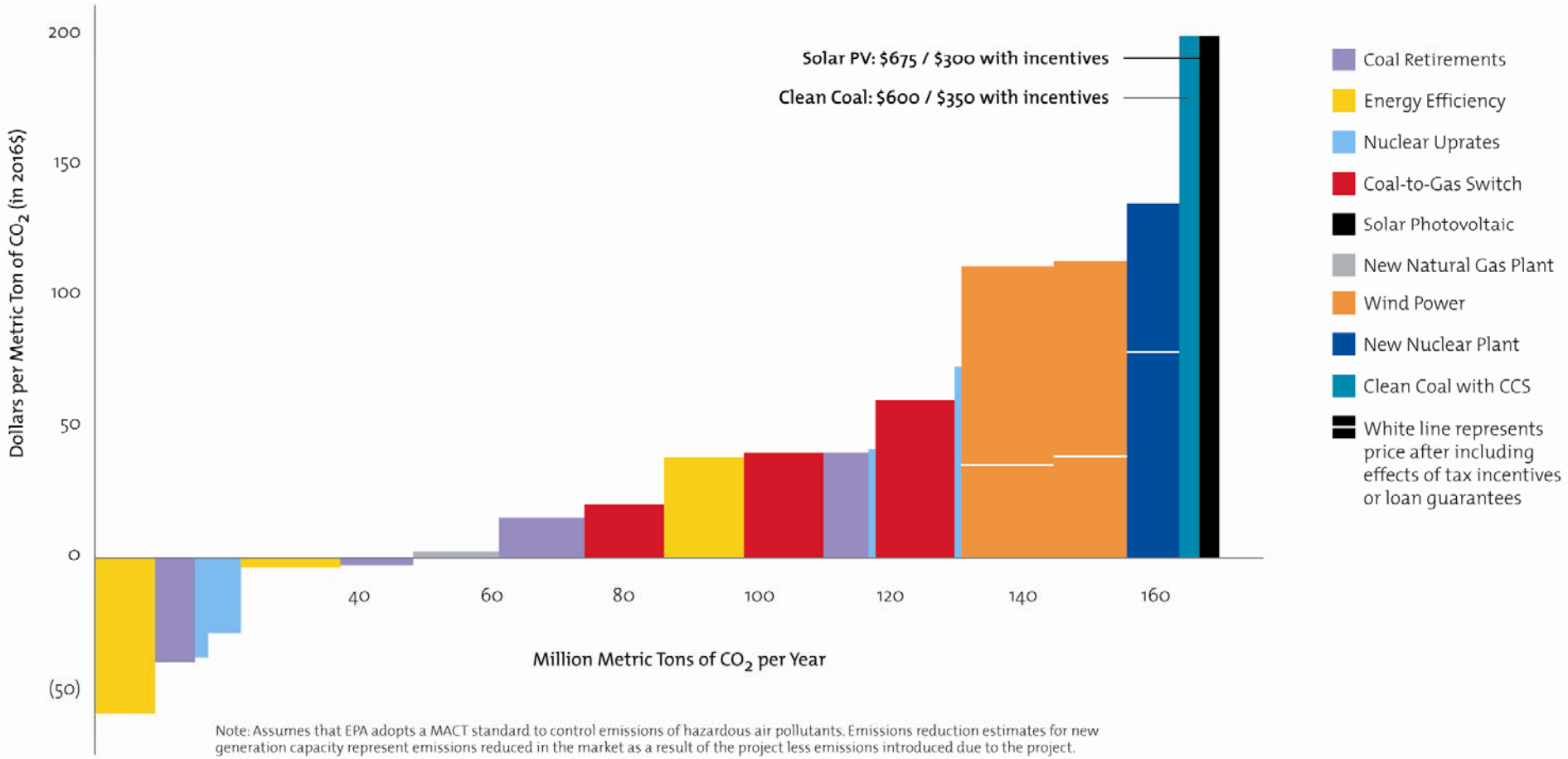
National Academy of Sciences

May 2010

Exelon®

PJM Supply Curve of GHG Abatement Opportunities

Cost Per Avoided Ton of CO2 of Clean Energy Options in PJM



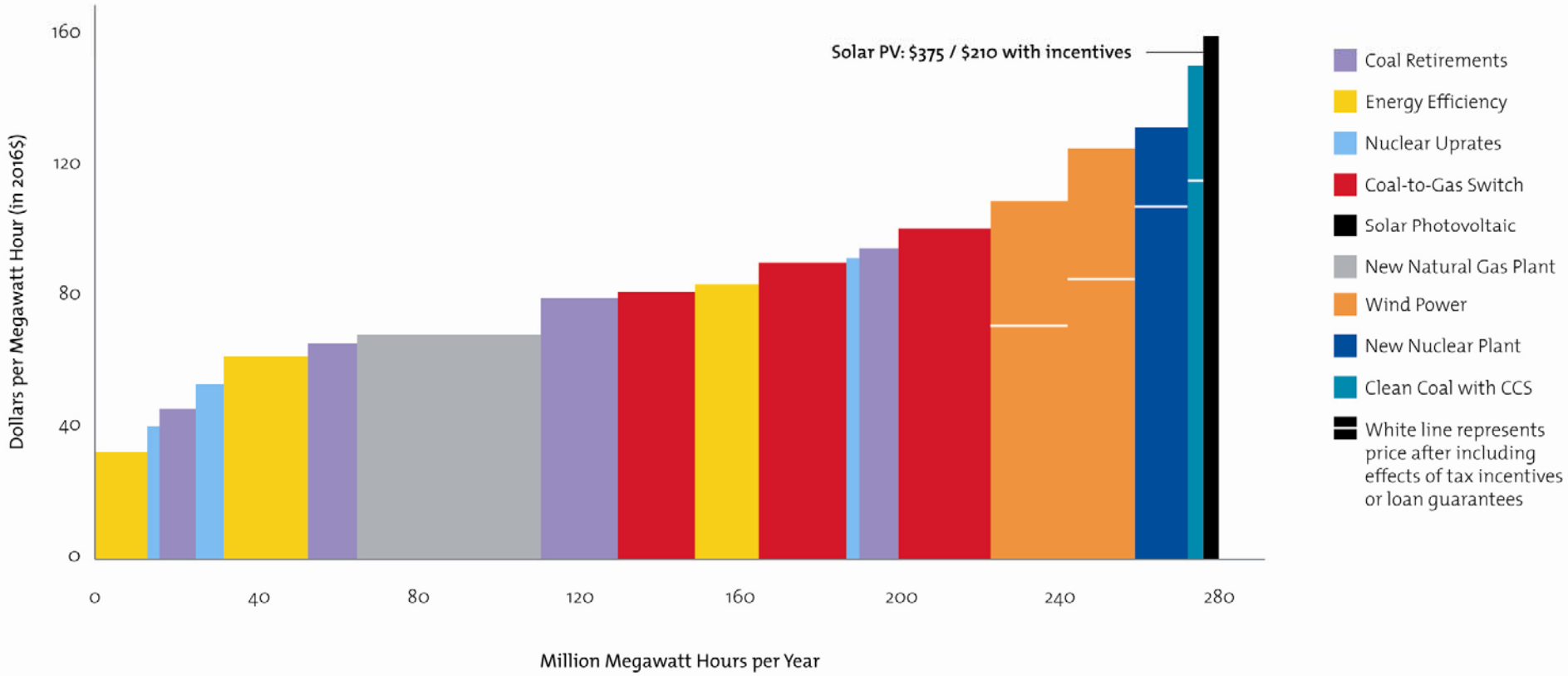
Note: Assumes that EPA adopts a MACT standard to control emissions of hazardous air pollutants. Emissions reduction estimates for new generation capacity represent emissions reduced in the market as a result of the project less emissions introduced due to the project.

Technology cost assumptions (in 2016 $/kw):
- Combined-cycle gas turbine: $1,300 - $1,700
- Wind: $2,000 - $2,500
- Nuclear: $5,000 - $6,000
- Clean coal with CCS: $5,500 - $6,500
- Solar photovoltaic: $3,000-$4,000

No More Please

There are Cheap Ways and Costly Ways to Clean the Generation Fleet

Levelized Cost of Clean Energy Options in PJM



Note: Adjusts for the market value of the generation's reliability and production profile.

Technology cost assumptions (in 2016 $/kw):
- Combined-cycle gas turbine: $1,300 - $1,700
- Wind: $2,000 - $2,500
- Nuclear: $5,000 - $6,000
- Clean coal with CCS: $5,500 - $6,500
- Solar photovoltaic: $3,000-$4,000