FEBRUARY 2021

DUKE ENERGY REPORT CARD

for

DUKE'S INTEGRATED RESOURCE PLANS FOR THE CAROLINAS

Duke Energy's 15-year energy plans fail to serve the public interest and move North and South Carolina forward to an equitable 100% clean energy future.

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DUKE ENERGY REPORT CARD

GET REAL WITH CLIMATE GOALS	D
AFFORDABLE ENERGY FOR ALL AND EQUITABLE ACCESS TO CLEAN ENERGY	F
DO ENERGY EFFICIENCY FIRST	D-
DITCH COAL	D+
NO NEW GAS	F
GO BIG ON RENEWABLE ENERGY	D
EMBRACE MARKET COMPETITION	D
DO GRID MODERNIZATION RIGHT	C
DON'T RELY ON IMAGINARY TECHNOLOGY	F
NO LOBBYING AGAINST THE PUBLIC INTEREST	F

Every two years, Duke Energy Progress (DEP) and Duke Energy Carolinas (DEC) (herein "Duke") each develop an integrated resource plan (IRP) that lays out a resource roadmap to guide the utilities over the next 15 years.

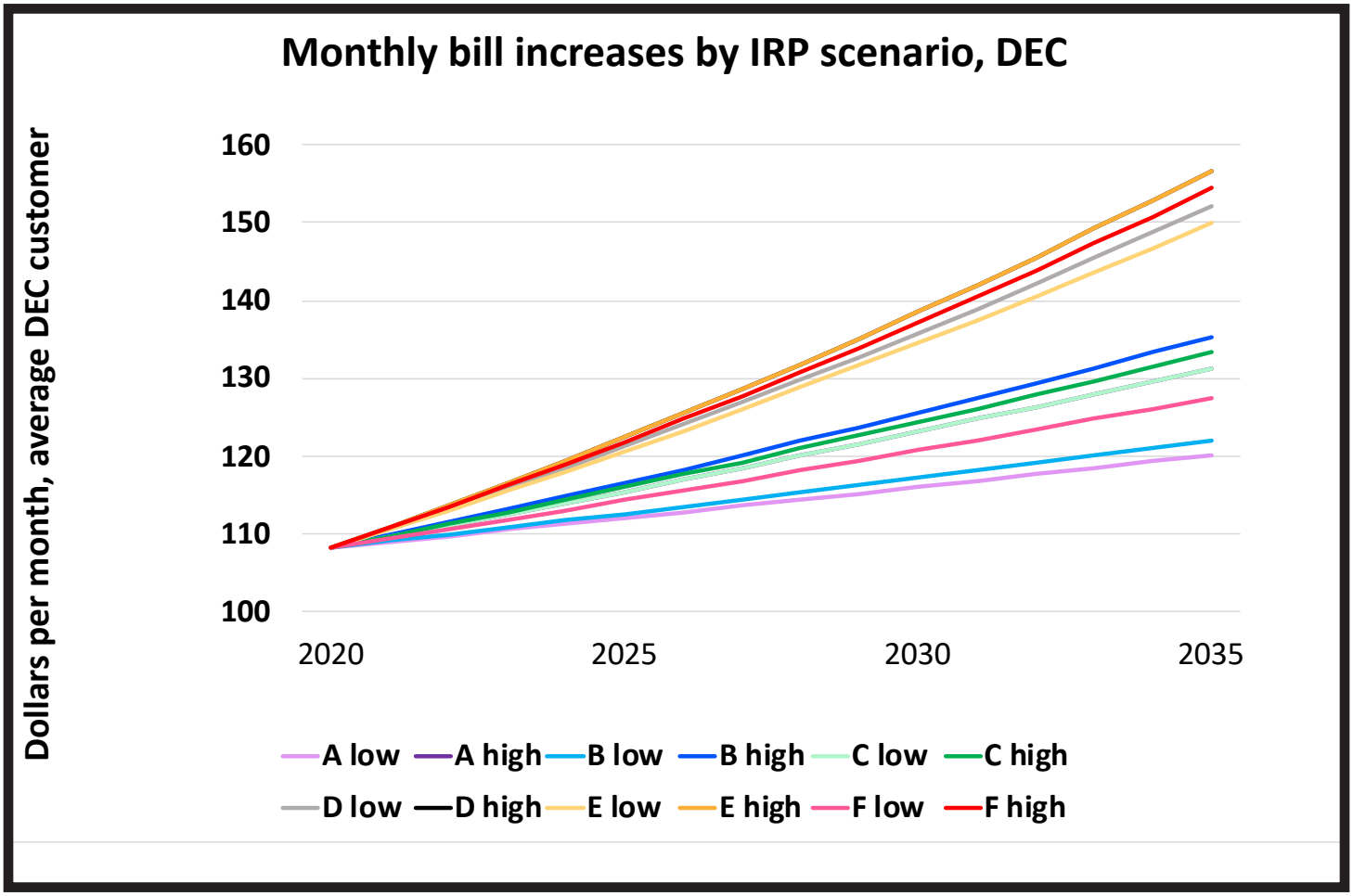
A diverse coalition of conservation, clean energy, and community organizations representing the people of North and South Carolina assessed Duke's 2020 IRPs. The IRPs were graded in 10 categories that reflect 10 principles of an IRP in the public interest.

Duke received failing or near-failing grades in all 10 categories.

EXECUTIVE SUMMARY

Overall, Duke's IRPs do not adequately address climate change nor reduce ratepayers' energy burdens. Instead of choosing the cleanest and most cost-effective option of retiring coal immediately and replacing it with efficiency and renewables, Duke delays coal plant closures and proposes to build 9.6 GW of new fossil gas. The IRPs present six scenarios, two of which are more fully explored in this report card: the base case and base case with carbon policy.

Duke's IRPs also propose to significantly increase ratepayers' bills. This is clearly unacceptable right now given the economic devastation that COVID is having in the Carolinas and the struggles families face to pay their energy bills.



1. GET REAL WITH CLIMATE GOALS

North Carolina's Clean Energy Plan aims to reduce the electric power sector's greenhouse gas emissions to 70% below 2005 levels by 2030 and attain carbon neutrality by 2050. This aligns with climate goals that cities and counties across the state have made. Duke also announced its own voluntary commitment to a net-zero carbon energy system by 2050. But Duke still argues that, between now and then, it needs to add more fossil gas generation to the grid. Duke's plans should adhere to North Carolina's climate goals, reduce actual greenhouse gas emissions 70% by 2030 and entirely eliminate fossil fuels from its fleet by 2050.

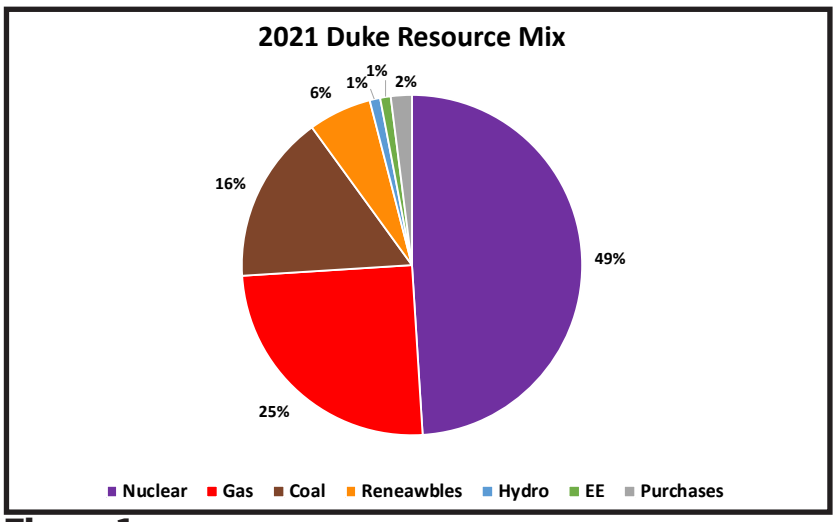
GRADE: D

Duke is the #2 source of climate pollution from the utility sector in the U.S., emitting over 100 million tons of CO2/year. Sierra Club recently gave Duke an F for failing to meet its corporate climate goals. Given the proven urgency of the climate crisis, and its disproportionate impacts on low wealth communities and communities of color,[1] it is vital that Duke eliminate greenhouse gas emissions as quickly as possible.

In its IRPs, Duke fails to reduce carbon pollution in a manner aggressive enough to meet North Carolina's climate goals. Duke does not present viable plans to adequately mitigate its contribution to climate change, nor does it eliminate fossil fuels from its fleet by 2050. **Figure 1**[2] shows Duke's mix of energy sources for 2021. By 2035, at least 35% of its energy resources will continue to come from fossil fuels.

The IRPs present two base cases: one with carbon policy and the other without. Neither base case reaches North Carolina's goal of 70% greenhouse gas emission reduction by 2030; in fact, the base case *increases CO2 emissions* between 2030-2035. The base case with carbon policy reaches only 59% by 2030 and 62% by 2035.

President Joe Biden's climate plan calls for reducing emissions in the power sector to zero by 2035 (and zero in all sectors by 2050). This translates to a 6.25%/year emissions reduction.



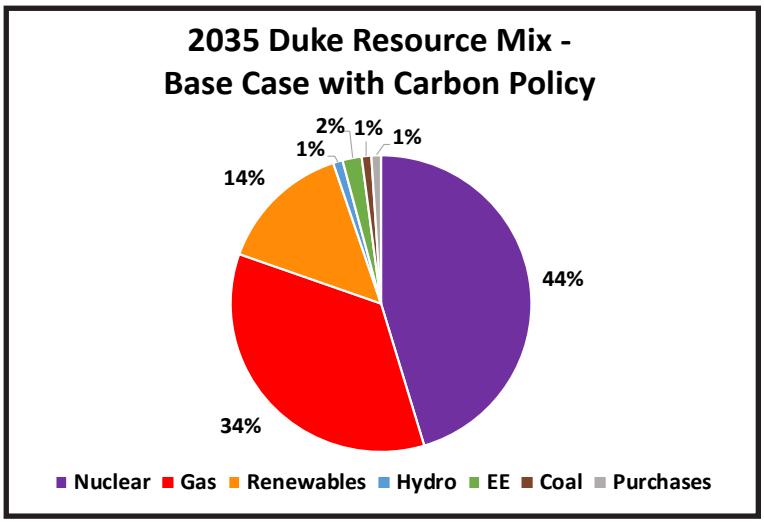


Figure 1

1 https://psci.princeton.edu/tips/2020/8/15/racial-disparities-and-climate-change

2 In terms of page references, this report card will refer to the DEC IRP by default and note places where it is referring to the DEP IRP.

Duke's carbon goals put it on track for only 1.61%/year emissions reduction.[3]

The IRPs discuss several federal legislative proposals that price carbon, ranging from $5-$52/ton increasing at $7 - 8.5%/year. And yet, Duke's high carbon scenario is only $5/ton, escalating at $7/year -- the lowest of all the carbon prices discussed. For comparison, Dominion Energy of South Carolina's 2020 IRP considered a $25/ton carbon cost.[4] In fact, a 2018 article in Nature Climate Change found the median estimate of the societal cost of carbon emissions for the U.S. to be $417/ton,[5] far higher than any in the Duke IRPs.

The IRPs also lay out two scenarios that reduce CO2 emissions 70% below 2005 levels by 2030; however, these scenarios are seriously flawed. The plans overinflate costs by needlessly limiting widely available clean and least-cost options like solar, wind, efficiency and demand response. Moreover, in the discussion on reaching zero carbon by 2050, Duke baselessly claims it couldn't meet these goals without "policy support" and hypothetical technologies.

2. AFFORDABLE ENERGY FOR ALL AND EQUITABLE ACCESS TO CLEAN ENERGY

Energy is unaffordable for one in three households in the U.S. and more than 1.25 million households in North Carolina. This problem of energy burden is further exacerbated by the COVID-19 crisis, with over 475,000 North and South Carolinians unemployed[6] and countless households facing unprecedented hardships.[7]

Duke must take proactive steps to reduce the short-term and long-term energy burden of its ratepayers, especially low- to moderate-income ratepayers, and provide arrearage forgiveness and management plans to all ratepayers facing mounting utility debt.

GRADE: F

The world has changed dramatically since the beginning of 2020. Over 18%, or nearly one-fifth, representing more than 490,000 households, of Duke ratepayers in North Carolina were past due on their bills as of November 30th, 2020. Those ratepayers owed in total more than $120 million.[8] And in the midst of this pandemic and economic crisis, Duke shut off the power for nearly 17,000 households in North Carolina in November of 2020.[9]

3 Pomerantz, D. and Kasper M. "Many U.S. electric utilities plan slow decarbonization over next decade, out of sync with Biden plan," Energy & Policy Institute, Dec. 1, 2020, https://www.energyandpolicy.org/utilities-carbon-goal-biden-climate-plan/.
4 DESC 2020 IRP, at p. 44.
5 See Ricke et al., "Country level social cost of carbon," Nature Climate Change (October 2018). Available at: https://www.nature.com/articles/s41558-018-0282-y.epdf.

6 as of September 2020
7 357k in NC in Sept 2020, 121.5k in SC. Total of around 478k
8 This represents only a 5% decrease in ratepayers in arrears and a 13% increase in total arrearages compared to July 31, indicating that not enough is being done to help ratepayers pay off their accumulated debt.
9https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=21905e06-5935-401c-938b-e1b86ab4145f, https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=4f21f132-ffb2-425d-a608-04d4a024c77a

Even prior to the COVID-19 pandemic and economic devastation, energy was unaffordable for the roughly 20% (> 330,000) of DEC ratepayers who qualified as "low-income"[10] in 2019. Those families spent an average of 10.5% of their income on energy bills. This far exceeds the widely-accepted benchmark of "energy burden," spending 6% or less of household income on energy bills. In fact, in 2018, South Carolina families in the lowest income bracket (0-30% area median income) living in single family homes or manufactured homes had average energy burdens of over 20%.[11]

Despite this reality, Duke's 2020 IRPs completely neglect to recognize the overwhelming problem of unaffordable energy burdens that hundreds of thousands of its residential ratepayers face. The IRPs lack any real-world solutions to alleviate household energy burdens like energy debt management plans or more home weatherization for low-income ratepayers. Instead, Duke glosses over the issue of affordability. It falsely claims that the utility "has a strong history of delivering affordable, reliable and increasingly cleaner energy to our ratepayers." In fact, Duke proposes monthly bill increases for its residential ratepayers in all of the modeled scenarios, as shown in **Figure 2**.

Any resource plan should not only address affordability but should also ensure that all families have equitable access to clean energy. Unfortunately, Duke's plans fail to break down barriers to clean energy for low-income households and do not offer any new home energy efficiency programs or cost-saving community solar programs targeted at low-income families.

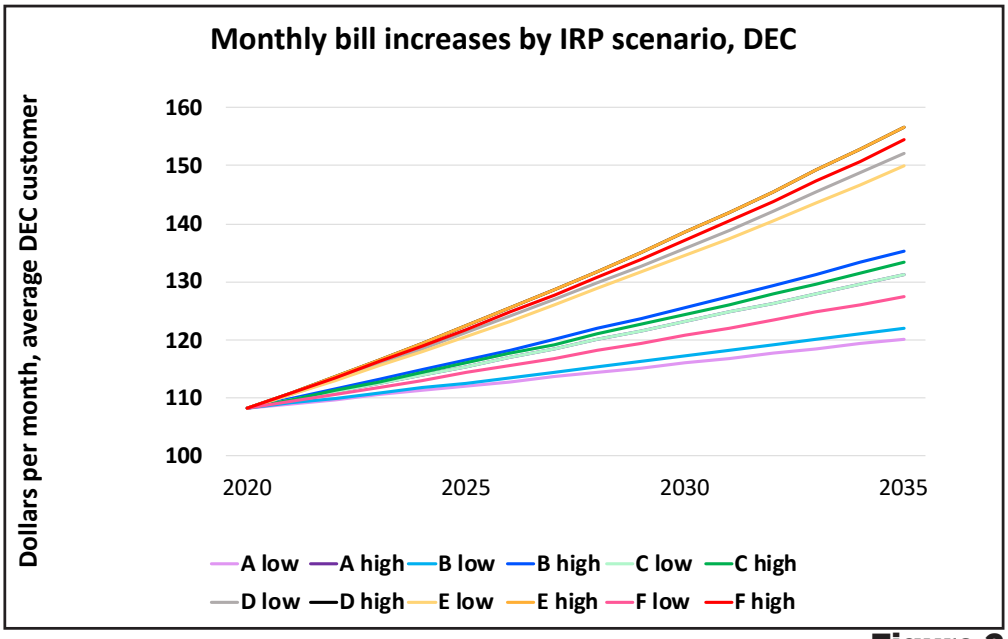


Figure 2

10 Low income defined in this case as < 150% of federal poverty level.
11 https://www.energy.gov/eere/slsc/maps/lead-tool

3. DO ENERGY EFFICIENCY FIRST

Energy efficiency and demand response are the least-cost ways to meet the grid's needs. Duke must maximize all energy efficiency options prior to building any new generation in order to keep costs low for all ratepayers.

GRADE: D+

Least-cost integrated resource planning should maximize deployment of energy efficiency, typically the lowest-cost resource available to system planners. In addition to delivering lower bills for participants in efficiency programs, cost-effective energy efficiency can lower long-term rates by avoiding unnecessary investment in energy, capacity and transmission and distribution, as well as avoiding costs of complying with environmental and renewable energy regulations and delivering non-energy system benefits like reduced customer debt.[12] Moreover, energy efficiency measures can reduce energy burdens of families most in need.

While DEC ranked best for efficiency among the Southeastern investor owned utilities,[13] Duke is far from leading on efficiency when compared nationwide. The American Council for an Energy-Efficient Economy (ACEEE) ranked DEP 37th out of 52 utilities nationwide, and DEC fell in the middle of the pack.[14] ACEEE rated South Carolina 40th out of the 50 states in energy efficiency, and North Carolina was 26th.[15] In 2018, Duke's net incremental energy savings of retail sales was 1% or less. For comparison, utilities in Massachusetts were over 3%, and Duke Ohio

12 B. Baatz. 2015. Everyone Benefits: Practices and Recommendations for Utility System Benefits of Energy Efficiency
13 https://cleanenergy.org/blog/energy-efficiency-in-the-southeast-2019-annual-report/
14 2020 Utility Energy Efficiency Scorecard
15 https://database.aceee.org/state

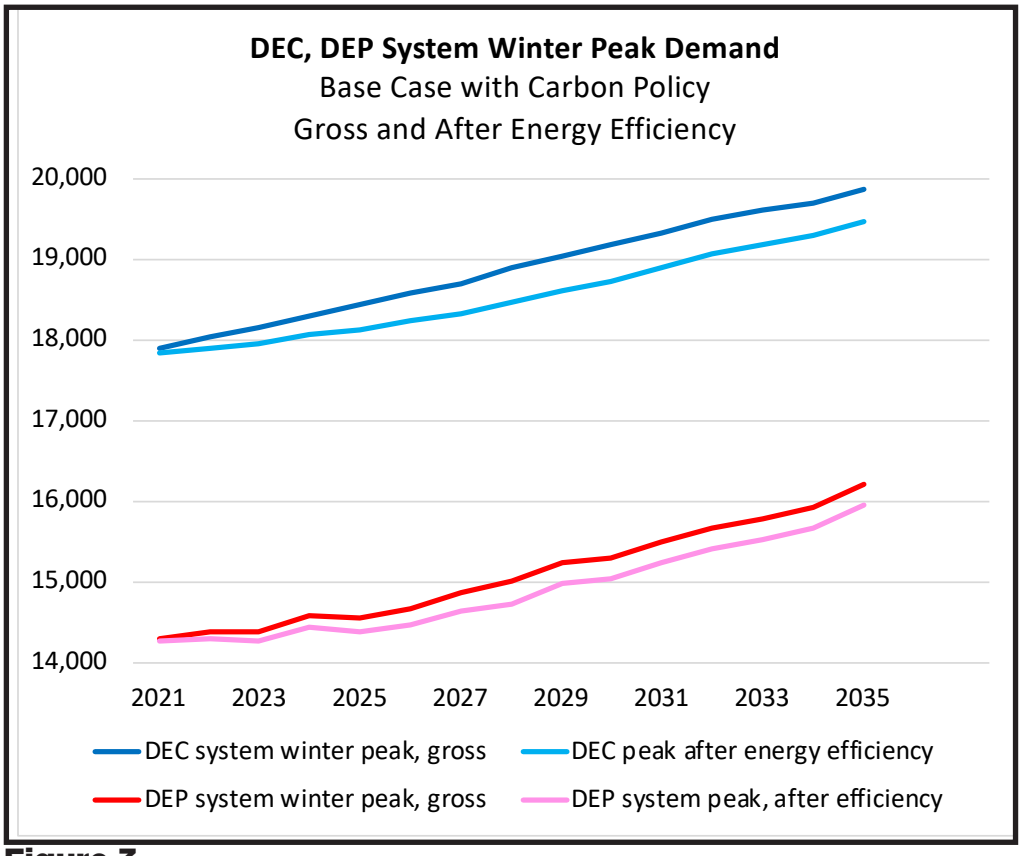


Figure 3

achieved 1.32% savings. Duke needs to do more in the Carolinas to make each kilowatt hour of energy go further.

In its IRPs, Duke assumes an increase in both peak demand and annual energy usage from 2021-2035. **Figure 3**[16] illustrates the 12% increase in demand for DEP and 9% for DEC. Duke fails to do the bare minimum and incorporate all cost-effective energy efficiency measures into its plan,[17] and it fails to model more impactful steps such as considering efficiency as an alternative to new generation assets.

Duke's own research finds additional cost-effective potential which was excluded from the IRPs. Duke relies on a market potential study (MPS) which undervalues the potential contributions of energy efficiency in three key ways:

1. Applies an outdated cost-effectiveness test that limits potential,
2. Uses a model that assumes current (often limited) customer acquisition practices into the future, and
3. Measures cost-effectiveness at each energy efficiency measure, e.g. LED bulbs or attic insulation, not at the program or portfolio level which would consider the costs and benefits of an entire suite of complementary measures.

The MPS uses an asymmetrical "total resource cost test" (TRC) which includes a number of categories of costs to ratepayers without their attendant benefits. The NC Utilities Commission recently accepted a settlement agreement that shifts the primary

cost-effectiveness test from TRC to the symmetrical, system-focused utility cost test (UCT). The MPS itself finds that using the UCT would increase economic potential for DEC in North Carolina by 15-46%, depending

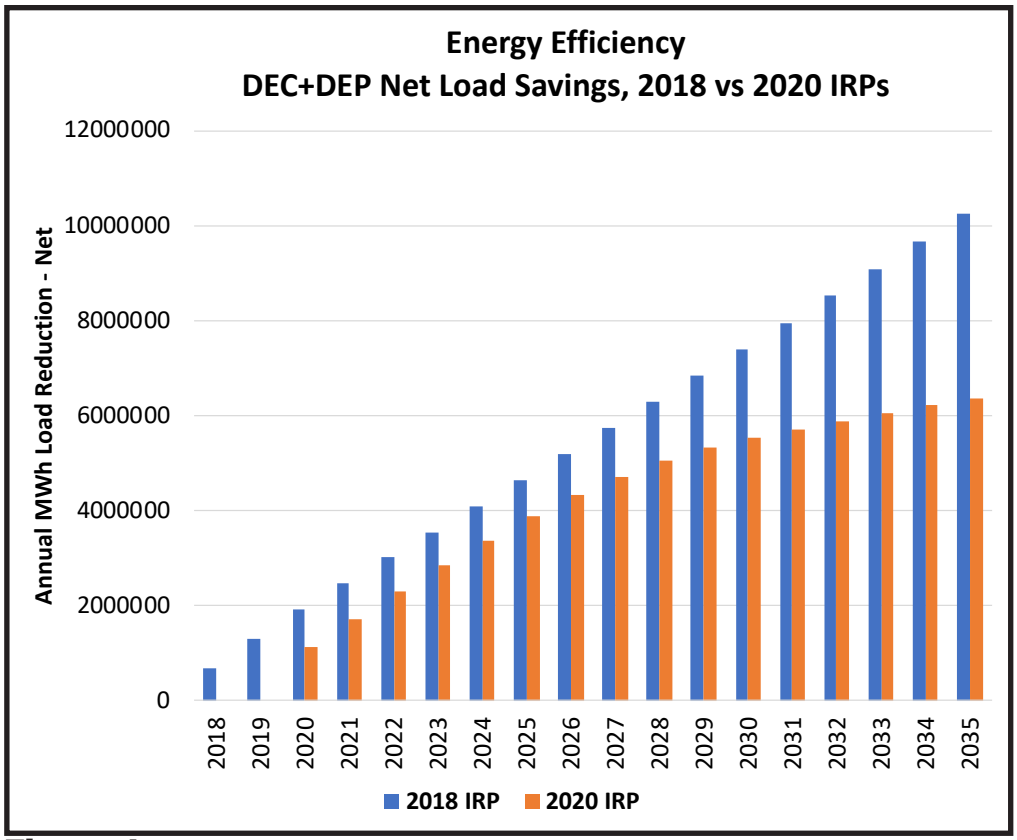


Figure 4

16 (Data source: IRP Table 12-E)
17 Page 171 DEC plan

on the sector, and that this additional energy efficiency is missing from the IRP.[18] By relying on past program performance to determine customer participation levels, the potential is limited to Duke's current suite of program delivery and customer acquisition methods and is missing critical tools like financing, enhanced marketing and program targeting using smart meter data. Finally, the MPS focuses on measure-level cost-effectiveness and may miss opportunities to sequence strategically or bundle measures together to make marginal measures cost-effective. Duke used this bundled cost-effectiveness approach for its grid modernization efforts, and Duke should use it for energy efficiency too.

Duke's 2020 IRPs decreased the amount of energy efficiency promised as compared to its 2018 IRPs, illustrated in **Figure 4**[19]. Recent demand side management cost recovery filings in North Carolina demonstrate a projected 40% decline in savings for DEP from 1.24% of sales in 2016 to 0.74% in 2020, and a 22% decline for DEC from 1.2% in 2019 to 0.94% in 2021. Using these existing program plans and the flawed MPS, the IRPs project to continue this trend.

Duke plans to increase its use of demand response and peak shaving but could do more to reduce the system peak. Duke states that additional winter peak demand savings could be achieved cost-effectively, but they chose not to include it in the forecast, simply stating that it is "premature."[20] This is unacceptable as many utilities across the country, including Duke and its partners in the Blue Horizons Task Force in Asheville, have demonstrated how efficiency programs can reduce winter peak and avoid unnecessary infrastructure.

18 Find the Market Potential Study here: https://www.duke-energy.com/Our-Company/IRP. Economic potential would increase economic potential for DEP in NC by 8-51%, depending on sector, for DEC in SC by 11-74%, depending on sector, and for DEP in SC by 2-54%, depending on sector.
19 (DEC p. 275, DEP p. 272)
20 Page 36 of DEP plan

4. DITCH COAL

Since 2015, Duke's six coal plants have operated at a net loss to ratepayers, causing higher bills and more pollution, especially in Black and low-income communities. Duke's coal plants also expose vulnerable populations to coal ash pollution, which has led to elevated cancer rates and respiratory diseases. Duke's IRPs should accelerate retirement of all coal plants, close half of its coal fleet by 2025, achieve coal-free energy by 2030 and include support for just, community-led transition plans for coal plant communities.

GRADE: D+

Duke's coal plants are already uneconomic and costing ratepayers billions of dollars.[21] And pollution from coal disproportionately impact communities of color.[22] They must be shut down now, for the benefit of our wallets, our air and our climate.

The IRPs fall far short of an acceptable plan to shutter Duke's coal fleet in the Carolinas. Duke does not include any firm commitments of plant retirements in its IRPs. In fact, Duke may even intend to increase its use of coal in the event that fossil gas prices spike or issues with the supply chain arise, despite renewable energy and efficiency already being the least-cost options.

Duke's coal retirement analysis methodology presented in the plans is flawed. It has included faulty assumptions that needlessly

21 See more about about how operating coal plants costs more than building new alternatives in Energy Innovation's report, "The Coal Cost Crossover" https://energyinnovation.org/publication/the-coal-cost-crossover/
22 https://www.scientificamerican.com/article/coal-plants-smother-communities-of-color/

skewed the analysis to delay the retirement of its coal plants.

In its base case with carbon policy, which Duke uses as a proxy for its preferred alternative throughout the IRPs, Duke continues burning coal until 2049. It burns coal at Belews Creek, its second-largest coal plant in North Carolina, until 2039. Duke's sequential peaker method bakes in assumptions that should not be considered in coal plant retirement analysis, such as the remaining plant balances. Duke doesn't allow solar, wind, storage and energy efficiency to compete with coal in its assessment; instead, it only uses gas plants as a proxy. Duke also misleadingly ranks coal plant retirements by including capacity and remaining plant balances in its calculations rather than assessing how economically disadvantageous each coal plant is for ratepayers. Even the earliest practicable retirement scenario contains this flawed methodology and unnecessarily leaves the Allen plants 1 and 5 online until 2024.

There's no difference between the base case and the base case with carbon policy in terms of the schedule of coal plant closures, as seen in Figure 5[23]. Were Duke to consider a more reasonable cost on carbon, the outlook might look very different.

Furthermore, the IRPs include no transition plans for the workers and the communities impacted by coal plant closures. As an example, APS in Arizona recently proposed $144 million to finance the economic transition of communities impacted by the retirement of its coal plants. It is clear Duke needs to do more and is not taking seriously its responsibility to move away from coal.

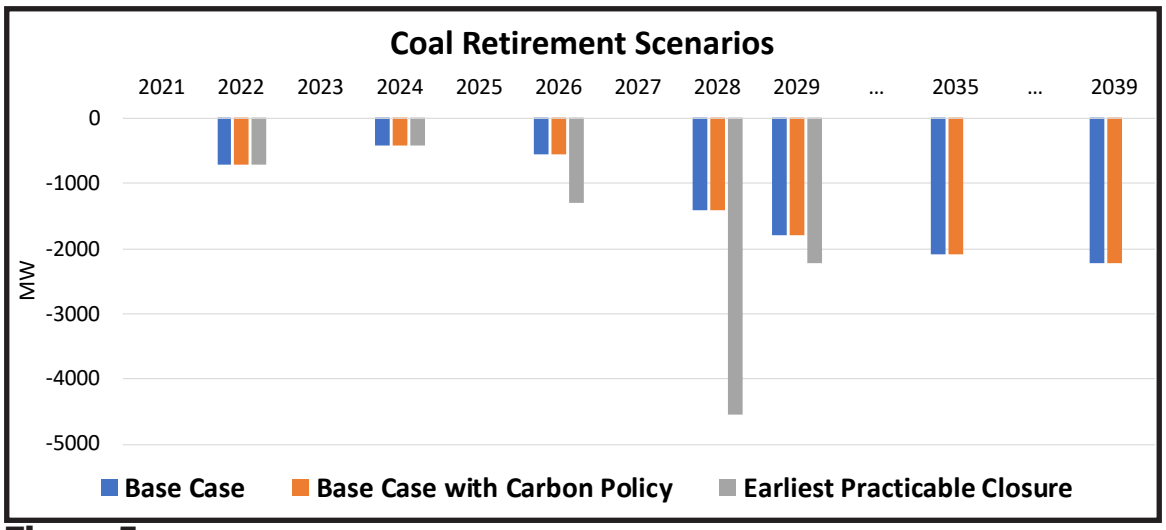


Figure 5

23 Data from IRP Figures 12-F and 12-I.

5. NO NEW GAS

If Duke continues to build fossil fuel generation, ratepayers will be paying more for dirtier energy. Investing in clean energy is already cheaper than building new gas plants and will soon be cheaper than operating existing ones. The combination of carbon dioxide and super potent methane released from building more fossil gas plants will prevent Duke and North Carolina from meeting their climate goals, and it will lock North and South Carolinians into more fossil-fueled energy for decades. Many of these plants will be economically obsolete in a few years as solar and storage become cheaper than new gas plants. Duke needs to stop all new gas investments and minimize the risk of uneconomic assets on their system.

GRADE: F

Duke plans a massive fossil gas buildout across five of its six scenarios in the IRPs. Duke's IRPs also include a no-new-gas scenario, butit has significantly inflated the costs of this scenario and buried hidden assumptions, such as artificially elevating the cost of batteries, transmission upgrades, solar and wind. This scenario also extends the operation of its dirty, aging, expensive coal plants rather than build more new solar. The IRP sets up a false choice between pivoting away from gas and keeping costs low. Duke can follow a no-new-gas trajectory by investing instead in least-cost options: energy efficiency and solar. The IRPs do not model this scenario. See **Figure 6**.

What's more, the plan does not address emissions of methane, a potent greenhouse gas with a Global Warming Potential 86 times higher than that of carbon dioxide over a 20-year span.[24] Methane is the primary component of fossil gas, an estimated 2.3% of which is leaked or intentionally vented throughout the gas supply chain.[25] However, since these

24 https://www.scientificamerican.com/article/how-bad-of-a-greenhouse-gas-is-methane/

25 R. A. Alvarez et al., "Assessment of methane emissions from the U.S. oil and gas supply chain," Science 10.1126/science.aar7204 (2018), https://science.sciencemag.org/content/361/6398/186.full. This review concluded that the

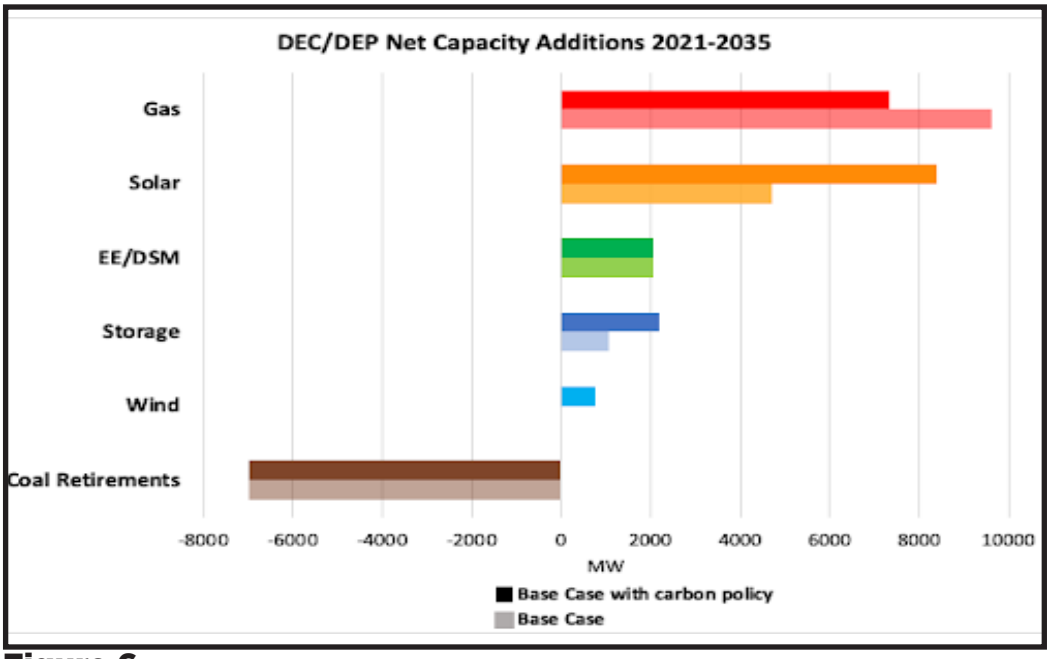


Figure 6

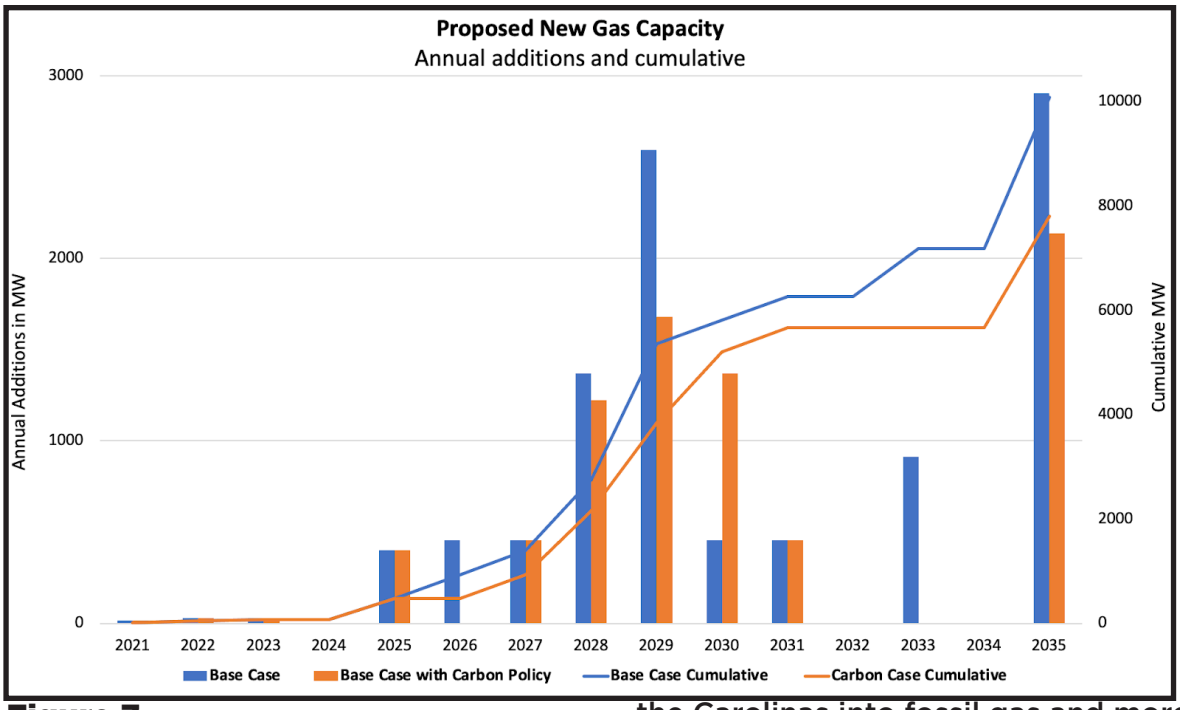


Figure 7

emissions largely occur "upstream" or outside the Duke electricity system and outside the Carolinas, Duke currently ignores methane's impact in its greenhouse gas emission targets. Duke recently set a goal of net-zero methane by 2030 but only for its gas utilities. Duke is also a member of the ONE Future coalition, which aims to reduce methane emissions across the supply chain to 1% by 2025.[26] Clearly, Duke needs to do more to properly account for methane's impacts on DEC and DEP's carbon footprint. See **Figure 7**.[27]

Duke's base case scenario still involves a massive buildout of 10-13 new gas plants (an estimated 44-59 units altogether) totaling over 10 GW of new capacity (including gas retirements nets to 9.6 GW by 2035).[28] Building all these new gas plants would lock the Carolinas into fossil gas and more pipelines. Five of the six scenarios include at least 6.1 GW of new gas plants. Clean energy portfolios will be cheaper than gas by as early as 2024,[29] but ratepayers and shareholders will be paying for gas plants for decades even if they become uneconomic and must be closed early. In fact, Duke's IRPs could saddle ratepayers with up to $4.8 billion in stranded assets as a result of failing to take into account climate change.[30]

Duke does not need to build multiple gigawatts of new fossil gas plants. Renewable energy and efficiency can more cost-effectively meet reliability needs while simultaneously reducing bills, pollution and climate impacts. More gas plants will harm our community and economic health; renewable energy will restore it.

overall methane leakage rate is 2.3%, with 85% of this coming from upstream production, gathering, and processing facilities.

26 "Duke Energy to reduce methane emissions in its fossil gas business to net zero by 2030," https://www.duke-energy.com/_/media/pdfs/our-company/methane-reduction-fact-sheet.pdf.

27 Data from IRP Figures 12-F and 12-I. Note, does not include 514MW gas retirement from DEP in 2021.

28 The base case also plans to retire 514MW of DEP gas capacity in 2021, netting a total of 9.6GW of new gas from 2021-2035.

29 Rocky Mountain Institute Clean Energy Portfolio report, 2020 update

30 Tyler Fitch "Carbon Stranding: Climate Risk and Stranded Assets in Duke's Integrated Resource Plan"
January 2021

6. GO BIG ON RENEWABLE ENERGY

It's now well established that solar is not only the cleanest but also the most cost-effective energy supply choice. A recent study showed that the Carolinas could boost renewable energy to 66% in North Carolina and 57% in South Carolina by 2035, all while decreasing costs to ratepayers. Plus we know that investing in homegrown clean energy boosts the economy, provides cash to landowners and creates local jobs. Duke should be "all in" on solar and other renewable sources, achieving at least 55% renewable energy by 2035.

GRADE: D

The Duke IRPs fail to go big on renewable energy. The base case with carbon policy only goes from 7% renewable energy generation, including hydropower, in 2021 to 15% by 2035. (See **Figures 1** and **6.**) The base case proposes even fewer renewables. These numbers fall far short of where Duke needs to go to eliminate its reliance on fossil fuels and decrease its climate impact. In fact, these 15-year goals are short of the current national average (17.6% in 2019).[31]

Duke hired the National Renewable Energy Lab (NREL) to model an optimized generation mix. Despite Duke's instructions to limit some clean energy potential, NREL still showed 29-34% renewables by 2030, more than double what the IRPs propose.[32]

Solar

In its 2020 World Energy Outlook, the International Energy Administration called solar the "cheapest electricity in history."[33] But, instead of going "all in" for this least-cost power generation source, Duke needlessly limits the amount of solar in the plan. This results in all scenarios being misleadingly expensive and needlessly reliant on fossil fuels.

Duke significantly underestimates the amount of solar that will be coming to the Carolinas over the next 15 years. In the planning process, Duke restricted its model to only allow 300 MW/year of new solar for DEC and 200 MW/year for DEP. Meanwhile, the companies currently have 24x that amount, nearly 12,000 MW of solar projects, awaiting utility approval in the interconnection queue.[34]

Solar + Storage:

What's more, the model Duke uses to select resources for the IRPs requires most of its future solar capacity to be combined with storage. It also baselessly limits the amount that solar plus storage can contribute to peak load. These two assumptions falsely inflate the cost of solar, reduce its benefits to the grid and reduce opportunities for lower-cost clean energy.

Wind

North Carolina is home to the largest wind farm in the Southeast: 208 MW built in 2017 in Dominion territory.[35] NREL estimates 80 GW of land-based wind and over 600 GW of offshore wind capacity in the Carolinas.[36] Yet, the IRPs' base case includes no wind, and the base case with carbon policy includes a mere 750 MW of wind, which doesn't even start until 2033. To justify excluding wind power, Duke claims that

31 US Energy Information Administration, https://www.eia.gov/tools/faqs/faq.php?id=427&t=3.
32 https://www.osti.gov/servlets/purl/1726047 page 14

33 https://webstore.iea.org/world-energy-outlook-2020
34 See IRP table K-1
35 https://www.awea.org/Awea/media/Resources/StateFactSheets/North-Carolina.pdf
36 NREL Carbon Free Resource Integration Study, Phase 2, page 7, accessed at https://www.osti.gov/servlets/purl/1726047

siting challenges make land-based wind not a viable option in NC.[37] However, Duke provides no evidence for this claim, nor does it explain why it can't expand its use of wind from other states.

Offshore Wind

A 2015 Stanford University study, The Solutions Project, researched how every U.S. state could be powered by 100% clean energy by 2050. The projection for North Carolina included 50% coming from offshore wind.[38] North Carolina Governor Roy Cooper also recently announced a partnership with Virginia and Maryland to make the region a hub for offshore wind.[39] Governor Cooper has since taken steps to make this a reality by issuing a request for proposals to assess the supply chain and manufacturing opportunities for offshore wind in the state.[40]Yet Duke includes no offshore wind in its base cases, even though other scenarios include as much as 2.65 GW of offshore wind by 2035. This despite the fact that North Carolina has the best offshore wind resource of any state on the Atlantic Coast, with the potential to power the state multiple times over.[41]

37 Page 197

38 100% North Carolina." The Solutions Project. 2015. Accessed April 12, 2019. https://thesolutionsproject.org/why-clean-energy/#/map/states/location/NC.

39 https://dailyenergyinsider.com/news/27769-maryland-virginia-and-north-carolina-form-partnership-to-develop-offshore-wind/

40 https://energynews.us/2020/05/22/southeast/an-exciting-milestone-north-carolina-takes-first-step-on-offshore-wind-study/

41 https://nccleantech.ncsu.edu/2020/08/24/offshore-wind-organizing-for-north-carolinas-potential-economic-development/

7. EMBRACE MARKET COMPETITION

Recent research shows regional market competition could reduce electricity rates in the Southeast by 23%, saving ratepayers $17 billion per year or $384 billion by 2040. Any new power generation should be acquired through a technology-neutral competitive process that transparently weighs costs and benefits and considers all alternatives, including clean energy portfolios of renewables, energy efficiency and demand response. This will ensure ratepayers are getting the lowest-cost energy, regardless of the power source. Duke should pursue all new generation assets through a transparent, competitive process that includes all alternatives.

GRADE: D

Instead of following best procurement practices, like bundled all-source, competitive procurement, Duke unhelpfully says it would need policies to change to do so. Competitive, market-based processes would not only protect ratepayers from higher costs but also ensure the maximum reduction of pollutants. Duke has no plan to ensure that any new policies will be created to protect ratepayers from uncompetitive higher costs while also optimizing integration of low-cost clean energy.

While some mandates compel Duke to participate in competitive procurement processes, the cases are quite limited in scope.[42] For instance, HB589, passed in

42 These mandates include the North Carolina Renewable Energy and Energy Efficiency Portfolio Standards, the NC Competitive Procurement of Renewable

North Carolina in 2017, requires Duke to set up a competitive bidding process for renewable energy (CPRE) for the purchase of 2,660 MW. While this is a step in the right direction, it represents a mere fraction of the power Duke intends to add to the grid by 2035.

What's more, when competitive bidding does occur, it is not transparent to the public. The IRPs note that information pertaining to fuel costs, outage rates, transmission assumptions and bidding cost data are kept in a Confidential Appendix that is only accessible to the Utility Commissions and interveners in Duke's rate cases. Without having public access to this information, neither the advocates who are not intervening parties to the proceeding nor the general public are able to ascertain whether or not Duke is being forthright in processes where competitive bidding occurs.

Duke gives several cost estimates for transmission upgrades in the IRPs. All of those estimates are given using their current business model, not a competitive process. Duke notes that they would "require constructive regulatory support" to consider changing how investments are made.

Regional coordination

Duke's IRPs do not consider a major opportunity to streamline transmission operations and save money through regional coordination. Unlike many other regions, the Southeast is not part of a regional transmission organization (RTO) which operates the transmission grid and maximizes efficiency across the system. Energy Innovation recently found a Southeastern RTO would save $384 billion, create 285,000 clean energy jobs and reduce electricity sector carbon emissions 37% by 2040. It can achieve this through a fully competitive market for energy capacity and streamlined transmission operation across 7 states.

Instead of supporting an RTO, Duke and other utilities proposed a regional marketplace called "Southeast Energy Exchange Market." The exchange could achieve some of the benefits of an RTO like expanded access to clean energy across the region; however, it would save only $50-$100 million per year, a mere fraction of the $17 billion in annual savings potential of an RTO. Even this watered-down version of regional coordination is not discussed in the IRPs.

Retail competition

North and South Carolina are two of only seven states that do not allow retail third-party power purchase agreements (PPAs), a financing model for small-scale solar that puts no-upfront-cost solar within reach for homeowners and businesses.[43] Duke has actively opposed third-party PPAs, but the mechanism has the potential to add a lot of privately-financed solar to the grid, further displacing the need for new gas and helping state and local governments meet their clean energy targets.

Energy (CPRE) process, the Public Utility Regulatory Policy Act (Federal), and local clean energy power purchase agreements.

43 "3rd Party Solar PV Power Purchase Agreement," June 2019, https://s3.amazonaws.com/ncsolarcen-prod/wp-content/uploads/2019/07/DSIRE_3rd-Party-PPA_June_2019.pdf.

8. DO GRID MODERNIZATION RIGHT

Duke's last IRP update in 2019 ignored the fact that customer-sited solar and energy storage can contribute to a cleaner, more resilient and more economical grid. Many examples around the country demonstrate how one can aggregate distributed solar + storage systems to make a "virtual power plant." Utilities nationwide -- including those in Arizona, Florida and Nevada -- offer rebates to ratepayers for storage systems. With Duke proposing major updates to the grid and operations through its Grid Improvement Plan and Integrated System & Operations Planning (ISOP), now is the time to expand the role of clean, distributed resources. Duke needs to tap into ratepayers' distributed energy resources in its energy plan and allow customer-sited solar + storage systems to participate as a resource.

GRADE: C

The future of the grid is distributed. As ratepayers become even more sophisticated users of the energy system and distributed energy resources become more cost-effective, grid planning processes will need to adapt. That's in part why the Federal Energy Regulatory Commission (FERC) issued Order 2222 in September 2020 which protects distributed energy resources' right to interact with the larger grid.

Duke has acknowledged the distributed future and is working on building the tools to better address it. Since 2019, Duke has discussed developing the analytical capability to better understand what's happening on their grid and facilitate the integration of distributed energy resources in a way that benefits everyone. Although Duke previously noted that this capability would not be ready for the 2020 IRP, it seemed to be a signal that Duke planners saw the writing on the wall and were looking to utilize the distributed value on their system.

Disappointingly, Duke's IRPs offer little that capitalizes on a modern, distributed grid:

- They don't include distributed energy resources or distributed storage as an option for its planning software to select in the process of building the most cost-effective grid.
- Even though ISOP is still incomplete, Duke does not offer any placeholders for how ISOP would interact with the current plan, suggesting either a) this plan will be outdated in 2022, or b) it doesn't anticipate that ISOP will actually change any planning outcomes.
- Duke mentions its Grid Improvement Plan in the section devoted to long-term decarbonization of the energy grid, but it's not able to specify how grid modernization would meet that end or how much carbon it could avoid. Without these details, it's not clear why these expensive upgrades are needed for decarbonization at all.
- Duke wasn't able to deliver on the advanced planning capacity that it initially promised. Despite what was said at the initial ISOP stakeholder meeting, this IRP does not include highly detailed load forecasts, nor does it integrate the suite of tools that form the EnCompass planning software.

Despite promises by Duke, the ball has barely moved forward on a more modern, more distributed grid.

9. DON'T RELY ON IMAGINARY TECHNOLOGY

Duke's 2020 climate report coins a new term, "zero-emitting load following resources" or "ZELFR," to describe an imaginary, zero-emissions, on-demand energy source that they claim to need in order to decarbonize the grid; however, ZELFRs are nothing more than a way for Duke to continue to operate a fossil-heavy grid while waiting for a unicorn technology. We know we can reduce carbon emissions with existing technologies. Duke's IRPs cannot rely on hypothetical technologies; we already have the tools we need to transition to a healthier, carbon-free energy future.

GRADE: F

Duke's so-called ZELFRs include small modular nuclear reactors, hog waste methane and carbon capture and storage. Rather than use existing, proven renewable technologies, Duke is betting on the development of hypothetical ZELFR technologies. Duke is avoiding the simplest and least expensive path to net zero: energy efficiency, demand side management, solar and battery storage. Instead, it is promoting more fossil-dependent technologies that do not exist.

Some advanced technologies like green hydrogen may someday prove useful, but Duke does not need them to reach its net-zero goals nor its reliability requirements.

Duke is delaying investments in available renewables right now in favor of illusory ZELFR unicorn technologies. Duke must stop talking about ZELFRs and start investing more in solar, energy efficiency and demand response technologies that are zero-emitting and available now.

10. NO LOBBYING AGAINST THE PUBLIC INTEREST

Amidst the COVID pandemic, a utility front group tried to kill rooftop solar at the FERC. And the recent $60 million bribery scandal from First Energy in Ohio has shown that there's little utility companies won't do to get what is best for their bottom line. There is a long, recorded history showing that Duke and the energy industry have funded concerted efforts to sow misinformation and doubt about the dangers of anthropogenic climate change into the public consciousness. Duke should not lobby against the public interest and the climate.

GRADE: F

As a semi-public entity providing critical resources to society, Duke should not lobby the lawmakers and regulators charged with ensuring that they are acting in the public interest.

In-depth analysis authored by the Energy and Policy Institute reviewed Duke's political giving and found Duke made at least $2.4 million in political contributions in advance of the 2020 elections.

The Duke Energy Political Action Committee Board of Directors decides which political candidates to donate to based on "Candidate Selection Criteria" that include specifically targeting candidates and public officials that serve as members of leadership or committees with jurisdiction over matters that impact the business. How can public officials remain neutral and unbiased in their

duties if the utilities they need to oversee helped get them elected?

Duke should NOT fund nor lobby the legislators and regulators that are charged with overseeing their monopoly. Duke should immediately end all political spending to ensure that the company operates in the public interest.

Appendix: Scoring Criteria

	Climate goals
A	70% greenhouse gas reduction by 2030 and 100% by 2050.
B	60-70% greenhouse gas reduction by 2030 and 90-100% by 2050.
C	50-60% greenhouse gas reduction by 2030 and 80-90% by 2050.
D	40-50% greenhouse gas reduction by 2030 and 70-80% by 2050.
F	Business as usual or worse.

	Affordability and equitable access to clean energy
A	Comprehensive plan to eliminate unaffordable energy burdens for all low- and moderate-income ratepayers. Targeted investments for low- to moderate-income households and a roll out of income-appropriate arrearage management plans, percent of income payment plans (PIPP) and arrearage balance forgiveness for all PIPP-enrolled ratepayers.
B	Good plan to eliminate unaffordable energy burdens for ratepayers. Slight increases in energy efficiency, demand response and new arrearage forgiveness/payment plans, with targeted low-income EE/DR investments.
C	Steps in the right direction to alleviate unaffordable energy burdens for ratepayers. Slight increases in EE and DR, small rollout of payment plans or arrearage forgiveness.
D	No improvements to energy burdens
F	Increasing energy burdens. Decreases in EE and DR, no balance management or forgiveness.

	Energy efficiency
A	National leadership: Pioneering new best practices for energy efficiency and demand response.
B	Significant increases in energy efficiency, demand response.
C	Slight increases in EE and DR, including all cost-effective energy efficiency using current state cost tests.
D	No improvements in EE.
F	Significant decreases in EE and DR.

	Coal Retirement
A	Accelerate retirement of all coal plants. Close half of coal fleet by 2025. Coal-free energy by 2030. Incorporate plans for just transition of coal plant workers and communities
B	Accelerate retirement of most coal plants, close half of coal fleet by 2025, coal-free energy by 2035, incorporate plans for just transition of coal plant workers and communities.
C	Accelerate retirement of some coal plants, close half of coal fleet by 2030, coal-free energy by 2040, incorporate plans for just transition of coal plant workers and communities.
D	No acceleration of coal plant retirement. No plans for just transition of coal plant workers and communities.
F	Continued reliance on coal.

	No New Fossil Gas
A	Stop all new gas spending. Quantify risk of stranded assets and minimize risk of stranded assets.
B	Significantly limit gas investments.
C	Eliminate small amount of gas investments.
D	Status quo.
F	Worse than status quo.

	Renewable Energy
A	55% or greater renewable energy by 2035.
B	40% renewable energy by 2035.
C	30% renewable energy by 2035.
D	15% renewable energy by 2035.
F	Less than 15% renewables in 2035.

	Market competition
A	IRPs propose full market competition for all new generation assets, including in a regional market.
B	IRPs propose good improvements towards full market competition for all new generation assets, including in a regional market.
C	IRPs take small steps towards full market competition for all new generation assets, including in a regional market.
D	Status quo.
F	Worse than status quo.

	Grid Modernization
A	IRP incorporates distributed energy resources as key component of plan, providing ratepayers incentives and incorporates the full value of DERs.
B	IRP significantly improves inclusion of distributed energy resources.
C	IRP includes small amount of DERs, e.g. pilot programs.
D	Status quo.
F	Worse than status quo.

	Imaginary technologies
Pass	IRPs do not rely on hypothetical technologies.
Fail	IRPs do rely on hypothetical technologies.

	Lobbying
Pass	Duke commits to stop lobbying against the public interest and the climate.
Fail	Duke does not commit to stop lobbying against the public interest and the climate.

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