

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of the 2018)	
Long-Term Forecast Report of Ohio Power)	Case No. 18-501-EL-FOR
Company and Related Matters.)	

In the Matter of the Application of Ohio)	
Power Company for Approval to Enter)	
Into Renewable Energy Purchase)	Case No. 18-1392-EL-RDR
Agreements for Inclusion in the Renewable)	
Generation Rider.)	

In the Matter of the Application of Ohio)	
Power Company for Approval to Amend)	Case No. 18-1393-EL-ATA
Its Tariffs.)	

**DIRECT TESTIMONY OF
DAVID C. RINEBOLT
ON BEHALF OF OHIO PARTNERS FOR AFFORDABLE ENERGY**

January 2, 2019

1 Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

2 A. My name is David C. Rinebolt. My business address is PO Box 1793, Findlay,
3 Ohio 45839-1793. I am the Director of Special Projects for Ohio Partners for
4 Affordable Energy ("OPAE") and I appear in this case as a witness on its behalf.

5
6 Q. PLEASE DESCRIBE YOUR BACKGROUND AND QUALIFICATIONS FOR
7 YOUR TESTIMONY IN THIS PROCEEDING.

8 A. My career has covered a broad spectrum of activities in human services
9 programs and the energy industry including policy analysis and program
10 management at both the federal and state levels. I served as Deputy Director of
11 the State of Minnesota Washington Office from 1983 through 1985, focusing on
12 human services, energy and environmental issues. Between 1985 and 1988 I
13 served as Senior Research Associate for Energy with the Coalition of
14 Northeastern Governors Policy Research Center, focusing on low income energy
15 assistance programs, new energy technologies, and wholesale markets and
16 regulation. I was Director of Research for the National Wood Energy Association
17 and Counsel to the Solar Energy Industries Association from 1988 through 1990,
18 working on research and development, regulatory issues, and siting and
19 permitting of renewable energy projects. I also served as Legislative Director for
20 Representative Collin Peterson of Minnesota from 1991 through 1993, and was
21 Director of Programs for the National Association of State Energy Officials from
22 1994 through 1996.

1 I became executive director of Ohio Partners for Affordable Energy (OPAE) in
2 1996. In this capacity I was actively involved in the development and passage of
3 legislation regulating electric and natural gas utilities, which required working
4 knowledge of wholesale markets, regional transmission organizations (RTOs),
5 renewable energy technologies, energy efficiency, and consumer protection
6 issues. During my tenure with OPAE, I created a purchasing cooperative that
7 aggregated members to purchase natural gas. The cooperative was also one of
8 the first retail vendors of Renewable Energy Certificates (RECs) in Ohio.

9
10 After leaving OPAE at the end of June 2016, I served as the Program Manager
11 for the Weatherization Assistance Program at the U.S. Department of Energy. I
12 rejoined OPAE in my current capacity in June 2018.

13
14 I have a Bachelor of Liberal Studies from Bowling Green State University and a
15 Juris Doctor degree from the Columbus School of Law at The Catholic University
16 of America (1981). My professional career has focused on policy advocacy, the
17 development, operation and funding of demand side management (DSM)
18 programs – particularly low income energy assistance programs -- renewable
19 energy development programs, and utility regulation, including rate design, cost
20 of service, forecasting, and related issues. These concentrations require a
21 broad-based knowledge of the energy and utility sectors of the U.S. economy
22 and related regulatory regimes.

1 Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE OHIO PUBLIC UTILITIES
2 COMMISSION (“PUCO”OR“COMMISSION”)?

3 A. Yes. I testified on behalf Ohio Partners for Affordable Energy in litigation
4 involving Duke Energy Ohio, Case No. 11-3549-EL-SSO; The Dayton Power and
5 Light Company, Case Nos. 12-426-EL-SSO, et. al.; Duke Energy Ohio, Case No.
6 13-753-EL-RDR; Case No. 14-1297-EL-SSO, which involved FirstEnergy
7 distribution companies; Case No. 15-1046-EL-USF, a proceeding to set the
8 Universal Service Fund Rider; and, Case No.18-298-GA-AIR, Vectren Energy
9 Delivery Ohio’s pending rate case.

10
11 Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

12 A. The purpose of my testimony is to support the need for the two solar
13 photovoltaics projects proposed by Ohio Power Company. I also discuss the
14 positive impacts the investment will have on Ohio consumers.

15
16 Q. PLEASE EXPLAIN WHAT FACTORS ARE USED TO DETERMINE NEED.

17 A. Ohio law, specifically Section 4928.143(B)(2)(c), Ohio Revised Code, permits
18 distribution utilities to recover the cost of constructing an electric generating
19 facility under certain conditions if the Commission first determines that there is a
20 need for the facility. Section 4935.04, Ohio Revised Code, provides for the
21 regular filing of what is commonly known as an Integrated Resource Plan (IRP)
22 as described by Section 4901:5-5, Ohio Administrative Code, which amplifies
23 the language of the Revised Code. These provisions establish the factors to be

1 considered when determining whether there is a need for new electric
2 generation facilities.

3
4 Q. IS THERE A NEED FOR THESE NEW GENERATION FACILITIES?

5 A. Yes. Based on my review of the projects and the statute, as well as electric utility
6 industry trends and forecasts, there is a need that justifies ratepayer investment
7 to support the proposed solar photovoltaic facilities.

8
9 Q. WHAT ASPECTS OF THE CURRENT ELECTRICITY MARKET WARRANT A
10 RATEPAYER INVESTMENT IN NEW SOLAR PHOTOVOLTAIC GENERATION?

11 A. The electric utility industry is going through a period of rapid change. New
12 approaches to producing natural gas have resulted in a decline in prices
13 elevating the percentage of generation fueled by natural gas to new highs. The
14 increased market share for natural gas comes at the expense of coal-fired power
15 plants. See Exhibit DCR-1 and Exhibit DCR-2. Natural gas generation has a low
16 capital cost, and can be sited and built in a reasonable period of time at a
17 predictable price. By comparison, coal-fired power plants recently under
18 construction have been over budget and the schedules significantly delayed.
19 From an environmental standpoint, natural gas plants are twice as efficient as an
20 average coal plant and have significantly lower greenhouse gas and regulated
21 emissions. The coal fleet is old. Many of the retirements are the result of plants
22 being worn out; others because they cannot financially compete in wholesale
23 markets. The charts on Exhibit DCR-1 and Exhibit DCR-2 clearly show the

1 significant coal plant closures and the relative generation produced by fossil
2 fuels.

3
4 Q. PLEASE DESCRIBE THE ROLE OF RENEWABLE ENERGY TECHNOLOGIES
5 IN THE MARKET.

6 A. Solar and wind energy are seeing a period of rapid growth driven by significant
7 reductions in cost. The Energy Information Administration projects that
8 renewables will continue to grow in coming years, as noted in the first chart on
9 Exhibit DCR-3. Recent price reductions to \$0.06/kWh have made solar cost-
10 competitive in the marketplace. Exhibit DCR-4.

11
12 Q. WHY DOES THIS PROJECT SATISFY THE STATUTORY CRITERIA FOR
13 NEED?

14 A. Section 4901:5-5-06(3)(e)(iii) provides a list of factors that must be reviewed as a
15 part of an Integrated Resource Plan. Key considerations include: (a) rate and bill
16 impacts; (b) environmental impacts and costs; (c) economic impacts; (d) impact
17 of the plan on the financial status of the company; (e) strategic considerations
18 such as flexibility, diversity, the size and lead time of commitments, and lost
19 opportunities for investment; (f) equity among customer classes; (g) the impact of
20 the plan over time; and, (h) other matters the Commission deems appropriate.
21 The proposed projects have positive impacts for customers based on these
22 considerations and should be approved.

1 Q. WHAT ARE THE PROJECTED IMPACTS ON RATES AND BILLS?

2 A. The analysis provided by Ohio Power indicates a high probability – between
3 99.9% and 100% that over their lifetime the projects will provide financial benefits
4 to customers. As noted in Exhibit DCR-4, the costs for photovoltaic arrays are
5 cost competitive with all forms of generation.
6

7 Q. WHAT ARE THE ENVIRONMENTAL IMPACTS AND COSTS?

8 A. Solar photovoltaic projects have minimal environmental impacts and minimal
9 costs of compliance. The primary considerations relate to land use and impact
10 on flora and fauna on the site. There are no emissions, so there is no need to
11 spend ratepayer funds to control emissions.
12

13 Q. WHAT ARE THE ECONOMIC IMPACTS OF THE PROPOSED PROJECTS?

14 A. Ohio Power proposes that the projects will be built in Highland County. In 2016,
15 the County had a poverty rate of 19.8%, with 28.4% of all children living in
16 poverty. According to census data, 43.6% of the population had incomes under
17 200% of the federal poverty lines, which renders a family eligible for low income
18 weatherization programs. Surrounding counties have similar rates: Adams
19 County – 51.8%; Brown County – 38.1%; Clinton County – 36.2%; Fayette
20 County – 40%; Pike County – 44.8%; and, Ross County – 40.2%. See *State of*
21 *Poverty in Ohio 2017*, Ohio Association of Community Action Agencies,
22 [http://oacaa.org/wp-content/uploads/2018/04/State-of-Poverty_Rev-](http://oacaa.org/wp-content/uploads/2018/04/State-of-Poverty_Rev-2018.04.13.pdf)
23 [2018.04.13.pdf](http://oacaa.org/wp-content/uploads/2018/04/State-of-Poverty_Rev-2018.04.13.pdf)

1 In 2008, one of the largest employers in the area, ABX Air (DHL), closed its U.S.
2 air hub operations in Wilmington, Ohio, leaving 10,000 people without a job. This
3 job loss and the ripple effect continue to challenge this region and contribute to
4 the high poverty rates.

5
6 The proposed projects will have a beneficial impact on the regional economy.
7 Ohio Power projects as many as 3,870 full time equivalent (FTE) jobs during the
8 construction phase and approximately 50 long-term jobs. The projects will
9 produce additional tax revenues in the region and across the state. The annual
10 operating impacts are projected to exceed \$33 million. See *Direct Testimony of*
11 *Stephen Buser on Behalf of Ohio Power Company*, Exhibit SB/BL-1 at 10.

12
13 The plants may also attract additional new industry to the region and the State.
14 Increasingly, corporations large and small are making commitments to obtain
15 100% of their electricity from renewable energy sources.

16 ([https://www.bloomberg.com/news/articles/2018-04-30/businesses-are-buying-](https://www.bloomberg.com/news/articles/2018-04-30/businesses-are-buying-more-wind-and-solar-power-than-ever-before)
17 [more-wind-and-solar-power-than-ever-before](https://www.bloomberg.com/news/articles/2018-04-30/businesses-are-buying-more-wind-and-solar-power-than-ever-before).) The availability of renewable
18 energy has emerged as an important factor in attracting and retaining corporate
19 facilities within a state. These projects will provide that advantage to Ohio at a
20 large scale. The demand for green power should also improve the market for
21 RECs, the value of which are not included in the analysis of the financial impacts
22 of the project. Subsidies to large industrial customers are not the only path to

1 retaining jobs; to expand jobs, investments in clean energy technologies in a
2 State are critical.

3
4 Q. WHAT IS THE IMPACT OF THE PLAN ON THE OHIO POWER COMPANY?

5 A. There appears to be little risk of a significant impact on the financial viability of
6 Ohio Power Company. The construction of solar photovoltaic projects is not
7 prone to exceeding their budget or failing to meet construction deadlines, unlike
8 nuclear and coal plants. The plants are being built using Renewable Energy
9 Purchase Agreements (REPAs) that minimize the exposure of the Company
10 financially. There appears to be no danger of a negative impact on the financial
11 outlook of Ohio Power Company.

12
13 Q. HOW DO THE PROPOSED PROJECTS PROMOTE FLEXIBILITY AND
14 DIVERSITY, AND WHAT ARE THE SIZE AND LEAD TIME OF THE
15 COMMITMENTS, AND LOST OPPORTUNITIES FOR INVESTMENT?

16 A. Ohio has few utility-scale solar photovoltaic projects, so construction of these
17 projects will promote the flexibility and diversity of the current generation mix in
18 Ohio. Data from the Energy Information Agency indicates that in 2017 “coal
19 fueled 58% of Ohio’s net electricity generation, natural gas fueled 24%, and
20 nuclear energy accounted for another 15%.”

21 (<https://www.eia.gov/state/?sid=OH#tabs-4>.) This leaves a mere 3% that is
22 generated by renewable sources. While the generation mix will change as coal
23 plants are replaced by natural gas, in order to achieve diversity of supply which

1 hedges against potential volatile fossil fuel prices large-scale investments such
2 as those proposed in these cases will help improve the balance of resources
3 providing electricity to Ohio customers.
4

5 Q. HOW DOES THIS PROPOSAL PROMOTE EQUITY AMONG CUSTOMER
6 CLASSES?

7 A. Residential and small commercial customers are at a disadvantage when it
8 comes to the siting and interconnection of solar photovoltaic systems. First, 43%
9 of all residential buildings are not physically suitable for solar according to the
10 National Renewable Energy Laboratory.

11 (<https://www.nrel.gov/docs/fy18osti/70901.pdf> at 5.) Only 51% of housing
12 occupied by low- and moderate-income families is suitable, but many families
13 with incomes under 80% of the Federal Poverty Line live in rental housing which
14 is a major barrier to the deployment of solar for these consumers.
15

16 Utility-scale solar is the least expensive option because it is built at scale. It
17 makes solar available to customers who cannot put panels on their roofs for
18 either physical or economic reasons. It also helps keep customers connected to
19 the distribution system because they have a lower cost option to rooftop solar
20 installations. Utility-scale solar also overcomes the barriers small business face
21 to securing renewable power. And, as noted above, major corporations are also
22 pushing for green power. The proposed projects will make available

competitively-priced solar electricity to all customers, ensuring equity among all classes.

Q. ARE THERE LONG-TERM ADVANTAGES FROM THE APPROVAL OF THESE PROJECTS?

A. The electric utility system is moving from traditional fossil-fueled generation. While we will likely not eliminate the use of coal or gas power plants during my lifetime, the long-term trend is in that direction. Ohio is behind other states in the development of solar photovoltaic resources. These projects will help establish and grow a new Ohio industry.

The environmental advantages of solar photovoltaics cannot be understated. The panels have no emissions and because they use no fuel there is minimal impact on the land and virtually no water pollution. The most recent report of the Intergovernmental Panel on Climate Change (IPCC) makes clear that global warming is a serious threat to the planet and the negative environmental consequences of fossil energy use are increasing. Solar will help us transition to cleaner, safer generation sources. From an individual health standpoint, there will be fewer premature deaths, and fewer instances of breathing problems caused by emissions from fossil fuel plants, a key concern in Ohio where fossil fuels dominate. <https://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/coal-air-pollution#.XCzzT1xKiUk>.

1 Power plants that are cost-effective now and in the future are key to Ohio's
2 economic development. Large scale renewable energy installations will produce
3 jobs during construction and operational jobs over the long-term. The preference
4 of some customers for renewable energy will be satisfied, making Ohio more
5 attractive to modern businesses. And the stable prices from generation not
6 subject to the vagaries of fuel prices act as a hedge against market volatility and
7 provide the price certainty that is an advantage to all customers.

8
9 Q. ARE THE PROPOSED PROJECTS SUPPORTIVE OF STATE POLICIES?

10 A. Clearly the answer is yes. The plants are consistent with the state policy to
11 provide consumers with adequate, reliable, safe, efficient, nondiscriminatory, and
12 reasonably price retail electric service. Ohio Revised Code Sec. 4928.02(A).
13 They ensure customers have available a quality option they want and need. Sec.
14 4928.02(B). The projects will contribute to diversity of electricity supplies. Sec.
15 4928.02(C). The projects will promote innovation in Ohio's electric generation.
16 Sec. 4928.02(D). They provide a mechanism to support the deployment of a
17 technology "that can adapt successfully to potential environmental mandates."
18 Sec. 4928.02(J). They protect at-risk populations by ensuring renewable energy,
19 and their competitive price and positive health and economic development
20 impacts are available. Sec. 4928.02(L). They provide a mechanism to make an
21 alternative energy resource available to small businesses. Sec. 4928.02(M). And
22 finally, they facilitate the state's effectiveness in the global economy by ensuring

1 the availability of clean energy which the largest corporations in the country see
2 as critical to their futures.

3
4 Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING THE
5 APPLICATION?

6 A. I have two recommendations. First, the value of the RECs that are sold outside
7 of the Green Tariff needs to flow to customers paying the Renewable Generation
8 Rider. See *Direct Testimony of William A. Allen on Behalf of Ohio Power*
9 *Company*, Exhibit WAA-1. Second, I recommend that AEP consider, subsequent
10 to approval and commencement of these projects, developing community solar
11 projects to be placed in low-income communities, neighborhoods, or multifamily
12 rental buildings. OPAE is happy to work with Ohio Power to identify opportunities
13 where community solar may provide additional, direct benefits to low-income
14 households.

15
16 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

17 A. Yes, but I reserve the right to supplement the testimony as new information
18 becomes available.

CERTIFICATE OF SERVICE

I hereby certify that the undersigned counsel served the Direct Testimony of David C. Rinebolt on behalf of Ohio Partners for Affordable Energy on counsel for all parties of record in these cases, by E-mail, on the 2nd day of January, 2019.

/s/ Colleen L. Mooney
Colleen L. Mooney

E-Mail Service List:

stnourse@aep.com
cmblend@aep.com
egallon@porterwright.com
bhughes@porterwright.com
christopher.miller@icemiller.com
jason.rafeld@icemiller.com
paul@carpenterlipps.com
cluse@dickinsonwright.com
cpirik@dickinsonwright.com
christopher.healey@occ.ohio.gov
callwein@keglerbrown.com
dborchers@bricker.com
dparram@bricker.com
Dressel@carpenterlipps.com
fdarr@mwncmh.com
glpetrucci@vorys.com
jkylercohn@BKLawfirm.com
jstock@beneschlaw.com
joliker@igsenergy.com
Bojko@carpenterlipps.com
ktreadway@oneenergyllc.com
kboehm@BKLawfirm.com
llee@beneschlaw.com
whitt@whitt-sturtevant.com
mpritchard@mwncmh.com
Maureen.willis@occ.ohio.gov
mkurtz@BKLawfirm.com

mnugent@igsenergy.com
mjsettineri@vorys.com
mdortch@kravitzllc.com
mleppla@theoec.org
msilberman@beneschlaw.com
glover@whitt-sturtevant.com
rsahli@columbus.rr.com
rdove@keglerbrown.com
todonnell@dickinsonwright.com
thomas.mcnamee@ohioattorneygeneral.gov
tony.mendoza@sierraclub.org
vvorys@dickinsonwright.com
William.michael@occ.ohio.gov

Coal-Fired Electric Generation Retirements

2018 is likely to tally a record level of coal-fired capacity retirements, two-thirds of which were only announced in 2017, and new announcements keep adding to the list of closures expected over the next six years.

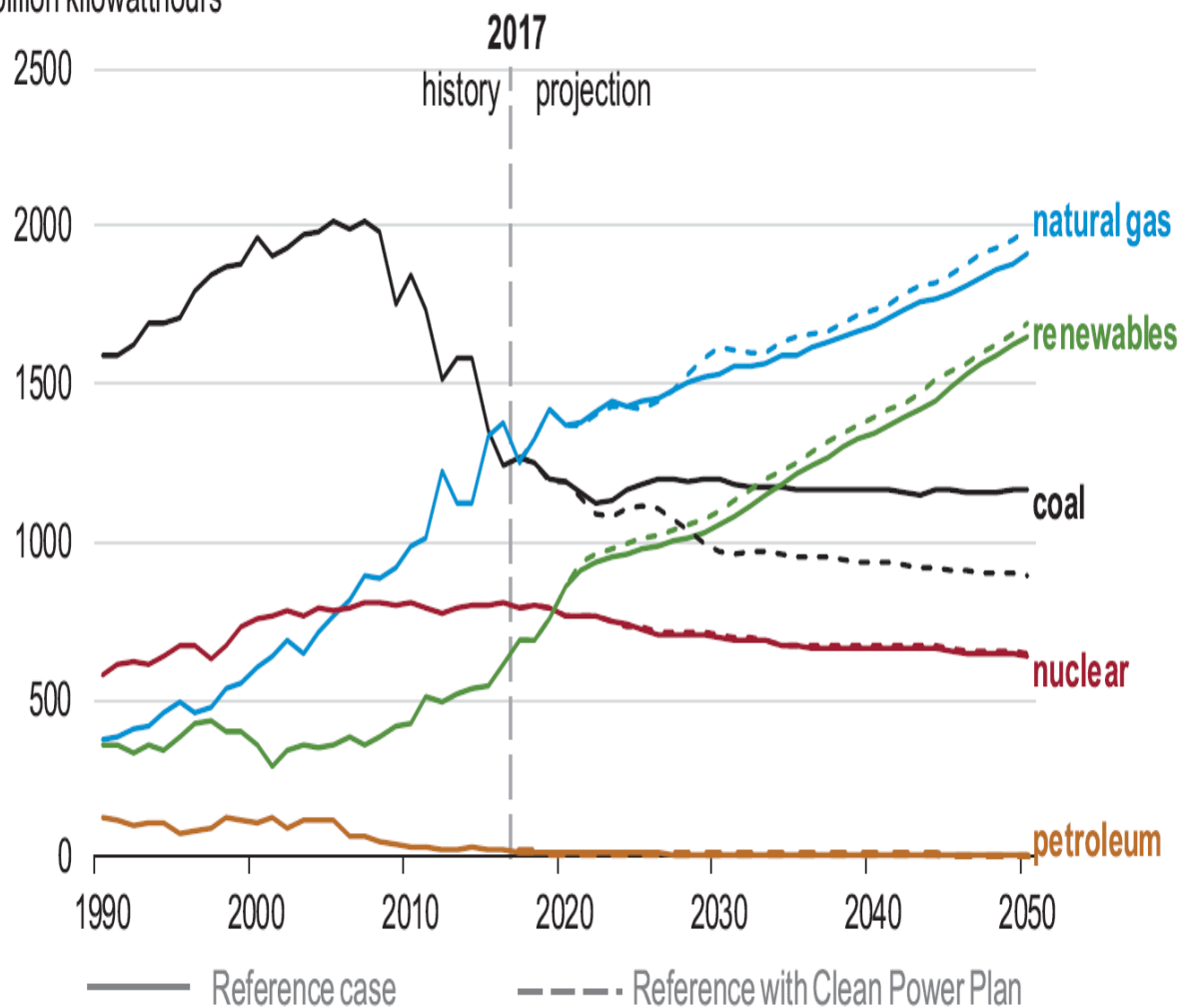


Sources: EIA; S&P Global; IEEFA research (2017-2024)

<https://cleantechnica.com/wpengine.netdna-ssl.com/files/2018/10/Coal-Fired-Retirements-2018-IEEFA-1.jpg>

Net electricity generation from select fuels

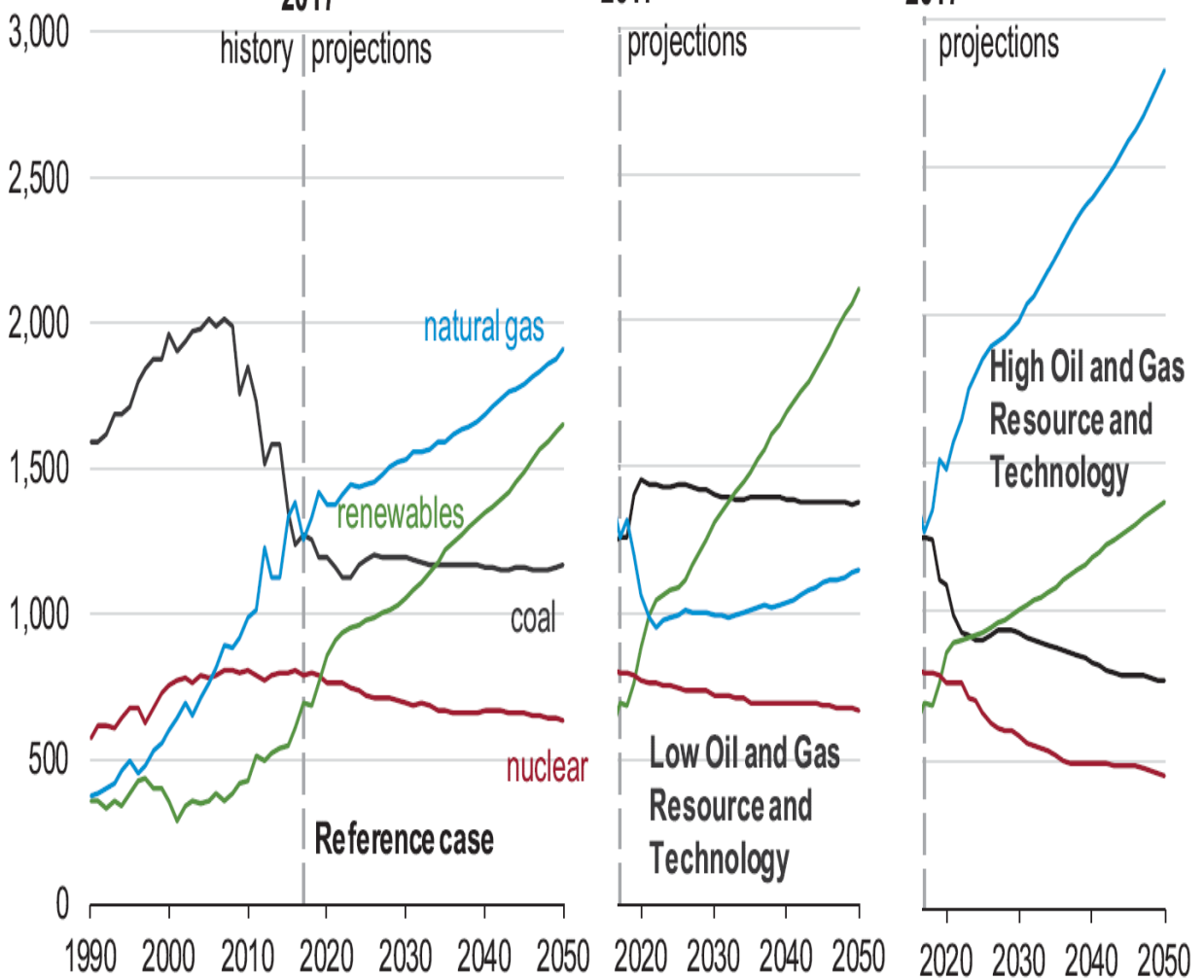
billion kilowatthours



U.S. Energy Information Administration U.S. Energy Information Administration
 #AEO2018 www.eia.gov/aeo.

Electricity generation from selected fuels

billion kilowatthours



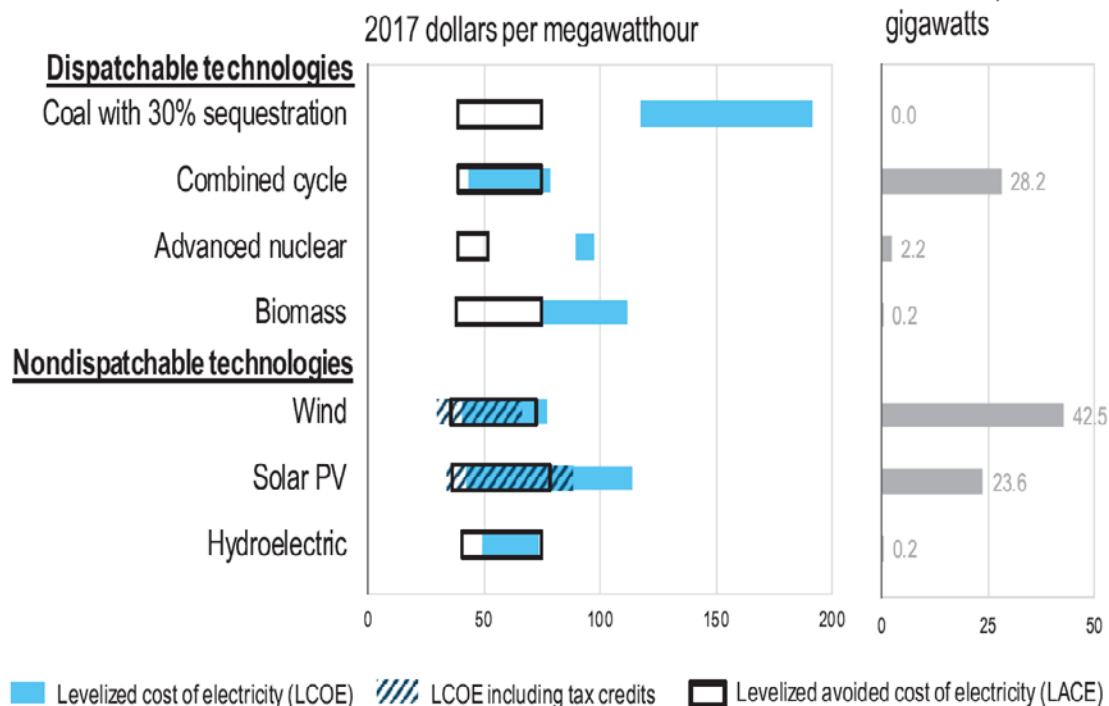
U.S. Energy Information Administration

#AEO2018 | www.eia.gov/aeo

Combined cycle, wind, and solar photovoltaic generation have the most favorable cost characteristics—

Levelized cost projections by technology, 2022

Projected capacity additions, 2018-2022
gigawatts



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

1/2/2019 3:59:07 PM

in

Case No(s). 18-0501-EL-FOR, 18-1392-EL-RDR, 18-1393-EL-ATA

Summary: Testimony of David C. Rinebolt electronically filed by Colleen L Mooney on behalf of Ohio Partners for Affordable Energy