ETF Comments to MD House HB0579 and Senate SB0474_

Uploaded by: Allen Schaeffer

Position: FAV

February 20, 2024

To: Members, Maryland House Economic Matters Committee

Members Mayland Senate Committee on Education, Energy, and the Environment

IN RE: Expression of Support for Critical Infrastructure Streamlining Act of 2024 (SB 0474 and HB 0579).

The Engine Technology Forum ("ETF") is a national not-for-profit educational association headquartered in Frederick MD. We represent manufacturers of internal combustion engines and equipment, emissions component suppliers and fuel producers of petroleum and renewable fuels. More information is available at www.enginetechforum.org

Established in 2000 initially as the Diesel Technology Forum, we have a long history of working with a wide range of government including this body, and other stakeholders seeking solutions to reduce emissions from and improve the environment on matters regarding power generation, industrial and agricultural equipment and goods movement and transportation.

As it turns out, the motivation for the above-captioned legislation that would reclassify backup generators for data center applications in Maryland occurs in our own Frederick County local community where our offices are located. This is the matter regarding the Quantum Loophole data center campus and generator permitting issues surrounding Aligned Data Centers.

Members of the Engine Technology Forum are leading global manufacturers of electric power generation systems including backup diesel generators. A full listing of members is available on our website www.enginetechforum.org/members.

We are strongly in support of SB 474 and HB 0579 that would amend existing state law regarding the classification of certain power generators as generating stations and therefore eliminate the need for receiving a Certificate of Public Convenience and Necessity (CPCN) from the Public Service Commission.

While we do not have any specific interest or relationship with the specific projects and business noted above, we do have an interest as a constituent from Frederick County and an entity in ensuring that there is accurate information provided with regard to diesel back-up generators in these settings.

Watching the situation with Aligned Data Centers play out over the last several months, and particularly the Maryland Public Service Commission's determinations and comments regarding diesel generators last fall, reinforced that there is a lack of understanding about diesel backup power systems in these applications.

Diesel generators are the gold standard for providing reliable back up electric power generation for a wide variety of applications. This is due to their superior load carrying capacity, ability to deliver high quality electrical power, rapid response time, affordability, wide access to fuel, self-contained fuel storage and an expansive network of servicing and support.

There are hundreds, if not thousands of applications with installed backup generators across Maryland today at hospitals, communications centers, college campuses, fire stations, manufacturing facilities, public utilities and water and wastewater treatment plants to name a few. These units are spec ’ed to meet building and life safety codes and other requirements unique to the facility and applications.

As part of general operating procedures, the units are typically regularly activated and “exercised” for 1 hour each week to ensure system readiness in the event of an outage. EPA rules at 40 CFR 60.4211 allow for the use of emergency generators for maintenance checks and readiness testing for up to 100h per year.

Various types of diesel generators are available and can be utilized for different applications and as such can have different emissions performance levels. The exact specification (power delivery, fuel storage capacity, emissions profile, etc.) units for data centers like other installations are determined by engineering and design standards, code requirements, power needs of the facility, local environmental and other permitting requirements.

While petroleum diesel fuel is the standard fuel for back up diesel generators, the units are also approved by all manufacturers to utilize 100 percent renewable diesel fuel, also known as HVO (hydrogenated vegetable oil). This fuel is a highly refined drop-in hydrocarbon that is a diesel fuel replacement. It is produced from the same feedstocks as biodiesel, such as waste animal fats, soybean oil, used cooking oil and other sources. As such it has 50 to 85 percent lower greenhouse gas and other emissions compared to conventional petroleum. While widely available in California and some parts of the pacific northwest today, suppliers are starting to bring some supplies of renewable diesel to the east coast, though in limited quantities, for bulk users. Using renewable diesel fuel in back up power systems can contribute positively to the data center’s sustainability and ultimate carbon footprint.

Our highly connected digital world today relies increasingly on data centers to store and process a vast amount of information that drives our banking, education, health care, communications and many other systems and networks. Backup generators are like an insurance policy; you hope you never need them, but you have them to protect your assets and quality of life. Momentary losses of grid power can seem like a minor inconvenience, but they can have lasting economic and other consequences for all those affected. This is why reliable backup power systems and diesel generators are such a critical part of data center operations.

Through passage of SB 474 and HB 0579, we can ensure that data center applicants in Maryland will have the ability to utilize whatever power systems their facilities require, in accordance with local permitting and other requirements, rather than be subject to mischaracterization of the power systems as generating stations and subject to Public Service Commission regulation.

Thank you for consideration of these comments, and we are happy to answer any questions.

Allen Schaeffer

Executive Director

aschaeffer@enginetechforum.org

2024 Aligned HB 579 Support.pdf
Uploaded by: Ashlie Bagwell
Position: FAV

February 20, 2024

VIA MyMGA

Education, Energy & the Environment Committee
Maryland Senate
Miller Senate Office Building
Annapolis, MD
Attn: Senator Feldman, Chair

Economic Matters Committee
Maryland House of Delegates
House Office Building
Annapolis, MD
Attn: Delegate C.T. Wilson, Chair

Re: Support of the Critical Infrastructure Streamlining Act of 2024 (House Bill 579 and Senate Bill 474)

Dear Committee Members,

Aligned Data Centers strongly supports the passage of the Critical Infrastructure Streamlining Act of 2024 (House Bill 579 and Senate Bill 474). This legislation appropriately clarifies the proper role of the Maryland Public Service Commission (the "PSC"), excluding emergency generators that do not provide power to the grid from the PSC's oversight.

The 1971 law requiring Certificates of Public Convenience and Necessity (CPCN) from the PSC was designed to *facilitate* the development of power plants needed to supply the increasing energy demands of Marylanders and grow Maryland's economy – providing the PSC with extraordinary powers to override local NIMBY (Not In My Back Yard) objections. Now, however, the law is being interpreted to *prevent* development that the Governor, the Legislature, and local authorities desire. Worse yet, a law designed to regulate the supply of power **to** the grid is being interpreted by the PSC to apply to generators which are entirely **off** the grid.

It is important to note that the proposed legislation makes **no change** to any air permitting, environmental or land use rule or regulation. All environmental and air permitting rules and regulations will continue to be administered by the Maryland Department of the Environment. All environmental controls on emissions, including the minimal greenhouse gas emissions of the generators, will continue to be subject to the same requirements. Land use will continue to be governed by local authorities.

Backup generation to support a company's onsite operations is not generating power for the general public (the purpose of a CPCN). And the reality is that such back-up generators will rarely, if ever, run for any extended period. But, without backup generation in place at hospitals, police departments, data centers, and fire stations, one can increasingly imagine a regional weather event or act of sabotage that could bring down the utility grid for an extended period of time, and all critical facilities and communications going dark without backup power.

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Data center providers and occupants are leaders of sustainable practices and among the largest purchasers of green power. It is the data center industry that is driving much of the innovation in sustainability. Aligned itself is one of the industry's most progressive data center colocation providers with firm commitments and delivery of sustainable data center capacity to its customers. Aligned also was the first North American data center provider to secure sustainability-linked financing, tying its multi-billion-dollar financing to sustainable business performance. The Critical Infrastructure Streamlining Act of 2024 is not about sustainability and climate change. It is about who determines when Maryland's environmental and land use laws, rules and regulations are satisfied.

With regard to data centers, the Legislature passed data center tax exemption legislation in 2020, announcing a desire to bring data center development to Maryland. Data centers are the heart of today's digital infrastructure – more than just online shopping, social media and entertainment, data centers provide mission critical infrastructure for medical care, communications, education, news, government services and everything used professionally and personally on a daily basis. Data centers power humanity, and with the advent of artificial intelligence and machine learning, their importance is only growing. Without data centers, Maryland will be left behind, and certainly cannot be the headquarters of 21st Century or a leader in artificial intelligence, high performance computing, and life sciences, as the Governor has announced. Additionally, Maryland stands to lose out on billions of dollars of investment – investment that can fund the Blueprint for Maryland and other initiatives – and the creation of thousands of jobs.

Building a data center involves many, many months of planning and involves hundreds of millions (perhaps billions) of dollars of investment. It does not happen overnight. To date, our understanding is that there is not yet a single data center that has been built utilizing the tax exemption program. It was not until 2023 that the 2020 legislation started to generate some tangible data center development activity. Aligned was the among the first to meaningfully advance a data center project. To proceed, there must be a stable and predictable market, governed by settled rules and regulations. Investment requires certainty. It cannot be subject to the whims of an unelected, unaccountable commission.

Aligned Data Centers respectfully requests the passage of the Critical Infrastructure Streamlining Act of 2024 (HB579 and SB474). With it becoming law, we can revisit our planned project in Frederick County that could generate more than $35 million annually in local tax revenue upon full build-out and billions of dollars of total economic output.

Sincerely,

David W. Robinson, EVP

SB0474 -- Critical Infrastructure Streamlining Act

Uploaded by: Brian Levine

Position: FAV

Senate Bill 474 -- *Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)*
Senate Education, Energy, and the Environment Committee
February 22, 2024
Support

The Montgomery County Chamber of Commerce (MCCC), the voice of business in Metro Maryland, supports Senate Bill 474 -- *Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024).*

Senate Bill 474 alters establishes the definition of "generating station" for the purpose of exempting the construction of generating facilities used to produce electricity for the purpose of onsite emergency backup and certain test and maintenance operations from the requirement to obtain a certificate of public convenience and necessity or certain other related approvals.

MCCC supports this bill because it implicitly understands that Maryland must be a part of an innovative economy by protecting its growing technology industries. These industries include, but are not limited to, data centers. Maryland, with its proximity to Internet hubs in Virginia and incentives already put in place by the Maryland General Assembly to grow the data center industry, is poised to grow this vital segment of the economy. Without the proper pieces in place, such as generating stations that provide necessary emergency backup power, the data industry cannot grow and thrive in Maryland.

The data center industry does not just provide jobs and economic opportunity, but it can also provide significant property tax revenue to local governments. Furthermore, the data center industry is a steppingstone to other technologies and industries that every state covets for economic development, including the development of artificial intelligence and quantum computing. This bill provides important tools for economic growth while keeping in place important environmental regulations pertaining to backup generators.

For these reasons, the Montgomery County Chamber of Commerce supports Senate Bill 474 and respectfully requests a favorable report.

The Montgomery County Chamber of Commerce, on behalf of our nearly 500 members, advocates for growth in business opportunities, strategic investment in infrastructure, and balanced tax reform to advance Metro Maryland as a regional, national, and global location for business success. Established in 1959, MCCC is an independent non-profit membership organization and a proud Montgomery County Green Certified Business.

Brian Levine | Vice President of Government Affairs
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sb474.pdf
Uploaded by: brian quinn
Position: FAV

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February 15, 2024

Senator Brian J. Feldman, Chairman
Senate Education, Energy and the Environment Committee
2 West, Miller Senate Office Building
Annapolis, Maryland 21401

RE: Senate Bill 474 - SUPPORT

Dear Chairman Feldman:

I am writing to express my support for **Senate Bill 474 (Certificate and Necessity and Related Approvals- Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)).** The fact that SB 474 is sponsored by Governor Moore and includes a long list of co-sponsor (many of whom serve on this Committee) speaks to the importance of this legislation .By way of background, I am the Managing Director of Cushman & Wakefield's Strategic Advisory Services Group, based in Baltimore, as well as an active member of the firm's national Data Center Advisory Group. I currently represent a number of owners, investors and operators in Maryland and the region who have data center projects in various stages of development.

As you are well aware, the growth of the information technology business over the past two decades has only been possible through the creation of a robust backbone of data centers and information distribution infrastructure, all of which are dependent on reliable primary and back-up power. Power generators and T&D (transmission and distribution) utilities alike are racing to provide increased and varied sources of power to meet not only current needs, but the next wave of growth driven by artificial intelligence technology. Primary power is important, but ONLY if it is backstopped by reliable onsite emergency backup systems. This is particularly true in the case of congested urban markets, where demand for baseline power is high and the local grid is often stressed.

Maryland took an important step to enter this market 2 years ago, with the enactment of the Data Center Personal Property Tax Exemption legislation (Chapter 640 of the Laws of 2020). Until then, our State was not considered seriously by users and developers, despite being on the doorstep of the largest data center market in the world- Northern Virginia. Your thoughtful and energetic work on that legislation literally put our State in the game overnight, and project inquiries and active developments have dramatically increased since. The Aligned/Quantum Loophole project in Buckeystown is just such a project that will validate Maryland as a legitimate player in this industry. In our business, if the "anchor tenant" succeeds, many others will soon follow. We believe Maryland is on the cusp of going from also-ran to a serious contender in the next phase of information technology growth.

This industry relies on criticality and reliability of power. Nothing less than full redundancy is acceptable, and to achieve that, fail-safe backup systems are a must. While new technologies are emerging that will reduce the carbon footprint of backup systems, for now, diesel and natural gas are the preferred fuels. Restricting their use- and proscribing the architecture of the systems themselves will send a strong message to the industry that Maryland is, in fact, **not** "open for business".

Conversely, **SB474**, enhances Maryland's competitive position in the data center market by recognizing the critical nature of backup power and establishing prudent guidelines for its operation, with an eye on environmental impact. This legislation sends a powerful message to the industry at a most pivotal time.

We are at the cusp of a transformational age of development in information technology, that some have dubbed the "…dawning of the internet 2.0…", and Maryland is poised to capture a significant share of that growth provided we give the industry the confidence and the tools necessary to locate and invest here.

For those reasons, I strongly urge you to support the above referenced legislation.

Respectfully,

David Baird, CRE, FRICS
Managing Director
Strategic Advisory Services

cc: Members, Senate Education, Energy and the Environment Committee

SB474 RMC Support Testimony.pdf
Uploaded by: Charlotte Davis
Position: FAV

Rural Maryland Council
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Susan O'Neill, Chair
Charlotte Davis, Executive Director

POSITION STATEMENT

Senate Bill 474- Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)

Senate Education, Energy, and the Environment Committee

February 22, 2024

The Rural Maryland Council **SUPPORTS** Senate Bill 474 - Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024). This bill defines generating stations that provide energy backup systems for an exemption of a certificate of public convenience and necessity from the Public Service Commission. The intent of the bill is to address a situation that led to the denial of a certificate of convenience and necessity and the subsequent withdrawal of a potential data center project in Frederick Maryland.

Data centers are secure facilities that house computer and network equipment that store, process and distribute large amounts of data. Data centers are considered the foundation of today's booming digital economy and rapidly growing technology sector. For example, drones and sensors used by farmers to monitor their crops and soil are powered by data centers, as are gene therapies for diseases like cancer. Data Centers' potential economic impact could be substantial. Construction of the Quantum Frederick data center would have supported $25.8 million in tax revenues for Frederick County and another $248 million for the state. Upon full build out, steady-state operations would have supported an estimated $41 million in revenues for Frederick County each year, which translated into approximately 3.8 percent of the County's FY 2022 revenues. Another $197 million would be generated for the State of Maryland each year. https://mdtechcouncil.com/wp-content/uploads/2023/10/Sage-MDTC-Data-Center-Impact-Report.pdf

In 2020, the Maryland General Assembly established a sales-and-use tax exemption for the purchases of required equipment for data centers. Our neighbor Virginia has benefited significantly from the positive tax treatment of qualified data centers. According to a 2019 report from Virginia's Joint Legislative Audit and Review Commission, data center employment and investment have increased as data center incentives have expanded in the state. However, Virginia is running out of space and companies are looking to its neighbors to determine where to expand.

According to DataCenters.com, the data center and colocation market in Maryland has witnessed significant expansion, driven by the increasing need for efficient data storage solutions and cloud services. Reports indicate that the wholesale colocation market in Maryland is experiencing remarkable growth due to the rising demand for these critical services. The state's data center facilities currently totals 961,000 square feet. Moreover, Maryland has emerged as an excellent alternative to Northern Virginia for customers seeking colocation services.

SB474 will boost Maryland's economic development by attracting data centers and supporting the state as a leader in innovation and investment in cyber and information technology. The Council respectfully requests your favorable support of SB 474.

The Rural Maryland Council (RMC) brings together citizens, community-based organizations, federal, state, county and municipal government officials as well as representatives of the for-profit and nonprofit sectors to collectively address the needs of Rural Maryland communities. We provide a venue for members of agriculture and natural resource-based industries, health care facilities, educational institutions, economic and community development organizations, for-profit and nonprofit corporations, and government agencies to cross traditional boundaries, share information, and address in a more holistic way the special needs and opportunities in Rural Maryland.

Bowers Definition of Generating Station SB0474 Let

Uploaded by: Dale Sheppard

Position: FAV

W.E. Bowers, Inc.
Mechanical Construction,
Plumbing and HVAC Service

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Beltsville, MD 20705
301 ▪ 419 ▪ 2488
Construction Fax: 301 ▪ 419 ▪ 2711
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Chairman Feldman and Committee Members
Education, Energy, and the Environment Committee
2 West
Miller Senate Office Building
Annapolis, MD. 21401

February 21, 2024

SB-474 Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)

I ask for a favorable vote on SB-474

Thank you for allowing me to provide written testimony on SB-474.

My name is Dale Sheppard, and I am with W.E. Bowers, Inc. in Beltsville, Maryland. I have worked in the mechanical contracting industry for the last 42 years.
We at Bowers take pride in building projects that provide benefit to the communities of Maryland as well as good paying jobs.

Bowers is and has been engaged with construction, service and maintenance of HVAC and Plumbing systems on Data Center projects throughout the DC Metro area for many years.
It has been our experience that properly located and developed Data Centers bring jobs and tax revenue to the respective locality. Bowers employs over one thousand trades persons and administrative personnel. Although we work on a variety of projects, a large percentage of that workforce is committed to Data Center related work.

I am writing to endorse this legislation in the context that it will enable Maryland to expand its ability to compete with other states and reap the benefits of Data Center construction and operations.

It appears to me that wording and definitions in previous legislation may have unintentionally prohibited the growth of Data centers in Maryland. I cite specifically the planned Quantum Loophole Data Center Campus in Frederick County. This bill would help distinguish important differences between private backup generators and public utility generating stations.

While there are always pros and cons to any kind of development, Data Centers are necessary to progress and the implementation on current and future technologies. I do believe that the Data Center industry is aware and conscious of environmental concerns. I believe that they are consistently working on new ideas and technologies to enhance everyday life for all stake holders and reduce their environmental impacts.

By passing SB-474 it would ensure that Maryland and its citizens will have its fair share of opportunity in this market. This is further emphasized by Governor Moore's actions to put forth and push this legislation through.
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Once again, I ask you for a favorable vote on SB-474.

Respectfully,

Dale Sheppard
The Bowers Group
12401 Kiln Ct.
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Testimony SB474.pdf
Uploaded by: Debbie Cohn
Position: FAV

Committee: **Senate Education, Energy and the Environment**
Testimony on: **SB474: Critical Infrastructure Streamlining Act - Transportation and Climate Alignment Act of 2024**
Submitting: **Deborah A. Cohn, individual**
Position: **Support with Amendments**
Hearing Date: **February 22, 2024**

SB474 waives the need for a certificate of public convenience and necessity (CPCN) for backup generators for industries that are essential for public health and safety in certain situations and, like technology hubs that provide safe, reliable storage of data, may significantly support Maryland's economic growth.

Maryland has committed to reducing its greenhouse gas emissions to 60% of 2006 levels by 2031 and transitioning to a net-zero economy by 2045. State actions need to keep this goal in mind even as it considers other important state goals. The revisions to the Public Utilities Act in SB474 do not adequately keep this in mind.

A recent Brookings Blog makes clear that one of the more important changes needed to decarbonize an economy is completely removing fossil fuels from our electric grid. And even if electric generators produce electricity that will be used only for on-site back-up power for a particular industrial or commercial use and never enter the grid, *any use of fossil fuels*, including diesel power typically used for back-up generators when the electric grid experiences a failure, undermines the goal of decarbonizing our economy. Thus, any decision to authorize installation of diesel powered back-up generators deserves review by the Public Service Commission (PSC) with significant opportunity for public engagement and local community involvement.

The Comptroller's State of the Economy report showed that despite many positive economic indicators in Maryland, "Maryland's economic growth effectively stalled in 2017 and…has been stagnant ever since. "From between the fourth quarter of 2016 to the first quarter of 2023, Maryland's Gross Domestic Product (GDP)…has grown 1.6%, compared with 13.9% for the entire U.S. during the same period." Maryland must do better. Indeed, industries that support public health and safety, such as hospitals and health-related research centers, and the possibility of technology hubs that support safe and reliable storage of data, may support significant economic growth in Maryland, with or without a significant increase in jobs. But the need for these and similar high-energy-use industries in Maryland to ensure secure, reliable, full-time access to electricity, and the importance of job growth and a stronger economy do not justify exemption from opportunities for robust regulatory review and public engagement regarding the need for back-up diesel powered energy generation.

In 2023, Aligned Data Centers canceled its proposed project as part of the Quantum Loophole project in Frederick County, citing the decision by the PSC to deny the exemption for its 168 back-up diesel generators. Cumulatively, these generators would have produced more than 500MW of energy, carrying a significant air pollution load.[1] This denial was based, at least in

[1] https://www.fredericknewspost.com/news/economy_and_business/aligned-pulls-plug-on-data-center-project-cites-objections-to-states-ruling-on-generators/article_a2f7dbaf-7ead-560b-946f-79cfbe675479.html

part, on a mandate established by the Maryland General Assembly in 2021 to require the PSC to consider labor conditions as well as climate impact when awarding a CPCN.[2] This legislation was intended to ensure that decisions made by our state's regulatory agencies are aligned with our shared goals of climate emissions reduction and improved air quality. SB474 works in direct conflict with this law and contributes to our state's climate pollution, including resulting adverse health outcomes, just as Maryland is working so hard to reduce it.

In short, we need to grow Maryland's economy wisely, consistent with our other goals. SB474 does not do this.

SB474 would result in exempting backup diesel generators from the CPCN process if "essential" for public safety or infrastructure. These terms are not adequately defined in the statute so it is not clear how broadly the exemption may apply in the future. Exempting back-up diesel powered generators from the CPCN process undermines those investments and the state's progress to improved air quality and public health. Maryland is investing heavily to accelerate the shift to clean energy to achieve its air quality, public health and climate goals, closing coal fired power plants and encouraging offshore wind and solar. Exhaust emissions from diesel generators include nitrous oxides, other gases and fine particulate matter that worsen respiratory ailments and increase the risk of heart problems, premature death and lung cancer.[3] The negative health impact is multiplied in communities located in areas already exposed to considerable amount of diesel exhaust, for example from diesel-powered large trucks. The cumulative impact raises environmental justice concerns. Exempting back-up diesel powered generators from the CPCN process undermines Maryland's considerable effort to reduce greenhouse gas and other polluting emissions and improve public health, ensure public and community engagement and protect Maryland's investment in clean energy and public health.

The CPCN process is a well-established and clear process that protects against these negative impacts. **Accordingly, I respectfully request that the Committee amend SB474 to ensure PSC overview in a CPCN process of installation of back-up diesel generators covered by SB474 to ensure protection of (i) state efforts to reduce greenhouse gas pollution, protect air quality, and protect public health, (ii) the public's interest in transparency and participation, and (iii) environmental justice.**

Thank you.

Deborah A. Cohn

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[2] https://mgaleg.maryland.gov/2021RS/chapters_noln/Ch_614_hb0298T.pdf

[3] https://mde.maryland.gov/programs/air/mobilesources/pages/dieselhealthandenvironmentaleffects.aspx#:~:text=Health%20studies%20show%20that%20exposure,premature%20death%2C%20and%20lung%20cancer.

SB0474-JUD_MACo_SUP.pdf
Uploaded by: Dominic Butchko
Position: FAV

MARYLAND Association of COUNTIES

Senate Bill 474

Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)

MACo Position: **SUPPORT**

To: Education, Energy, and the Environment Committee

Date: February 22, 2024

From: Dominic J. Butchko

The Maryland Association of Counties (MACo) **SUPPORTS** SB 474. The bill ensures that certain emergency generating stations do not need the full Certificate of Public Convenience and Necessity (CPCN) approval.

SB 474 will wisely enable special-use energy facilities intended for only occasional use, rather than full-time generation, to be considered in that fair context. Under this bill, Maryland retains the close examination of energy generators whose use is central to the electric grid and overall power availability, but does not hold that same standard to limited use facilities employed merely as back-up sources to ensure continuous power for a sensitive facility. In a modern, and increasingly technology-driven economy, this distinction is important for Maryland's own growth strategies.

The ability to provide back-up generating capacity is essential in ensuring that certain critical infrastructure remains fully operational in emergencies. Unlike other forms of power generation, back-up generating stations are not used as a primary and long-term source of electricity, but simply as a stop gap measure when primary sources unexpectedly become unavailable. Several major Maryland industries require back-up generating stations, including hospitals, universities, laboratories, data centers, etc. By clarifying back-up generating stations are exempt from the CPCN process, the State will be removing unnecessary roadblocks to both public safety and economic development.

SB 474 is a commonsense bill as it creates a modified consideration of back-up or emergency facilities that do not properly fit into the full-time energy generation landscape, by their inherently limited intended use. Accordingly, MACo urges the Committee to issue a **FAVORABLE** report for SB 474.

SB 474 - Certificate of Public Convenience and Nec

Uploaded by: Donna Edwards

Position: FAV

MARYLAND STATE & D.C. AFL-CIO

AFFILIATED WITH NATIONAL AFL-CIO

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President
Donna S. Edwards

Secretary-Treasurer
Gerald W. Jackson

SB 474 - Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)
Senate Education, Energy, and the Environment Committee
February 22, 2024

SUPPORT

Donna S. Edwards
President
Maryland State and DC AFL-CIO

Chairman and members of the Committee, thank you for the opportunity to provide testimony in support of SB 474. My name is Donna S. Edwards, and I am the President of the Maryland State and DC AFL-CIO. On behalf of the 300,000 union members in the state of Maryland, I offer the following comments.

SB 474 exempts onsite energy generation units from the Certificate of Public Convenience and Necessity (CPCN) process if they are primarily used for emergency backup or testing and maintenance operations. SB 474 does not allow these generating units to be connected to the grid and still requires that they obtain permits from the Maryland Department of Environment. These changes to Maryland's public utilities law creates exemptions for critical infrastructure like hospitals and data centers, which are typically connected to the grid, but need emergency generators to ensure 24/7 reliability.

Emergency or backup energy generation systems need to be reliable and work in all weather conditions. Not all energy sources provide this type of reliability. Solar and wind generation are weather dependent and are not optimal for use during the types of conditions where grid-provided electricity is not available. Diesel energy generators are the industry standard for large scale emergency power generation. The technology for reliable alternatives is simply not there. The engineering consulting firm Black & Veatch found that natural gas, battery storage, and hydrogen fuel cells represented the best potential future sources.[1]

California's Air Resource Board, a state renowned for its strong air quality standards, recognizes the need for diesel generators as emergency sources of power, granting blanket exemptions to its Airborne Toxic Control Measure during public safety power shutoffs.[2] In 2020, Google Vice President of Global Data Centers estimated that there are more than 20 GigaWatts of backup diesel generators powering the data center industry.

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[1] Phil Fischer. "Decarbonizing Data Centers: 3 Replacements for Diesel Generators." Black & Veatch
[2] California Air Resources Board. "Emergency Backup Generators." California Environmental Protection Agency.

Without SB 474, large critical infrastructure projects are subject to the Public Service Commission's (PSC) decision (Order No. 90830) that emergency backup generation with an aggregate size above 70 MW are subject to the lengthy CPCN process. This process would also condition CPCN approval to the PSC's responsibility to supervise and regulate: *"the preservation of environmental quality, including protection of the global climate from continued short–term and long–term warming based on the best available scientific information recognized by the Intergovernmental Panel on Climate Change; (vi) the achievement of the State's climate commitments for reducing statewide greenhouse gas emissions, including those specified in Title 2, Subtitle 12 of the Environment Article."*[3] This requires the PSC, without regard for viability or reliability of the energy source as an emergency backup, apply the state's emission reduction goals and deny CPCN exemptions or approvals from critical infrastructure projects unless they use energy sources that are not appropriate for emergency use.

We were disheartened to see the decision of the PSC regarding the Aligned Data Center in Frederick County. Data centers are an important source of high quality family sustaining jobs. Many of the contractors that work on projects like these employ union workers, making data center projects an engine of Maryland's middle class. Regulatory certainty is necessary for the stability of this emerging industry. The state has made it clear through its own tax exemptions that it hopes to see more data centers. By rejecting Aligned Data Center's request to use industry standard backup diesel generators it created new uncertainty for all data center projects in the state. Maryland already lost one opportunity for good jobs. Sensible and commonsense energy policies can prevent us from losing out on future opportunities.

We urge a favorable report on SB 474.

[3] Maryland Code. Public Utility Article § 2-113(a)(2)

SB0474_FAV_MTC_CPCN & Rel. Approvals - Def. & Gen.
Uploaded by: Drew Vetter
Position: FAV

MARYLAND TECH COUNCIL

TO: The Honorable Brian J. Feldman, Chair
Members, Senate Education, Energy, and the Environment Committee
The Honorable Senate President Bill Ferguson (Administration)

FROM: Andrew G. Vetter
Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman
Christine K. Krone
410-244-7000

DATE: February 22, 2024

RE: **SUPPORT** – Senate Bill 474 – *Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)*

The Maryland Tech Council (MTC) writes in **support** of *Senate Bill 474: Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)*. We are a community of nearly 800 Maryland member companies that span the full range of the technology sector. Our vision is to propel Maryland to become the number one innovation economy for life sciences and technology in the nation. We bring our members together and build Maryland's innovation economy through advocacy, networking, and education.

The MTC regularly advocates for policies that will grow Maryland's digital economy. This bill makes common sense provisions for critical infrastructure, such as generating stations that are necessary for the operation of the facilities that will result in this digital transformation.

As one example of the way in which the digital economy can transform Maryland, the MTC commissioned a third-party study of the planned data center campus sited at the old Eastalco smelting plant site in Buckeystown, Frederick County. The study found that the construction of this facility would support approximately 48,000 jobs directly and secondary in the county from 2023 through 2038, or about 3,000 jobs per year, $3.1 billion in local labor income, and $25.8 million in county tax revenues. Once fully operational, this facility will support an estimated 6,300 direct and indirect jobs in Frederick County annually, including 1,700 directly on the campus with $65,000 average annual per-worker wages on the campus. Frederick County would receive $41 million in tax revenues annually. We have attached a full copy of this report to our testimony.

This project is a once-in-a-generation chance to revitalize an abandoned industrial site into a modern, environmentally friendly digital campus that powers our regional economy. Additionally, there are similar opportunities for economic revitalization around the State, with similar impacts on jobs and tax revenues. By making the commonsense adjustment to the certificate of public convenience and necessity process achieved by this bill, Maryland is better positioning itself to be at the forefront of digital transformation.

We respectfully urge a **favorable** report.

SB 474_Commerce_Critical Infrastructure Streamlini
Uploaded by: Kevin Anderson
Position: FAV

DATE: February 22, 2024
BILL NO: Senate Bill 474
BILL TITLE: Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)
COMMITTEE: Senate Education, Energy, and the Environment
POSITION: Support

The Maryland Department of Commerce (Commerce) supports Senate Bill 474 - Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024).

Bill Summary:
Senate Bill 474 alters and expands the definition of "generating station" for the purpose of exempting certain generating facilities from the requirement to obtain a certificate of public convenience and necessity or other related approvals.

Background:
This legislation ensures clarity for infrastructure facilities in the State that wish to install backup generators. Facilities not connected to the State's power grid which will be primarily used to produce electricity in the event of a power outage would not be required to obtain a Certificate of Public Convenience and Necessity (CPCN) from the Public Service Commission (PSC). In November 2023 the PSC denied a request to build generators intended as a backup power source for a data center project in Frederick County, resulting in the cancellation of the project. Had these alterations been in effect a CPCN would not have been needed.

Rationale:
Senate Bill 474 will clarify current law as it relates to the approval for backup generators which are necessary for maintaining the operations of certain industries, including data centers. Maryland has made progress in recent years to improve its competitive position in this industry, and this bill is necessary to ensure the State's regulatory climate does not result in the cancelation of additional data center projects. Data centers are large economic drivers for states. According to Sage Policy Group, data centers generate more secondary economic impacts than nearly any other industry. Their study of the total Quantum Frederick project found it would bring an estimated investment of approximately $30 billion over a 15-year period. Once operational the project was estimated to support 1,700 jobs located at the facility, and an additional 8,000 jobs supported directly or indirectly across the State[1]. Maryland needs to be well positioned to attract these high paying jobs and additional economic impacts to the State and Senate Bill 474 will ensure future projects are successful.

[1] https://mdtechcouncil.com/wp-content/uploads/2023/10/Sage-MDTC-Data-Center-Impact-Report.pdf

While the genesis for this legislation may have been largely based on a specific situation involving a planned data center, data centers are not the only businesses or the only industry that will benefit from this change. Healthcare, transportation, and telecommunications are all examples of industries that will benefit from certainty around their ability to obtain backup power sources in the event of a power outage.

Commerce respectfully requests a favorable report on Senate Bill 474.

Support Letter - SB474 - Critical Infrastructure.p
Uploaded by: Kim Mayhew
Position: FAV

Timothy R. Troxell, CEcD
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SUPPORT – Senate Bill 0474
HB 0579 – Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)
Education, Energy, and the Environment Committee
Thursday, February 22, 2024

Potomac Edison, a subsidiary of FirstEnergy Corp., serves approximately 285,000 customers in all or parts of seven Maryland counties (Allegany, Carroll, Frederick, Garrett, Howard, Montgomery, and Washington). FirstEnergy is dedicated to safety, reliability, and operational excellence. Its ten electric distribution companies form one of the nation's largest investor-owned electric systems, serving customers in Ohio, Pennsylvania, New Jersey, New York, West Virginia, and Maryland.

Favorable

Potomac Edison / FirstEnergy supports Senate Bill 0474 – *Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)*. SB-474 alters the definition of "generating station" for the purpose of exempting the construction of emergency backup generators from the requirement to obtain a certificate of public convenience and necessity.

Potomac Edison / FirstEnergy requests a Favorable report on HB 0474 for the following reasons:

The attraction of jobs and investment into Potomac Edison's service territory has always been an important part of our company's mission. When customers find gainful employment, it offers them the ability to purchase things, pay their utility bills, pay their taxes, and help improve their local communities. We believe SB-474 is a pro-economic development piece of legislation that will help in attracting good paying jobs and capital investment into the State of Maryland.

Critical infrastructure, including backup diesel generators, are necessary for large energy intensive projects to be successful. When there are power disturbances or outages on the utility's electrical system, critical industries like hospitals, military installations, datacenters, and manufacturing operations rely on backup power generation to keep their facilities running. In the United States, there are currently no practical alternatives to using backup diesel generators for critical reliability, which is why this legislation is so important.

SB-474 helps distinguish significant differences between private backup diesel generators, which are not connected to the utility grid, and public utility "generating stations", which are. We agree with the bills intent to exempt backup diesel generators from the requirement to obtain a certificate of public convenience and necessity. A set of diesel generators that are not directly connected to the utility's lines, and are only used for backup purposes, should not be considered a "generating station."

Potomac Edison / FirstEnergy strongly supports the Governor's Critical Infrastructure bill, as passage of this legislation will help attract jobs and investment into our service territory. By simplifying the regulatory process, this bill promotes Maryland's regional competitiveness, and ensures that the technology industry can, and will, locate in the state.

For the above reasons, Potomac Edison / FirstEnergy respectfully request a Favorable vote on SB-474.

SB0474_GreaterWashingtonBoardofTrade_FAV.pdf
Uploaded by: Kyle McColgan
Position: FAV

GREATER WASHINGTON
Board of Trade

SB0474– Critical Infrastructure Streamlining Act of 2024
Senate Education, Energy, and the Environment Committee
Position: **Favorable**
Greater Washington Board of Trade
February 21, 2024

Dear Chairman Feldman and Committee Members,

The Greater Washington Board of Trade is a pro-business and non-partisan organization supporting all industry sectors in the District of Columbia, suburban Maryland, and Northern Virginia, having done so for the last 134 years. We support SB0474.

As the region moves forward in increasing efficiencies in energy production and utilization, it is important to maintain an eye on regional viability for industry. That is, necessary improvements to energy infrastructure and efficiency will only be effective if they do not simultaneously drive industry away from Maryland to less restrictive jurisdictions. One low-impact mechanism for mitigating consistency and growing pain risks associated with developing relatively more renewable energy mixes is to allow industry to make use of traditional backup power generation in the event of unforeseen outages.

Fossil fuel backup generators, especially when they are rarely if ever used, offer reassurance that business can continue as normal through brief interruptions to power delivery as the energy infrastructure is continually improved without substantial impact on environmental impact. Diesel generators, by far the most utilized backup generators even offer efficiency ratings commensurate with or better than natural gas energy production, especially when accounting for thermal efficiency losses associated with power delivery.

Maryland should continue to innovate with regard to energy infrastructure, in both delivery and production, but that must not come at the cost of driving away the economic drivers providing state revenue to fund those changes. Simple solutions allowing industry to provide itself insurance against energy interruptions, especially in the case of critical infrastructure like hospital systems and data centers important to the health and security of Marylanders as well as that of the broader region and nation offer dramatic upside at very little cost.

Fundamentally, this legislation stands to improve the business environment in Maryland while allowing for substantially greater leeway in making improvements to the state's energy infrastructure without interrupting the ability of residents to continue doing business. This represents a clear step toward meeting Maryland's environmental goals while sustaining the business environment necessary to fund the remaining steps down that long road. Please support SB0474.

SB0474 (HB0579) - FAV.pdf
Uploaded by: Landon Fahrig
Position: FAV

Maryland Energy Administration

TO: Chair Feldman, Vice Chair Kagan, and Members of the Education, Energy, and the Environment Committee
FROM: MEA
SUBJECT: SB 474 - Critical Infrastructure Streamlining Act of 2024
DATE: February 22, 2024

MEA Position: FAVORABLE

This bill would exempt certain emergency backup power infrastructure from the definition of a generating station. This would remove barriers to the growth of the information technology infrastructure industry in the state.

MEA supports the intent of this legislation. Modern industries require constant access to electrical power. Interruption of energy to critical infrastructure can have significant impacts including putting lives or national security at risk as other critical infrastructure, such as police, fire, hospitals, and military installations, is so heavily reliant upon this modern industry. By defining backup generating stations and exempting them from the certificate of public convenience and necessity, it is more likely that modern industries will continue to look to Maryland to invest, and it will place the state in a more competitive position in comparison to neighboring jurisdictions that have had success in recruiting growth within the technology sector.

MEA would note, and imperatively so, that these backup generating stations will continue to be subject to the Maryland Department of the Environment air permitting process, as well as any local government permitting processes. This supplies the local jurisdictions and individuals most impacted by the installation of modern industry to have meaningful input, and largely within their own jurisdiction.

For these reasons, MEA urges the committee to issue a **favorable report**.

Our sincere thanks for your consideration of this testimony. For questions or additional information, please contact Landon Fahrig, Legislative Liaison, directly (landon.fahrig@maryland.gov, 410.931.1537).

1800 Washington Blvd., Suite 755, Baltimore, MD 21230
(410) 537-4000 | 1-800-72-ENERGY

Dept of the Environment Testimony

Uploaded by: Les Knapp

Position: FAV

The Maryland Department of the Environment
Secretary Serena McIlwain

Senate Bill 474
Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)

Position: Support
Committee: Education, Energy, and the Environment
Date: February 22, 2024
From: Leslie Knapp, Jr.

The Maryland Department of the Environment (MDE) **SUPPORTS** SB 474.

Bill Summary

Senate Bill 474 amends §§ 7-207, 7-207.2, and 7-208 of the Public Utilities Article to exclude "backup" generators larger than two megawatts (MW) from the definition of "generating station." As such, persons constructing these generators would not need to obtain approval or a Certificate of Public Convenience and Necessity ("CPCN") from the Public Service Commission (PSC).

SB 474 would exclude emergency backup generators from the definition of "generating station." These regularly tested units provide on-site emergency backup power when primary electric service is disrupted and they are not connected to the electric grid. The bill also emphasizes MDE's authority to issue a Permit to Construct for projects used for emergency power production. SB 474 removes the PSC from oversight in this regard and authorizes MDE in the determination of construction.

Position Rationale

The bill would remove regulatory barriers to the growth of Maryland's technology infrastructure by streamlining the process for approval of industries that rely on backup power generators in case of power outages. The bill would simplify the process for facilities seeking approval for backup generators and aims to ensure the growth of 21st-century technology industries such as data centers in Maryland, and allows these changes to be done with efficiency, safety, and decarbonization priorities without any loss of environmental protections regarding air quality.

Facilities needing a large number of backup generators that cause federal Clean Air Act emission thresholds to be exceeded would need to meet certain federal pollution requirements regarding the

Contact: Les Knapp, Government Relations Director
Cell: 410-453-2611, Email: les.knapp@maryland.gov

use of stringent low-emitting technology and the securing of emissions offsets. Public review requirements apply for sources that trigger these federal requirements.

Also, some facilities would need the collective package of emergency generators to be covered by an operating permit, once constructed. An operating permit ensures that emission sources, once constructed or installed, operate in compliance. This is done through the imposition of record-keeping, reporting, and monitoring requirements set out in the operating permit.

By streamlining the regulatory process, it provides certainty for companies seeking to invest in Maryland. These generating stations will continue to be subject to existing permitting processes by local governments and MDE, including air permits.

Accordingly, MDE asks for a **FAVORABLE** report for SB 474.

WG Written Testimony - Senate Bill 474 Support.pdf
Uploaded by: Manuel Geraldo
Position: FAV

1000 Maine Avenue, SW| Suite 700 | Washington, DC 20024 | www.washingtongas.com

COMMITTEE: EDUCATION, ENERGY, AND THE ENVIRONMENT

TESTIMONY ON: SB474 – CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AND RELATED APPROVALS – DEFINITION OF GENERATING STATION (CRITICAL INFRASTRUCTURE STREAMLINING ACT OF 2024).

POSITION: SUPPORT

HEARING DATE: FEBRUARY 22, 2024

Washington Gas respectfully submits this statement in **SUPPORT** of **Senate Bill 474 – Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)**.

Washington Gas ("the Company") was founded in 1848 by Congressional Charter and is marking its 175th year of providing affordable, safe, and reliable natural gas service. Washington Gas currently serves more than 500,000 Maryland customers in Montgomery, Prince George's, Charles, St. Mary's, Frederick, and Calvert Counties and over 1.2 million customers across its entire service area. The Company employs over 400 people within Maryland, including contractors, plumbers, union workers, and other skilled tradespeople. The Company strives to improve the quality of life in our communities by maintaining a diverse workforce, working with suppliers that represent and reflect the communities we serve, and giving back through our charitable contributions and employee volunteer activities.

The Company is supportive of the Governor's mission to bring more data centers to Maryland. The data center industry can offer several benefits to the State, including increasing the State's GDP and creating jobs.[1] Senate Bill 474 would streamline the regulatory approval process for critical infrastructure, such as data centers, that require backup generators and make Maryland a more attractive place for those facilities. Data centers require backup generation to ensure 99.999% uptime of operations, and diesel generators are typically used to provide this service. Replacing diesel fuel with hydrogen or natural gas can reduce the amount of greenhouse gases and other harmful materials that are released into the atmosphere when diesel generators are used.[2] [3]

[1] The Data Center Coalition. Economic, Environmental, and Social Impacts of Data Centers in the United States (Sep. 2023)

[2] GenServe. Comparing Diesel vs. Natural Gas Industrial Generators

[3] DOE. Fuel Cells

Additionally, natural gas technologies like combined heat and power (CHP) systems and natural gas fuel cells can provide primary power to data centers more reliably than the electric grid, helping to meet the industry's stringent performance requirements. Less than 1% of all natural gas customers are expected to experience an outage each year.[4] In contrast, a 2020 survey of over 800 data centers using grid-provided power found that 78% experienced at least one outage in the prior three (3) years, with over 50% of data centers incurring costs greater than $100,000 due to power interruptions.[5]

As the data center industry grows in Maryland, Washington Gas looks forward to working with the industry to explore how the Company can provide primary or backup power to help align data center projects with the State's climate goals. Conventional natural gas, renewable natural gas, and other lower carbon fuels, including hydrogen, can present a practical path to support the energy and reliability needs of these facilities.

For the above reasons Washington Gas respectfully requests a favorable vote on Senate Bill 474. Thank you for your consideration of this information.

Contact:
Manny Geraldo, State Government Relations and Public Policy Manager
M 202.924.4511 | manuel.geraldo@washgas.com

[4] AGA. Natural Gas is Reliable
[5] CHP Alliance. Combined Heat and Power Potential in Data Centers

Natural Gas and Lower-Carbon Fuels at Data Centers

Washington Gas

A data center is a facility that houses IT infrastructure used for the storage, processing, and distribution of data.[1] Data centers use a lot of energy, consuming on average ~10x the power of a typical American home per square meter.[2] Maryland is currently home to 24 data centers[3], and as the industry grows, conventional natural gas, renewable natural gas (RNG), and other lower-carbon fuels, including hydrogen, can present a practical and reliable path to accommodate the large energy needs of these facilities.

What are the Benefits of using Natural Gas and Lower-Carbon Fuels at Data Centers?

REDUCES STRAIN ON THE GRID

Data centers place a large strain on the electric grid, and utilities and grid operators are struggling to keep up. Dominion Energy could halt power delivery for new data center developments in Virginia due to insufficient electric grid infrastructure.[4] Energy solutions that leverage molecules like natural gas and hydrogen can help mitigate these issues because they rely on infrastructure that is independent of the electric grid.

DISPLACES DIESEL GENERATORS

Replacing diesel with hydrogen and natural gas for backup power can reduce the amount of greenhouse gases and other harmful materials from being released into the atmosphere.[5,6] The use of RNG offers further emissions benefits and can have a net-negative carbon intensity.[7]

RELIABILITY AND RESILIENCY

Natural gas technologies like combined heat and power (CHP) systems and fuel cells can reliably provide primary power to data centers even when the electric grid is unable to. Less than 1% of all natural gas customers, not just data centers, are expected to experience an outage each year.[8] In contrast, a 2020 survey of over 800 data centers using grid power found that 78% experienced at least one outage in the prior three (3) years, with over 50% of data centers incurring costs greater than $100,000.[9] Additionally, natural gas backup generators and hydrogen fuel cells can provide the uninterruptible power supply needed to ensure 99.999% uptime of operations.

Natural Gas and Lower-Carbon Fuels Deserve Legislative Consideration in Maryland

On 10/10/2023, the Maryland Public Service Commission denied Aligned Data Centers' proposal to install 168 backup diesel generators at the Quantum Frederick data center community in Frederick County.[10] Governor Wes Moore expressed his disappointment with this decision and that he "will work with the legislature to address the [data center] industry's needs and ensure the industry has a bright future in Maryland."[11] Leveraging natural gas and hydrogen solutions to provide primary and backup power to data centers can help to facilitate a resilient future in Maryland.

Washington Gas, a wholly owned subsidiary of AltaGas Ltd, is a regulated natural gas utility that provides safe, reliable natural gas service to more than 1.2 million customers in the District of Columbia, Maryland and Virginia. The company has been providing energy to residential, commercial and industrial customers for more than 174 years.

Economic Benefits the Data Center Industry can bring to Maryland

Increase in State GDP	From 2017-2021, the data center industry added ~$2.1 trillion to the United States Gross Domestic Product (GDP) from direct, indirect, and induced impacts[12], which was ~2% of overall U.S. GDP over that same period.[13] At the state-level, data centers can provide a boost to the economy. In Virginia, data centers, through direct, indirect, and induced impacts, added $13.5 billion to its GDP in 2021.[12]
Job Creation	The data center industry in the United States supported 3.5 million jobs in 2021 and preliminary government data shows that the industry supported 4.2 million jobs in 2022, constituting a 20% increase. This includes direct, indirect, and induced job growth since each direct job in the data center industry supports more than six (6) jobs elsewhere in the US economy.[12]

Use Cases for Natural Gas and Lower-Carbon Fuels at Data Centers

COGENERATION/ TRIGENERATION	**NATURAL GAS FUEL CELLS**	**NATURAL GAS/ RNG BACKUP**	**HYDROGEN FUEL CELL BACKUP**
CHP systems use natural gas to both generate electricity and produce thermal energy and can be over 80% efficient. They can also be paired with chillers to provide cooling.[14]	Natural gas fuel cells convert natural gas into electricity via a chemical reaction with oxygen, not using combustion or any moving parts.[16]	Natural gas generators can be used as a backup power source for when the electric grid experiences an outage.	Hydrogen fuel cells convert hydrogen into electricity via a chemical reaction with oxygen, with the only byproducts being water and heat.[20]
Syracuse University installed a 780kW CHP system to provide power, heating, and cooling to its Green Data Center. The facility houses the campus' main computer data system, as well as critical electrical and mechanical equipment. This installation has helped the university meet their emissions reduction targets.[15]	Amazon selected natural gas fuel cells to provide primary power to three (3) proposed data center sites[17] in Oregon after learning that the local utility could not add capacity in time. This has the potential to reduce smog-forming pollutants by 99%.[18]	Microsoft plans to use natural gas generators to provide back-up power to its San Jose, CA data center. The generators will be fueled by renewable natural gas and are projected to reduce local emissions by up to 96% compared to alternatives like diesel.[19]	In 2022, Microsoft successfully demonstrated that a 3 MW hydrogen fuel cell system could replace their current backup diesel generators at a large data center. After this achievement, Microsoft's director of datacenter research said that "We have a generator that produces no emissions."[21]

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Washington Gas
A WGL Company

SB 474 - Rowan Letter of Support.pdf
Uploaded by: Martin Romo
Position: FAV

Sen. President & Education, Energy, and Environment Committee
Room H-107
100 State Circle
Annapolis, Maryland 21401
RE: Support for SB 474

Dear Sen. President Ferguson, Chair Feldman, and Members of the Committee,

On behalf of Rowan Digital Infrastructure (Rowan), thank you for the opportunity to support SB 474 and provide our perspective on how this legislation could impact the feasibility of our project — and the industry as a whole — in the state of Maryland. As a hyperscale data center developer with an approved project in the state, we feel we have unique insights to offer on the administrative barriers this bipartisan bill seeks to address.

Rowan was established in November 2020 to support hyperscale data center users in meeting their infrastructure development needs sustainably. We are actively developing multiple, strategically located sites across the U.S. to host next-generation, mission critical, hyperscale data centers.

On January 20, 2024, Rowan received unanimous Planning Commission conditional approval for our 777,000 SF data center project in Frederick County, which will bolster statewide economic activity by $125 million each year. This will directly generate $7 million in annual tax revenues for Frederick County and an additional $14 million for the State of Maryland.[1] But none of these community benefits for Marylanders will come to fruition — from our project or any future project from other developers — if this critical infrastructure does not have reliable power in the event of an emergency.

As critical infrastructure, data centers are necessary to the safety and wellbeing of families, businesses, schools, and communities across Maryland — just like hospitals, research centers, airports and government facilities. Rowan is committed to developing these vital facilities in a sustainable manner. We will be using low-carbon concrete and steel in our buildings, have set a goal to recycle at least 70% of non-hazardous construction material waste, will be employing an on-site Environmental Compliance Specialist during construction, and will only partner with hyperscale data center operators that aim to support their facilities with 100% renewable energy. But that is not doable without full assurance that these facilities will maintain power at all times.

The use of emergency backup generation is extremely rare; however, planning for these worst-case scenarios is necessary to ensure that these critical infrastructure facilities will remain online 24 hours a day, 7 days a week. Since 2018, FirstEnergy, which will serve our project in Frederick County, has only experienced one momentary outage on transmission lines that serve the site. Even during such outage scenarios, their ability to run is limited subject to permits issued by the Maryland Department of the Environment. SB 474 will provide a higher degree of regulatory certainty for digital infrastructure developers, such as Rowan, that want to locate and bring billions of dollars of investment to Maryland.

[1] Maryland Tech Council (Jan 2024), https://mdtechcouncil.com/wp-content/uploads/2024/01/Rowan-Frederick-Economic-Impact-Study.pdf

We appreciate Gov. Moore's leadership in bringing a diverse coalition of stakeholders throughout various industries and political parties to make progress on this important issue. We encourage this committee to join us in support of SB 474 and look forward to working with you to set a high standard for sustainable digital infrastructure in Maryland.

Sincerely,

Martin Romo

Martin Romo
Senior Director of Economic Development & Policy
Rowan Digital Infrastructure
mromo@rowan.digital

SB 474_MDCC_Critical Infrastructure Streamlining A
Uploaded by: Mary Kane
Position: FAV

MARYLAND
Chamber of Commerce

LEGISLATIVE POSITION:
FAVORABLE
Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)
Senate Bill 474
Senate Education, Energy, and the Environment Committee
Thursday, February 22, 2024

Dear Chairman Feldman and Members of the Committee:

Founded in 1968, the Maryland Chamber of Commerce (Maryland Chamber) is the leading voice for business in Maryland. We are a statewide coalition of more than 6,800 members and federated partners working to develop and promote strong public policy that ensures sustained economic recovery and growth for Maryland businesses, employees, and families.

Senate Bill 474 would exempt backup generators from the definition of "generating station" within the Certificate of Public Convenience and Necessity (CPCN) process in Maryland. This bill represents a crucial step towards removing barriers to the growth of Maryland's technology sector, and we believe it will have far-reaching positive impacts on our economy and resilience.

The legislation streamlines the regulatory process for industries reliant on backup power generators, particularly in critical sectors such as data centers and hospitals. It will foster growth of 21st-century technology industries in Maryland. SB 474 will ensure Maryland remains competitive in the rapidly evolving global economy. It is clear that the CPCN process will be kept in place for what it is intended to do, which is to permit electrical power generation facilities, like power plants, and high-voltage transmission lines. It is also evident that emergency backup generation used for emergency power generation should not be subject to the same process for powerplants. Moreover, the bill ensures that essential regulatory processes by local governments and the Maryland Department of the Environment, including air permits, remain intact.

More recently, Baltimore was named a federal tech hub as part of a highly competitive federal program, making the City eligible for hundreds of millions of dollars in funding. We urge the committee to build upon the momentum by passing SB 474.

Many critical processes in hospitals, data centers and other industries rely on continuous power supply, including communication systems, security systems, temperature control, and more. **It is important to note that backup generators are only used in emergency situations, such as a power outage. This allows critical industries and businesses to ensure continuous operations.** By having a dependable power source during emergencies, businesses can safeguard lives, protect valuable assets and data, and ensure the continuity of essential services. SB 474 will

provide certainty for companies seeking to invest in Maryland, and also create opportunities for job growth, attract private investment, and foster an environment conductive to innovation.

For these reasons, the Maryland Chamber of Commerce respectfully requests a **favorable report** on **SB 474**.

Support_SB 474 Certificate of Public Convenience a
Uploaded by: Matthew Teffeau
Position: FAV

Choptank Electric Cooperative
A Touchstone Energy® Cooperative

P.O. BOX 430, Denton, MD 21629
Toll-Free: 1-877-892-0001
Z_info@choptankelectric.coop
www.choptankelectric.coop

February 22, 2024

The Honorable Brian Feldman
2 West Miller Senate Office Building
Annapolis, MD 21401

Re: ***Support- SB 474 Certificate of Public Convenience and Necessity and Related Approvals- Definition of Generations Station***
(Critical Infrastructure Streamlining Act of 2024)

Dear Chairman Feldman:

Founded in 1938, Choptank Electric Cooperative is a not-for-profit organization that exists to provide reliable and cost-effective electricity. This service improves the quality of life for our 56,142 member-owners.

As a cooperative, Choptank Electric maintains a deep commitment to the communities it serves, which covers about two-thirds of Maryland's Eastern Shore. Economic development, especially in our rural areas, is necessary in providing additional resources to our schools and communities, and in improving the livelihood of all residents. Choptank Fiber, LLC is a wholly owned broadband subsidiary of Choptank Electric Cooperative. Choptank Fiber's goal is to install true Gigabit broadband with no data caps one community at a time until we serve all our underserved members on the Eastern Shore.

SB 474 seeks to bring economic vitality and clarity to the current CPCN approval process for back-up generation, which is needed for data centers. This bill would level the playing field and attract data center business to Maryland and support the state as a leader in innovation and investment in cyber and information technology.

Choptank Electric Cooperative and its member-owners ask you to support **SB 474.**

Sincerely,

Matt Teffeau
Manager of Government Affairs and Economic Development
Choptank Electric Cooperative

SB 474 – Certificate of Public Convenience and Nec

Uploaded by: Pegeen Towsend

Position: FAV

Maryland
Hospital Association

Senate Bill 474 – Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Stations
(Critical Infrastructure Streamlining Act of 2024)

Position: *Support*
February 22, 2024
Senate Education, Energy and the Environment Committee

MHA Position

On behalf of the Maryland Hospital Association's (MHA) member hospitals and health systems, we appreciate the opportunity to comment in support of Senate Bill 474. This bill will streamline the regulatory approval process for backup generators.

Power outages impact many operational aspects of hospitals' care delivery including life support equipment, medical supply and vaccine refrigeration, medical equipment, surgical equipment, facility power, occupational safety, electronic medical records, and security systems.

As a result, hospital backup power systems are heavily regulated to ensure facilities are adequately prepared. Under federal regulation, backup power supplies must activate in less than 10 seconds and have enough fuel to run for 96 hours. Safety and maintenance codes are in place to ensure generator units have qualified personnel to perform maintenance and repairs, weekly inspections, and monthly testing.

Given the additional regulatory requirements governing hospital generators, a more streamlined regulatory process for hospital backup generators is both a reasonable and responsible approach.

For these reasons, we request a ***favorable*** report on SB 474.

For more information, please contact:
Pegeen Townsend, Consultant
Ptownsend@mhaonline.org

QLs Letter of Support - Chairman Brian J. Feldman.
Uploaded by: Rachel Clark
Position: FAV

Chairman Brian J. Feldman
Senate Education, Energy and the Environment Committee
2 West, Miller Senate Office Building
Annapolis, Maryland 21401

Dear Chairman Brian J. Feldman,

I am writing to express Quantum Loophole's support for SB 474, proposed by Governor Wes Moore, which seeks to differentiate the approval process of proposed private backup generators from the process for public utility generating stations in Maryland.

Quantum Loophole is a developer of the first master planned data center community, offering land, power, fiber, and recycled cooling water solutions. The company's first project is a 2,100+ acre, industrially-zoned site located in Frederick, Maryland.

As a developer specializing in master-planned data center communities, Quantum Loophole understands the role that backup generators play in ensuring uninterrupted operations for data centers. Data centers are critical facilities used to house computer systems that store, process and distribute mass amounts of internet data. These facilities are vital for various industries that already exist in Maryland, including healthcare, hospitality, manufacturing, and education, all of which already rely on robust backup power systems to safeguard against disruptions.

The proposed legislation not only acknowledges the crucial importance of backup generators but also offers essential clarity and guidance regarding their use and regulation. By delineating distinct regulatory frameworks for private backup generators versus public utility generating stations, this bill will facilitate clearer compliance standards and promote the safe and efficient operation of private backup power systems within our communities.

This legislation has the potential to foster continued growth and innovation within Maryland's data center industry. By providing a legislative framework that supports the reliable operation of backup generators, this bill will enhance the attractiveness of Maryland as a destination for not only data center investment, but for other incoming industries as well, and ultimately driving economic development and job creation across the state.

Quantum Loophole is confident that the passage of this bill will have a positive and lasting impact on Maryland's economy and growth.

Sincerely,

Rich Paul-Hus
Co-Founder and SVP
Quantum Loophole

0437_001.pdf
Uploaded by: Richard Weldon
Position: FAV

FREDERICK COUNTY
CHAMBER OF COMMERCE

February 20, 2024

Maryland State Senate
The Honorable Brain Feldman, Chair
Senate Education, Energy & Environment Committee
Miller Senate Office Building
Annapolis, MD

Dear Chairman Feldman and Members,

I am writing on behalf of the Frederick County Chamber of Commerce, our 26-member Board of Directors, and the over 940 public, private and nonprofit organizations that make up the membership of the Chamber to enthusiastically support SB 579, Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024).

After a careful review of the Moore Administration's draft bill, consideration of the Maryland Public Service Commission's record of decision on the Aligned Data Center application, and the resultant confusion over the PSC's ultimate decision, it is plainly evident that the decision regarding the provision of emergency power generation for critical infrastructure facilities should NOT be subject to the same regulatory regime put in place to permit electrical power generation facilities.

Governor Moore and his team have identified, and the PSC has confirmed, that a clearer regulatory regime for emergency/backup power generation for critical infrastructure is necessary.

This bill provides for that and will make an important distinction between these backup systems and primary power generation facilities. We urge you to adopt a FAVORABLE position on this bill and bring this before the full House for adoption.

Respectfully submitted,

Richard B. Weldon, Jr.
President/CEO
Frederick County Chamber of Commerce

118 N. Market Street, Suite 200, Frederick, MD 21701
frederickchamber.org / 301.662.4164 /

Final Testimony for SB474 - Critical Infrastructur

Uploaded by: Saif Ratul

Position: FAV

STATE OF MARYLAND

OFFICE OF THE GOVERNOR
Wes Moore

February 22, 2024

The Honorable Brian Feldman
Chair, Education, Energy, and the Environment Committee
2 West Miller Senate Office Building
Annapolis MD 21401

RE: Letter of Support – SB0474 – Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)

Chair Feldman, Vice Chair Kagan, and Distinguished Members of the Education, Energy, and the Environment Committee,

On behalf of Governor Moore and Lieutenant Governor Miller, I respectfully ask the Committee for a favorable report on SB0474 – Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024).

The first year of the Moore-Miller administration has been a success story in both economic and environmental aspects. We experienced the creation of 40,000 new jobs and the lowest unemployment rate in the nation, made significant investments in renewable energy, including offshore wind, and incentivized electric vehicle infrastructure across the state.

However, over the past decade, Maryland's economic growth has underperformed the region and the country, affecting the lives and livelihoods of those who call this great state home. The regulatory process in Maryland that creates unpredictability has been a source of frustration for industries and businesses as they looked to invest. This further diminishes Maryland's ability to attract new industries, invest in crucial educational and environmental programs, and serve as a regional leader. In order to win the decade and support our environmental investments to lower greenhouse gas emissions, we must commit to making Maryland more economically competitive.

It is essential that Maryland find the right balance between our need for strong environmental and labor standards and our need to grow the economy. Regulatory processes need to exist to

create safeguards; however, creating redundant regulatory barriers to stifle business growth in Maryland without any debate in the legislature, as we have seen at the Public Service Commission (PSC) last fall through their decision on emergency backup generators, created uncertainty that prevents businesses from investing in the state.

This bill is intended to right that decision and restore the appropriate balance between these two important goals. First, the bill defines emergency backup generating stations that are - a) used exclusively for onsite emergency backup purposes in the event of a power outage, b) test and maintenance operations to ensure functionality, c) installed with equipment that prevents the flow of electricity to the electric grid, and d) subject to MDE's permitting process.

Second, the bill provides a statutory exemption from the Certificate of Public Convenience (CPCN) for any combination of 2 or more generating units used exclusively for onsite emergency backup purposes in the event of a power outage.

This bill does not propose any significant deviation from the state's current practice. Emergency backup generators needed for these energy-intensity facilities require complex licensing and permitting processes, including the Maryland Department of Environment's (MDE) air quality permit to construct, in addition to air pollution sources and emissions review and additional permits that are deliberately placed to protect the community and the environment.

The Critical Infrastructure Streamlining Act aims to remove the uncertainty barriers to the growth of Maryland's technology infrastructure while bolstering the state's economic competitiveness. This will attract new technology industries, create good-paying jobs, invest in local communities, and generate millions of dollars in local and state revenue. For these reasons, I respectfully ask the committee for a favorable report on Senate Bill 474.

Sincerely,

Saif Ratul
Deputy Legislative Officer

SB 474 MCIES LOS .pdf
Uploaded by: Sarah Peters
Position: FAV

Bill: SB 474/HB 579- Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)

Position: SUPPORT

Dear Chair, Vice Chair, and Members of the Committee:

On behalf of the Maryland Coalition for Inclusive Energy Solutions (MCIES), a trade association promoting the inclusivity of all energy sources to meet the state's energy needs, I am writing to support SB 474/HB 579.

This proposed bill aims to redefine the term "generating station" to provide certain exemptions for generating facilities used for onsite emergency backup and test and maintenance operations. These exemptions would apply under specific circumstances, including the installation of equipment preventing the flow of electricity to the electric grid and compliance with a permit to construct issued by the Department of the Environment.

The bill acknowledges the critical role that generating facilities, such as technologies relying on natural gas or diesel, currently play in ensuring the reliability of electricity supply during emergencies, such as natural disasters or grid failures. This 24/7 reliability is critical for facilities such as data centers and military uses. By exempting true backup generation from the requirement to obtain a certificate of public convenience and necessity, House Bill 579 will streamline the regulatory process, reduce unnecessary bureaucratic hurdles, and ultimately promote the resilience and preparedness of our state's critical infrastructure, while promoting economic development in Maryland.

Sincerely,

George Anas
President

240221_SB474_Certificate of Public Convenience and
Uploaded by: Sarah Roth
Position: FAV

DAVID TRONE
6TH DISTRICT, MARYLAND

APPROPRIATIONS COMMITTEE

BUDGET COMMITTEE

JOINT ECONOMIC COMMITTEE

UNITED STATES
HOUSE OF REPRESENTATIVES

2404 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-2721

30 W. PATRICK STREET, SUITE 505
FREDERICK, MD 21701
(301) 926-0300

TRONE.HOUSE.GOV
@REPDAVIDTRONE

February 21, 2024

The Honorable Brian J. Feldman
Chair, Education, Energy, and the Environment Committee
2 West, Miller Senate Office Building
Annapolis, Maryland 21401

The Honorable Cheryl C. Kagan
Vice Chair, Education, Energy, and the Environment Committee
2 West, Miller Senate Office Building
Annapolis, Maryland 21401

Dear Chair Feldman and Vice Chair Kagan,

I would like to express my full support for *Senate Bill 474 - Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024).*

The data center industry has been looking to Frederick, Maryland as their next area of expansion. This type of investment is poised to generate tens of millions of dollars of tax revenue to government coffers annually. In my Congressional District, Frederick County will benefit greatly from the increase of revenue - it is currently facing a 12% increase in the student population, which has led to an over $830 million gap for school construction. Data centers will also create thousands of good-paying jobs in the area, specifically for constituents who work in the building trades.

I have fought hard in Congress to supply federal funding to build out the much-needed digital highway in the State of Maryland and across the country. Governor Wes Moore has also seen this need and has called for "Maryland to be the headquarters of the 21st century." The General Assembly has worked in tandem with the Governor and has passed several data center-specific pieces of legislation over the past couple of years. From top to bottom, Maryland has signaled to the data center industry that we are looking for their investment and are open for business.

The Critical Infrastructure Streamlining Act of 2024 is another piece of legislation that will continue to signal to the data center industry that Maryland is the best place to invest. HB579 will clarify the historic practice followed for years by the Maryland Public Service Commission regarding exemptions from the Certificate of Public Convenience and Necessity (CPCN) process for backup generators installed by electricity customers.

Specifically, this bill provides an exemption from the CPCN process for any combination of two or more electricity generating units used exclusively for on-site emergency backup purposes in the event of a power outage (including required testing and maintenance). With this clarification, the CPCN

process will remain appropriate for the siting of merchant power plants and high-voltage electric transmission lines, while excluding entities it was never intended to be applied to, such as hospitals, pharmaceutical companies, college campuses, federal facilities, military installations, casinos, or data centers.

It is important to note that the Critical Infrastructure Streamlining Act of 2024 does just that - it streamlines the process for critical infrastructure. This legislation will not weaken the power of the Maryland Department of Environment to regulate and permit backup generators based on emission levels appropriate for the fuel source used in the back-up generators. Additionally, the Governor's bill does not change or weaken local zoning or permitting authority over any electricity customer who requires backup generators.

I strongly urge this committee to give *Senate Bill 474 - Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)* the highest consideration.

Sincerely,

David Trone
Member of Congress

SB 474 Support 2024.pdf
Uploaded by: Tom Clark
Position: FAV

International Brotherhood of Electrical Workers
JOSEPH F. DABBS: Business Manager • THOMAS C. MYERS: President • RICHARD D. WILKINSON: Vice President
CHRISTOPHER M. CASH: Financial Secretary • RICHARD G. MURPHY: Recording Secretary • PAULO C. HENRIQUES: Treasurer

TESTIMONY IN SUPPORT OF SB 474
CERTIFICATE OF PUBLIC CONVIENCE-DEFINITION OF GENERATING STATION (CRITICAL INFRASTRUCTURE STREAMLINING ACT OF 2024)
February 22, 2024

TO: Chair Feldman, Vice Chair Kagan and members of Education, Energy & Environment
FROM: Tom Clark, Political Director, International Brotherhood of Electrical Workers Local 26

Mr. Chair, Madam Vice Chair, and members of the Committee, I ask that you join me in **support** of **SB 474**, a bill that works for Maryland and puts Marylanders to work. This piece of legislation attracts businesses to our state, businesses of the future like health sciences and cybersecurity.

Our state is a central point for so many areas of technology. I 270 is known as the "Technology Corridor" or "Life Sciences Corridor". Being so close to the Nation's Capitol, the Freestate is a hub for Defense Contractors and Cyber Security companies. Of course, "as the crow flies", we are just a few miles from Northern Virginia, which services two thirds of the world's internet traffic. The beauty of **SB 474** is that it streamlines the process of attracting these businesses, while protecting Maryland's land, air, and people.

The Critical Infrastructure Streamlining Act of 2024, entices the Business community to operate in Maryland. The previous administration used the slogan, "Maryland is open for Business". A nice slogan, but no actions were taken. This piece of legislation makes things happen, like enticing Cybersecurity companies to relocate here. It attracts the mega companies like Amazon and Google, it increases our foothold on the Science Technology market, and most importantly it puts our citizens to work. With the market for building office space at an all time low, Marylanders need to start building for the Cyber future. **SB 474** delivers that future, while safeguarding the Bay, its rivers, streams and the air we breathe. It streamlines the process of allowing businesses to grow, yet all Local permitting still applies.

I applaud the drafters of this bill, for looking out for Maryland jobs. As you know, our state has the lowest unemployment rate of any state. If this Bill is passed into law, it will aid in giving Maryland the title of "Best state for working families". So please join me in full **support** of **SB 474.** Thank you!

4371 Parliament Place, Lanham, MD 20706 • Office 301-459-2900 • Fax 301-459-2100
www.ibewlocal26.org

SB474 Greg Akerman BDCBT (SUPPORT).pdf
Uploaded by: Victoria Leonard
Position: FAV

Electrical Workers
Insulators
Boilermakers
United Association
Plumbers & Gas Fitters
Sprinkler Fitters
Steam Fitters
Roofers
Cement Masons
Teamsters
Laborers
Bricklayers
Ironworkers
Sheet Metal Workers
Elevator Constructors
Painters
Operating Engineers
Carpenters

February 22, 2024

The Honorable Brian Feldman, Chair
The Honorable Cheryl Kagan, Vice Chair
Senate Education, Energy and the Environment Committee
Miller Senate Office Building – 2 West
Annapolis, Maryland 21401

SB 474: Critical Infrastructure Streamlining Act
Position - Support

Thank you Chair Feldman, Vice Chair Kagan, and members of the House Economic Matters Committee for the opportunity to submit written testimony in support of SB 474.

The BDCBT represents 28 construction trade unions across Maryland, Northern Virginia, and the District of Columbia. Combined, our trade unions represent more than 30,000 skilled craft professionals in the construction industry.

BDCBT supports SB 474. This bill would remove barriers to Maryland's technology infrastructure growth by streamlining the regulatory process for approval of industries that rely on backup power generators. Major 21st-century infrastructures such as data centers rely on backup power generation in case of power outages—and current Maryland law makes it difficult to get prompt approval for generators. By simplifying the regulatory process, this bill will help ensure that the growing Mid-Atlantic technology industry, including data centers, is located in Maryland and promoting Maryland's regional competitiveness.

We urge the committee to issue a favorable report on SB 474.

Sincerely,
Greg Akerman

Critical Infrastructure Streamlining Act SB474.pdf
Uploaded by: Walter Donoughe
Position: FAV

MEC
MARYLAND
ECONOMIC
COUNCIL

Testimony in Favor of The Critical Infrastructure Streamlining Act (SB474)
Before the Senate Education, Energy, and Environment Committee
On behalf of the Maryland Economic Council
February 22, 2024

Chair Feldman, Vice Chair Kagan, and Members of the Committee, we testify today in support of **SB 474,** which places Maryland on a level playing field in its effort to attract data center development to the state.

Governor Moore established The Maryland Economic Council (MEC) last year to provide analysis and recommendations for implementing economic policies that achieve growth, diversify our workforce, and merge our state's assets and growing industries. Our mission includes identifying and tracking underlying economic factors that impact Maryland's business climate, including identifying high-growth business sectors; and evaluating Maryland's regulatory environment and economic policies compared to competing states.

The data center sector is a key driver of the US economy. According to the latest PwC Report[1], between 2017 and 2021, data centers added $2.1 trillion to the U.S. Gross Domestic Product (GDP), created between 2.9 and 3.5 million annual jobs, and generated between $209 and $294 billion in annual labor income. Each direct job in the data center industry supports more than six jobs elsewhere in the US economy. In 2021, in Virginia alone, the data center industry created more than 86 thousand jobs[2] and generated $13.5 billion in GDP. To put that into perspective, Maryland's total GDP was around $519 billion in 2023.

The MEC expects the data center industry to continue growing at a significant pace. Increasing demand for video content and new AI[3] technology will increase the need for data center capacity and, in turn, the need to build more data centers. In some regards, Maryland is well-positioned to take advantage of this growth. We have a highly-skilled workforce and as a result of the work of the State Legislature, Maryland's tax structure should no longer hinder data center development. With that, there are still regulatory hurdles we need to overcome.

The goal of this legislation is to do that. By correctly defining "generating station" to exclude facilities designed solely to produce electricity for emergency backup, this legislation will place Maryland on par with our competing states and remove an unnecessary burden that has blocked companies from investing in our state and hiring our citizens.

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[1] https://www.centerofyourdigitalworld.org/impact-study/#07
[2] PwC calculations using the IMPLAN modeling system and public data sources.
[3] www.forbes.com/sites/forbestechcouncil/2023/12/29/top-data-center-predictions-for-2024/

Data centers are critical infrastructure, particularly during times of natural disaster. Therefore, it would be dangerous for them to stop working every time the power goes out. To address this, they maintain a backup energy source on-site.

This bill would establish a more appropriate regulatory process for approving backup generators, one that focuses on their limited and intermittent use. By passing this bill, Maryland can continue to be a good steward of the environment without placing businesses at an unnecessary competitive disadvantage. For these reasons, we respectfully urge a favorable report on this measure.

ABB-1VPD110001A0635 Datasheet eStorage Max v6.pdf

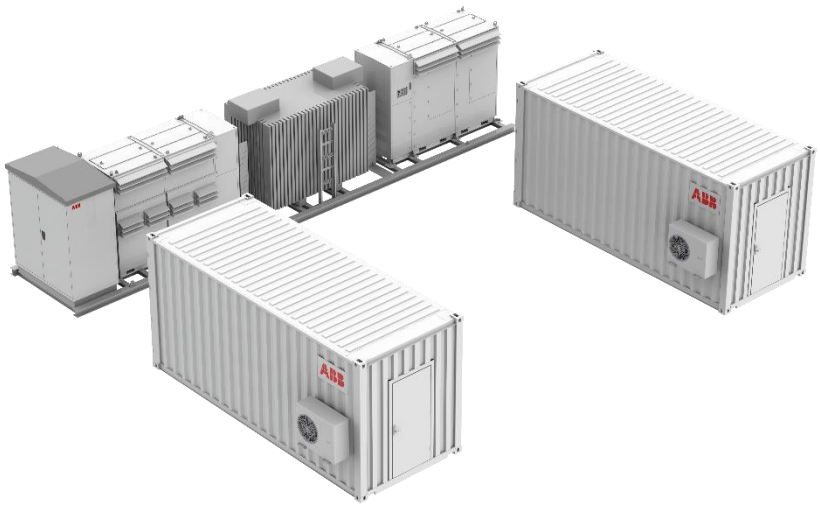
Uploaded by: Elizabeth Law
Position: FWA

TECHNICAL DATA SHEET

ABB eStorage Max

Scalable Energy Storage System

The state-of-the-art ABB eStorage Max is a scalable energy storage system based on pre-engineered building blocks. The eStorage Max is designed to maximize the return of investment with an industrialized solution that reduces installation time, complexity and transportation costs. The solution is optimized for functionality featuring digital intelligence that improves solution performance and operating costs.



eStorage Max - STPP
example outside view

Pre-engineered building blocks
Provides predesigned skids for electrification equipment and e-houses for all the required batteries, safety features, cooling, and protection and controls.

Factory tested
Factory built solution integrates comprehensive safety features that bring extensive quality control for the highest level of safety.

Complete solution
Designed with careful equipment selection and executed under full responsibility from ABB – including eHouses and project management beyond the eStorage Max.

Applications

- **Grid support:** compensating grid fluctuations in voltage and frequency by regulating reactive and active power.
- **Spinning reserve:** providing milliseconds response to maintain network continuity under outages while back-up generators are brought online to provide reliability.
- **Intermittent power generation:** using more of the power generated with distributed energy resources.
- **Islanding:** supporting microgrids and loads during power outages with seamless transition and black start capabilities.
- **Time of use:** using the storage system based on the electricity cost (charge when low, discharge when high).
- **Peak shaving:** reducing energy and powertariffs by capping the consumption peaks.
- **Stacking applications:** combining several applications with dedicated priorities.

*The graphics shown might differ from the actual structure

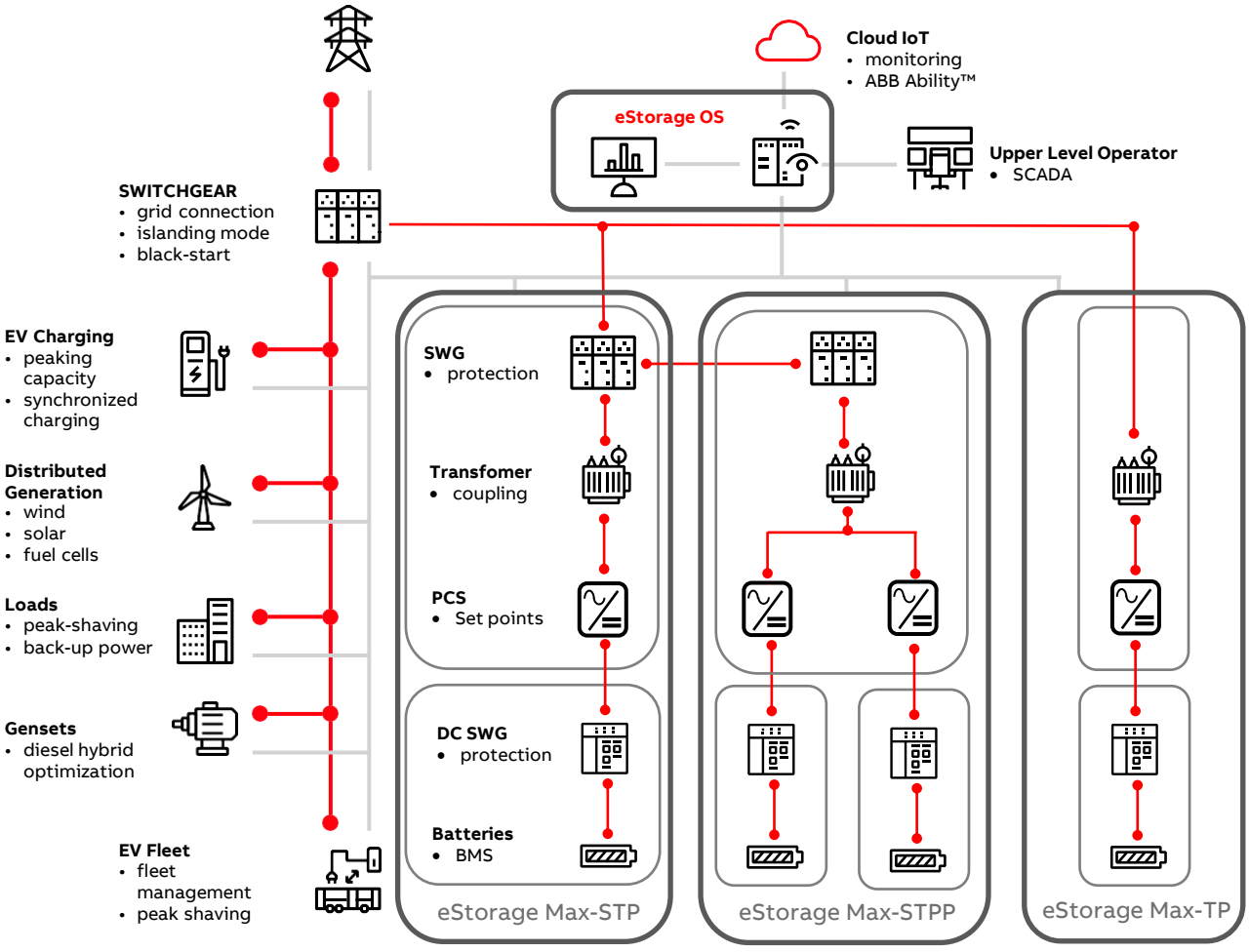
Complete Solution Equipment (STPP)

1. Switchgear (AC)
2. Transformer
3. Power conversion system (PCS)
4. Integrated battery eHouse

System Architecture

The eStorage Max can be provided in multiple, scalable configurations. All configurations are optimized to ensure customer and site requirements are met. The architecture will always include a transformer, power conversion system, battery storage and eStorage OS. Additional configuration options include switchgear (AC) and additional power conversion systems.

The eStorage OS is a fully integrated digital operating system for the eStorage Max that provides asset management, monitoring, control, protection and communication with the upper-level operator. Remote control, monitoring and embedded energy management functions for different applications are available as predefined options. The eStorage OS can also provide microgrid control and black start capability.



Technical data

Description	eStorage Max-TP	eStorage Max-TPP	eStorage Max-STP	eStorage Max-STPP
Electrical specifications				
Maximum Outputpower (S) [1]	6000kVA (4x1500kVA)	4600kVA (2x2300kVA)	6000kVA (4x1500kVA)	4600kVA (2x2300kVA)
Typical Outputpower (P) [1, 2]	<5200kW	<4200kW	<5200kW	<4200kW
Typical Installed Energy	<5500 kWh	<5500 kWh	<5500 kWh	<5500 kWh
Max C-rate	<1C	<1C	<1C	<0.5C
Nominal voltage (kV)	12, 24, 36, 40.5	12, 24, 36, 40.5	12, 24, 36, 40.5	12, 24, 36, 40.5
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Power factor range	4-quadrant, 0 to 1	4-quadrant, 0 to 1	4-quadrant, 0 to 1	4-quadrant, 0 to 1
Connection method	3-phase	3-phase	3-phase	3-phase
Equipment				
Battery Enclosure	ABB EcoFlex	ABB EcoFlex	ABB EcoFlex	ABB EcoFlex
Battery chemistry	NMC, LFP	NMC, LFP	NMC, LFP	NMC, LFP
Grid connection equipment[3]	ABB Skid	ABB Skid	ABB Skid	ABB Skid
Power conversion system operation modes	PQ, VSI, Vf, CSI, grid forming, blackstart	PQ, VSI, Vf, CSI, grid forming, blackstart	PQ, VSI, Vf, CSI, grid forming, blackstart	PQ, VSI, Vf, CSI, grid forming, blackstart
Transformer type	Oil-filled, dry-type	Oil-filled, dry-type	Oil-filled, dry-type	Oil-filled, dry-type
AC switchgear	N/A	N/A	ABB SafeRing/SafePlus	ABB SafeRing/SafePlus
Environmental conditions				
Ambient temp. range (nom. ratings)	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Relative humidity	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
IP degree battery compartment	IP54	IP54	IP54	IP54
General specifications				
Overall dimensions -	6000x2100x2775mm	6000x2100x2775mm	6800x2100x2775mm	12000x2300x2775mm
ABB Skid (LxWxH)				
Overall dimensions - ABB	12000x2450x2900mm	12000x2450x2900mm	12000x2450x2900mm	12000x2450x2900mm
EcoFlex (LxWxH)	(ISO 40ft)	(ISO 40ft)	(ISO 40ft)	(ISO 40ft)
Product compliances				
Power Conversion System	UL1741, IEEE1547, EN 50549-2, AS4777.2, VDE-AR 4110/4120/4130	UL1741, IEEE1547, EN 50549-2, AS4777.2, VDE-AR 4110/4120/4130	UL1741, IEEE1547, EN 50549-2, AS4777.2, VDE-AR 4110/4120/4130	UL1741, IEEE1547, EN 50549-2, AS4777.2, VDE-AR 4110/4120/4130
Batteries	IEC 62619, UL1973, UN 38.3, UL9540A	IEC 62619, UL1973, UN 38.3, UL9540A	IEC 62619, UL1973, UN 38.3, UL9540A	IEC 62619, UL1973, UN 38.3, UL9540A
Transformer	IEC 60076	IEC 60076	IEC 60076	IEC 60076
Medium-voltage distribution	IEC 62271-200	IEC 62271-200	IEC 62271-200	IEC 62271-200
Fieldbus connectivity (predefined option)	Modbus, Ethernet for remote control and monitoring	Modbus, Ethernet for remote control and monitoring	Modbus, Ethernet for remote control and monitoring	Modbus, Ethernet for remote control and monitoring
Local user interface	ABB local control panel and embedded ABB Energy Management System	ABB local control panel and embedded ABB Energy Management System	ABB local control panel and embedded ABB Energy Management System	ABB local control panel and embedded ABB Energy Management System
Remote connectivity	Advanced SCADA and cloud connection, IEC62443	Advanced SCADA and cloud connection, IEC6443	Advanced SCADA and cloud connection, IEC62443	Advanced SCADA and cloud connection, IEC62443

[1] Derating applies above 1000m
[2] Power factor and performances considered

—

ABB Ltd.

abb.com/mediumvoltage

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1VPD110001A0635 Rev B AUG 2023

EL_GBL_2022_09_Data_Center_Sustainability_whitepap

Uploaded by: Elizabeth Law

Position: FWA

WHITE PAPER

Sustainability – making your data center carbon neutral

Table of contents

Five critical steps to achieving data center sustainability

Accelerate your journey towards a net zero future

TAKING ACTION FOR A GREENER DATA CENTER ECOSYSTEM

The data center market is no stranger to energy efficiency strategies and in recent years has led by example in the mission critical arena for its commitment to carbon neutrality and achieving a net zero data center ecosystem by 2030. Even in the face of rapid digital acceleration, where the demand for data is driving unprecedented growth, the data center market is working towards delivering its commitments to purchase 100% carbon-free energy, reuse and repair services, prioritize water conversation, recycle heat and prove energy efficiency by meeting measurable targets.

A recent study confirmed that while data centers' computing output jumped six-fold from 2010 to 2018, energy consumption rose by only six percent during the same period.[1] These are impressive achievements that have laid the foundations for further development towards total sustainability.

THE DATA CENTER MARKET MUST REMAIN ON TRACK TO DELIVER THE 'GREEN EVOLUTION' MASTERPLAN

The global demand for data is set to follow a steep trajectory in the coming years, reaching an estimated 181 zettabytes in 2025[2]. There are a number of macro drivers responsible for this growth:

A sharp increase in connected devices and the proliferation of technology which is projected to rise from 13.8 billion in 2021 to 30.9 billion units by 2025[3]

The sudden onset of working from home that generated an immediate 40 percent increase in traffic[4]

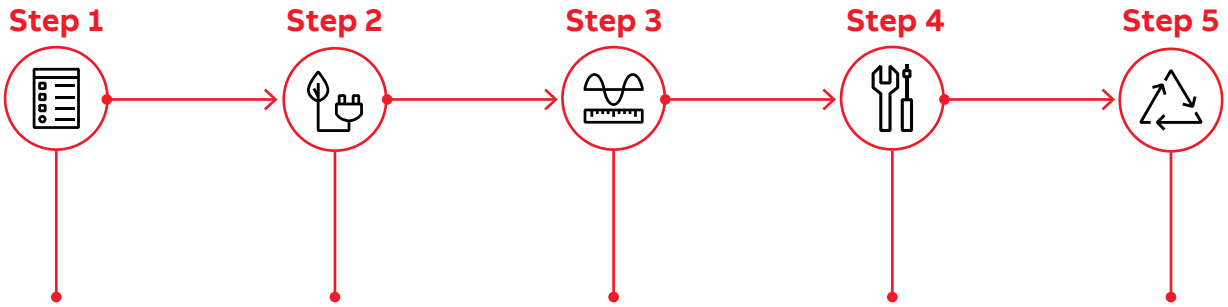
The rise of a data-driven economy in which 95 percent of businesses cite the need to manage unstructured data as a problem for their business and impacts how they navigate the market, make future predications and adjust to market trends[5]

Data centers have embraced sustainability both in design and in operation, making them a force for positive change - but there remains much work to be done. Now, more than ever before, customers are seeking out data center providers with a proven record of green credentials, and governments all over the world are moving at pace towards carbon reduction goals and net zero targets.

To maintain its position as a front runner in the sustainability evolution, the data center market must continue to embrace the advances that are happening in the areas of Artificial Intelligence (AI), remote management, state-of-the-art data center design and energy management systems. Sustainability was once the concern of hyperscalers only, but now, colocation data centers of all sizes, in all geographical regions, are planning and executing sustainability pathways that will promote an altogether more carbon efficient ecosystem.

There is a growing requirement among colocation users to store data in a conscious, net zero or sustainable way, which means selecting a data center provider that offers fully documented sustainability credentials. For colocation providers looking to monopolize on this growing demand, accelerating your sustainability pathway is critical to becoming a front runner in a market that will soon see sustainability as a prerequisite, not an added benefit.

In support of these efforts, the data center experts at ABB have created this whitepaper, that explores five key steps to achieving data center sustainability, with each step containing a wealth of advice and suggestions, including the latest technologies on the market:



Evaluation
You cannot manage what you cannot measure

Energy
Working with your local authority to purchase or integrate sustainable energy sources

Design
Minimizing energy usage and operating at peak efficiency

Maintenance
Upholding your newly implemented efficiency

Recycling
Recycling – end-of-life considerations and asset disposal

FOCUS: Specific drivers fueling the growth of data

The Internet of Things (IoT)
The convenience and efficiencies achieved by connecting digitized devices has created a groundswell of automation that penetrates how we live, travel and work. It is estimated that by 2025, this network of connected devices will generate 79.4 zettabytes of data, enough to fill around 80,000 data centers.6

Industry 4.0
The term industry 4.0 describes how manufacturing is evolving to leverage modern and future advances in computer power and connectivity. To make this a success, computer systems will interpret the physical world and communicate with each other through data.
It is no surprise therefore that Industry 4.0 will have an insatiable appetite for data that will need to be collected and stored effectively, creating a driving force for increased data center facilities throughout the world.

Autonomous vehicles
As driverless cars and autonomous vehicles become mainstream, the e-mobility sector must create an ecosystem in which these new-age vehicles can communicate with each other, as well as surrounding infrastructure and even pedestrians. It is estimated that each autonomous vehicle alone will create 4000 GB of data per day, based on one hour of driving in a 24-hour period.10 Multiply this substantial data requirements by the number of cars in major cities, and then add the data required by the connected street infrastructure and it is easy to see why creating an autonomous transportation system will be a specific driver for data center growth.

Evaluation – You cannot manage, what you cannot measure

STEP
01

"You cannot improve energy efficiency, unless you understand how much energy you are consuming, how it is distributed and where there is waste. Doing so enables informed decision making and targeted improvements, both now and as you progress along your sustainability pathway."

Brian Johnson, Global Data Center Leader, ABB

MEASURING PUE

The first and most critical step to developing a pathway towards data center sustainability, is to measure energy usage and the standard most commonly used within the industry is Power Usage Effectiveness (PUE). Put simply, PUE calculates the difference between total input power and the total IT load as a ratio, with the lowest theoretical value being 1, which for many data centers remains unachievable.

The lower the PUE, the more power is being used for IT, with most modern data centers calculating a PUE of between 1.5 and 1.7, and state-of-the-art facilities reaching ratios of 1.1. It is important to remember that data centers will perform differently according to a range of variables, including environmental factors such as humidity. PUE should therefore be considered as an individual benchmark for performance – a starting point from which to begin, and a marker for measuring success.

Theoretically, calculating PUE should just require two measurements – power in and IT power, but as data centers have become more complex and technology rich, measuring PUE has become more complex.

One effective method derived by The Green Grid, a collaborative nonprofit industry consortium dedicated to improving the resource efficiency of data centers, recommends monitoring PUE over a period of one year, taking ongoing measurements to compensate for peak and nominal loading changes that occur within the data center. If this is not possible, The Green Grid suggests an alternative method of measuring PUE over a period of time not less than one month and ensuring that the loading within that period is typical for that particular environment.

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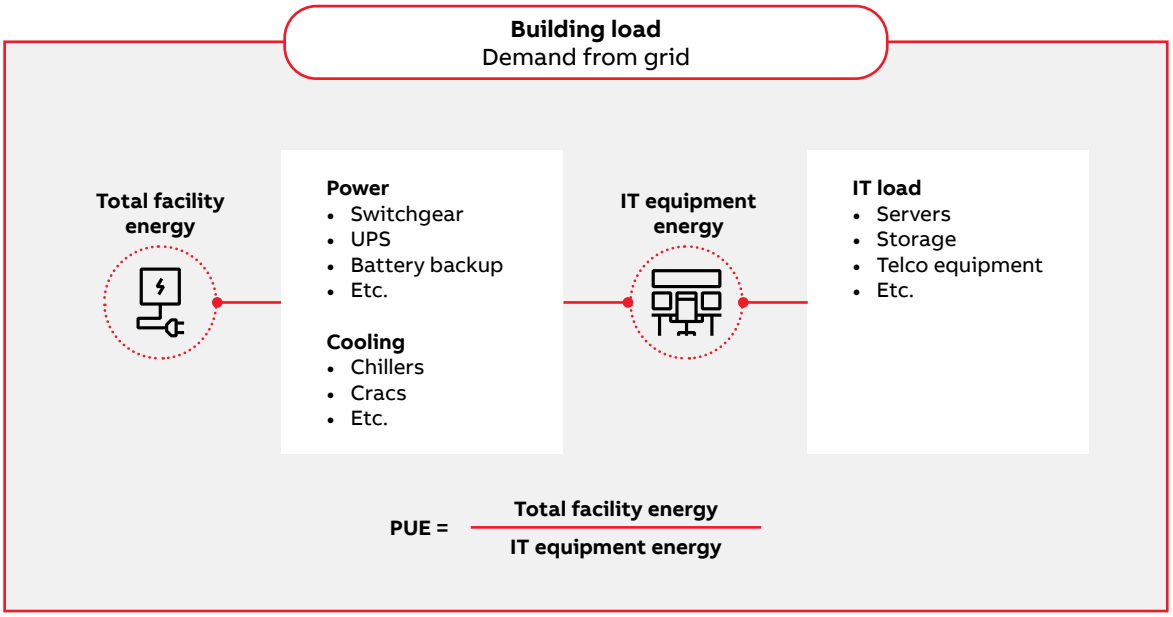
Illustration of how PUE would be calculated in a data center



Here are some of the key variables to consider when measuring PUE:

Input power distribution
Unless your facility is a dedicated data center, identifying the correct input power measurement can be difficult, and simply reading the load at the utility mains connection will not suffice.
The majority of data centers form part of a multi-use building and share the utility mains connection with a range of other loads, making the identification of the data center's input power challenging.

UPS connections may not reflect IT load
It cannot be assumed that all equipment connected to the data center's Uninterrupted Power Supply (UPS) are a direct contributor to the IT load. Examples include HVAC loads such as fans that are often connected to the UPS for "ride through" reasons.

Likewise, some IT loads that should be measured as part of your PUE calculation may not be connected to the UPS because they can tolerate interruption better than other systems. A good example of this is "cold storage" for data used infrequently or stored for compliance purposes.

Separate instrumentation for accurate results
Given these complexities, achieving an accurate PUE requires all data center loads to be instrumented separately from other non-data center loads within the building, and their input power summed individually. Furthermore, to obtain the total IT load, all IT devices need to be separately instrumented, and their input power also summed. In a typical 1 MW data center, this process is likely to require thousands of simultaneous power measurements, which is a technical and practical challenge.

A solution to measuring PUE with an aggregate IT load
Given the real-world complexities of measuring PUE, many data center operators now opt for using a small number of consolidated measurement points combined with mathematical models of the PUE system to demonstrate efficiency measurements of sufficient accuracy.
Measuring the aggregate IT load is one example of this more practical approach, as demonstrated in Figure 1, which shows a typical example of a large number of IT loads being supplied by Power Distribution Units (PDU), connected to a UPS.

ONGOING MONITORING

The ongoing monitoring of power distribution and consumption is just as important as measuring PUE. It will demonstrate changes in power usage, trends and spikes that will enable informed decisions to be made when the times comes to upgrade equipment or make infrastructure changes that will improve the sustainability of your data center.

By understanding where the most power is being consumed, data center operators can better understand how to drive efficiencies. As data center facilities grow and evolve, this constant monitoring will provide a real-time or near-real-time analysis of power performance.
There are a number of ways to monitor how power is used throughout a data center. Here are just a few highly successful aftermarket solutions to consider:

EKip Up
Ekip Up from ABB is a low-voltage digital monitoring unit that monitors, protects and controls power distribution from an “all-in-one” platform. Using this simple to install solution, you can:

- Update basic switchboards with new monitoring, protection and power control
- Operate up to 35 individual protection functions for power distribution and generation
- Utilize more than 1,000 measurements and power quality data
- Manage peak shaving and load shifting with four power thresholds everyday

CMS-700
ABB’s CMS-700 is a circuit monitoring system with up to 96 sensors for multi-channel measurement in either AC or DC. This versatile and easy to install solution can be integrated into already wired panels and provides easy access to data collection, analysis and downloads to optimize energy consumption, efficiency and energy management.

ABB Ability™ Energy and Asset Manager
ABB Ability™ Energy and Asset Manager is a state-of-the-art cloud solution that integrates energy and asset management in a single intuitive dashboard. Providing full remote visibility of asset and electrical-system behavior, ABB Ability™ Energy and Asset Manager provides insights that help you minimize both cost and risk and maximize performance and safety across your operations.

Collaborate – Work with your local utility provider to maximize sustainable energy sources

STEP
02

"Connecting to the smart grid not only allows data centers to purchase renewable energy from local independent sources via their mains utility provider, but also enables data centers to feed their own renewable energy back into the grid when IT loads are low, if they have power generation systems installed on site.

"Strategies like this make a considerable difference in offsetting your carbon footprint and place you a step closer to reaching your end goal of either net zero emissions or carbon neutrality."

Danel Turk, Solution Portfolio Manager, Data Centers, ABB

Being connected to mains power gives data centers an ally in the battle for sustainability. Your local utility provider will prove a profound source of knowledge and consultative expertise and can assist you in making key decisions about the power you purchase, distribute and consume.

Explore Purchase Power Agreements
A Purchase Power Agreement (PPA), also known as an electric power agreement, is a long-term contractual agreement between your business and the utility provider that enables you to purchase renewable energy in high volumes from an independent power producer (IPP).

PPA s are good way to mitigate risks on energy price changes and allows you to make long term plan for business plan.

Older data centers architectures are built in a way that they are energy consumers. Newer technologies and architectures are allowing data centers to become prosumers, and they are able to participate in grid support services.

PPA s will allow also agreements between utility and data center to agree what additional service can be provided to support the grid when needed. For such service usually is needed onsite generation eg Solar power, fuel cell or gas turbines and Battery energy storage or Medium voltage UPS combination

Consider an ESCO partner
When agreeing your next build location, consider working with an Energy Service Company (ESCO) to dramatically reduce the energy costs of your building.

Historically, an ESCO provides a broad range of energy solutions including design expertise, retrofitting, energy conservation, outsourcing energy infrastructure, risk management and much more.

In recent years, ESCO partners have also developed innovative financing methods, including off-balance sheet mechanisms that make onsite energy saving infrastructure an affordable and often appealing option for many data center providers looking to generate renewable energy for the first time. Working with an ESCO partner is often a safe way to take these initial tentative steps towards power generation because if the energy savings do not cover the capital investment during the agreed time frame, responsibility often lies with the ESCO to pay the difference.

A typical pathway for working with an ESCO partner would include:

- A comprehensive analysis of the property or build plans
- The designing of an energy saving solution
- Agreement of a payback period during which the energy savings are used to pay back the capital investment of the project over an agreed term, typically between five- and 20-years
- Installation of the required infrastructure and processes
- Ongoing maintenance of the system to ensure energy savings during the payback period

Design – minimizing energy usage and operating at peak efficiencies

STEP
03

"As an industry, we have eliminated 80 percent of energy losses by evolving how we design our data centers, but we are now hitting the point of diminishing returns. It is time to invest in technologies that improve energy efficiency and lower carbon footprint, like SF6-free switchgear and variable frequency drives to optimize cooling via segregation of cooling paths.

"Changes like this would reduce overall IT and infrastructure energy consumption by 15 percent and allow us to continue our progression towards carbon neutrality."

Harry Handlin, Data Center Solutions Architect, ABB

DESIGNING YOUR DATA CENTER FOR SUSTAINABILITY

Switching from LV to MV UPS
One important design consideration for any modern data center is whether a transition from Low Voltage (LV) to Medium Voltage (MV) level UPS protection and a more energy efficient configuration is viable. Recent technological advancements in the design of MV UPS allows to build more efficient energy buffer to avoid black outs and delay rotary systems start up. These systems can deliver significant energy savings compared to rotary systems.

Modern data centers are getting bigger, and this can make the transition from conventional LV UPS to MV level UPS protection more achievable. At MV, the lower currents require smaller cables and losses are lower, saving operators energy and carbon emissions. If there are less redundancies in the design of your data center and you are running as much load as possible through your MV UPS, your efficiencies will increase.

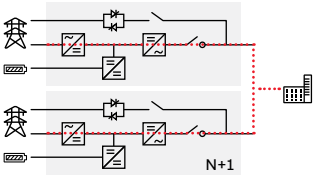
That said, both LV and MV technology is advancing at pace, and some market leading MV UPS systems can now offer 98 percent efficiency.

If switching to MV level UPS protection is not an option, it is still important to consider improvements in the design of your data center at LV. The following illustration demonstrates an example of current efficiency across several operating modes of a UPS design for LV:

Efficiency options

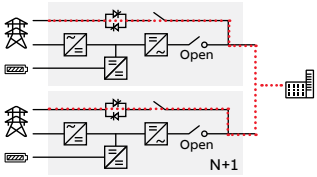
UPS's has multiple operating modes

VFI- double conversion
The default operating mode – **efficiency up to 97.4%** (recommended for all critical applications)



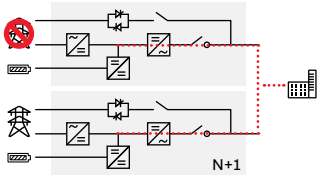
VFI: 97.4%

VFI- double conversion
Alternate operating mode – **efficiency up to 99%** (for ultimate efficiency savings – double conversion on demand)



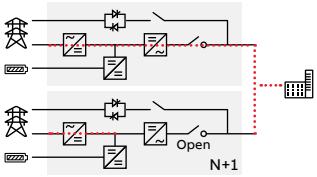
ECO: 99%

Battery mode
Load supplied from energy storage solution



BATTERY: 97%

Low load optimization
Double conversion mode with **enhanced efficiency when load is low** compared to total capacity



XTRA-VFI: > 97%

BLOCK REDUNDANT CATCHER SYSTEM

In recent years, the machinery and systems we use within our data centers has become more reliable and so has how we connect our facilities to a power supply. These advancements have led to new thinking around topology and efficiency, resulting in more utilization of the UPS.

Now, more than ever, data center operators are moving away from the conventional system-plus-system topology, in favor of using block redundant topology instead.

System-plus-system topology
System-plus-system topology uses two totally independent systems to feed the critical load and has long been the chosen method of design for more conventional data centers. These topologies have a strong record of reliability but can be prohibitively high to operate with a maximum asset utilization of 50 percent.

Block redundant (catcher) topology
For data centers with single corded loads, newer block redundant (also known as catcher) topology can achieve an asset utilization of 80 percent, by using a Static Transfer Switch (STS) to transfer the critical load from the primary system to the reserve or catcher system.

With such a difference in performance, it is clear to see why many future-focused data center providers are choosing block redundant design methods. This is a trend not only driven by the increasing scale of data centers but also improvements in networking.

Improve PDU arrangements to decrease transitions and increase voltage to the server
In addition to the specification of your UPS equipment, it is also important to consider how power is distributed around your data center. Making sure all connections are correct can help improve efficiencies and lower power consumption.

Remember, almost all IT equipment is designed to work with input power voltages ranging from 100- to 240- V AC in accordance with global standards. The higher the voltage, the more efficient the unit is. Operating UPS at 240/415 V three-phase, four-wire output power, a server can be fed directly and an incremental 2 percent reduction in facility energy can be achieved by eliminating transformers in PDUs.

IMPROVE ENERGY MANAGEMENT THROUGH DIGITALIZATION

There are many benefits to investing in digitalization. It can reduce wiring, minimize installation and commissioning time and promote scalability. There are clear trends, such as using IEC 61850 and other open protocols to add intelligence to electrical equipment, and the increased use of energy management software to promote informed specification decisions.

IEC 61850

The standardized framework of IEC 61850 specifies a range of parameters for digitalizing substation integration, such as communication requirements, the structure of data in devices, functional characteristics and naming conventions for data. It is being increasingly used across smart grid applications, renewable installations and process industry applications as well as the data center market.

When exploited correctly, this open protocol allows engineers to create features such as advanced logic selectivity based on device-to-device communication, real-time diagnostics and integrated engineering. These advancements benefit equipment such as protection relays, circuit breakers, communication gateways, programmable logic controllers (PLCs) and supervisory control and data acquisition (SCADA) architectures.
Together, these devices make it possible to design and operate a fully integrated protection and supervision system that spans all required voltage ranges.

Digitalization, using open protocols like IEC 61850 can reduce wiring in subsystems like switchgears by up to 90 percent and reduce the time it takes to assemble, test, install and commission the equipment. One of the reasons digitalizing switchgear and other components is so popular is because it enables fast, effective scalability by reducing the need for hardware upgrades and allowing changes to system configuration to be done remotely.

SOLUTIONS FOR DESIGNING DIGITAL

ABB Ability™ Operations Data Management-Zenon
Designed to deliver better quality assurance, energy management and online reporting, Zenon from ABB is a secure operations data management platform that easily connects machines, infrastructure and electrical assets, both on site and remotely, enabling them to share information and develop insights for optimized operation.

Turning data into information, Zenon provides insight into production processes via more than 300 communication protocols and drivers, enterprise resource planning and cloud interfaces.

ABB Ability™ Energy and Asset Manager
The Energy and Asset Manager from ABB Ability™ is a state-of-the-art cloud solution that integrates energy and asset management into a single intuitive dashboard. It can be paired with ABB Zenon to incorporate and monitor energy usage from remote sources.

This solution provides insights that help you minimize cost and risk, to maximize performance and safety across your data center operations.

ABB Cylon® Building Energy Management Solution
Cylon® from ABB provides scalable automation and energy control for any size commercial or industrial building. This building energy management solution uses open protocols, common and secure internet standards and emerging technologies to meet the needs of even the most digitalized data center.

ABB Ability™ Data Center Automation
ABB Ability™ Data Center Automation is ABB's industrial solution for on-premise and hybrid cloud environments. At a base level, it is an integration and automation platform to enable transparency and interoperability for continuous optimization and high availability.

It allows data exchange and automation among systems, equipment, components and applications so you can integrate data center tool sets faster, visualize and manage physical assets within a 'single pane' view of the entire data center, and automate cooling and electrical systems for continuous optimization and improved uptime.

DIGITALIZE COOLING

As one of the most critical aspects for the correct and reliable operation of a data center, cooling infrastructure accounts for the consumption of around 40 percent of a typical data centers total energy usage.7 It makes sense therefore that the compressors, pumps and fans installed to cool the IT equipment should be a serious contender when looking to drive efficiency gains.

Variable frequency drives
Variable frequency drives (VFD) enable the speed of electric motors used in cooling applications to be controlled with greater accuracy. In doing so, they can deliver energy savings of between 20 and 30 percent9 by ensuring that the flow produced matches the facility's fluctuating requirements, rather than relying on throttling and damping to control the output of a motor running at full speed all the time.

Correct specification of motors
Different motor technologies perform better in different load ranges, with an efficiency window of over 10 percent at certain loads.5 To optimize the efficiency of cooling motors, it is important to specify one that has been designed to work at the load it will operate at most of the time. In most cases, this will not be the nominal load, but well below it.

Take a whole-system approach to efficient cooling
Contrary to popular belief, it is simply not possible to calculate the efficiency of a cooling system by measuring the performance of each component – instead, you must take a whole-system approach, to ensure no losses go unaccounted for. For example, you may install highly efficient motors to run applications like pumps, fans or compressors with the minimum possible losses and use drives to match the motor speed, but if the design of a fan causes massive aerodynamic losses, the entire system efficiency or wire-to-air efficiency could suffer.

CONSIDER CHANGES TO BACK UP POWER ARRANGEMENTS

Power outages for the data center market cost in the region of $9,000 per minute8, making backup power an essential component of any mission critical facility, and in recent years, much investment has been made into advancing these technologies. With a notable increase in pilots using battery energy storage systems (BESS) and fuel cells, including unique solutions such as ammonia fuel cells, there are now more options than ever before for data centers to drive efficiencies through renewable back up power arrangements.

As with all market-leading technologies, the main draw with the latest back up power advancements is their connectivity, which is proving useful across many pilot locations for the integration and monitoring of renewable energy.

Choosing the right energy storage system offers the following benefits:

- Smoother grid integration of renewable energy by reducing variability
- Storing renewable generation peaks for use when demand is at its highest
- Flattening demand peaks, thereby reducing stress on grid equipment
- Providing infrastructure support as loads increase
- Decreasing or eliminating the power fees related to short time peak loads
- Maintaining generation and demand balance
- Postpone backup generator startup need

BESS

BESS manage energy costs by leveraging peak shaving, load shifting and maximization of self-consumption. These systems provide critical backup power buffer preventing revenue losses due to outages and can be easily scaled to meet the demands of growing infrastructures.
For a data center leveraging the benefits of digitalization, BESS are often easily connected to power management software and provide ample opportunity to carefully monitor, and control consumption of renewable power based on digital insights via any chosen building management system.

Maintenance – upholding your newly implemented efficiency changes

STEP
04

"Every product or system used within a data center carries a 'product carbon footprint' which accumulates at every stage of its life, from cradle to grave. From the extraction of resources right at the start, through to manufacturing of components and production of the final product, transportation by land, air, or sea, and then the emissions created during the use phase due to the product's intrinsic power losses, and finally the associated carbon cost of end-of-life disposal.

"It makes sense therefore, that expanding the system's usable life, will reduce the need for the more carbon intensive aspects of a products life cycle such as the extraction of metals, manufacturing and end of life disposal."

Lee Todd, Executive Product Manager, Data Centers, ABB

Condition monitoring and predictive maintenance
Harnessing the power of connectivity to introduce condition monitoring can further extend asset life and reduce the impact of your data center on the environment. By monitoring the operational conditions of key systems, such as the temperature around critical components, using sensors and a digital predictive maintenance solution, facility managers will be made aware when operational conditions breach the ideal parameters. This allows engineers to make fast, informed decisions that can prevent outages and maintain uptime.

Replacing outdated components
When it comes to maintaining systems that contain multiple components, it is now possible to replace only the components that have become outdated, rather than the entire system. This not only drives notable cost efficiencies, but also promotes circularity.

One example of this is with switchgear. Thanks to advancements in technologies, data center owners are now able to replace outdated circuit breakers using specially designed retrofitting solutions, without scrapping the rest of their switchgear system. In doing so, it is possible to keep much of their equipment in service, including the parts most damaging to natural resources, such as the metal cabinet, steel plates and busbars.

Upgrading technologies without upgrading systems
As data centers continue along their path of digitalization, it is inevitable that systems will need to be upgraded with the latest advancements in digital and connected technologies.

Thanks to substantial R&D investment into component design, it is now possible to retrofit upgrades of a range of key components rather than undergo the complete decommissioning and replacement of entire systems. By using retrofit kits and brownfield solutions to prolong the service life of equipment, it is possible to only upgrade the parts that will improve functionality in line with the latest connectivity standards, keeping the rest of the system in service. This approach allows data centers to promote a more restorative economy, whilst still operating at the forefront of technology.

Recycling – end-of-life considerations and asset disposal

STEP
05

"End-of-life circularity begins upstream in the design phase, where it is the manufacturer's responsibility to design products and systems that are smaller, lighter and use less raw materials. To promote circular economies in your data center, work with manufacturing partners that begin their product's life, with recycling in mind."

Kent Chow, Data Center Segment Leader Asia, ABB

PEP ecopassports
In response to many data centers signing the European Climate Neutral Data Center Pact to achieve net zero by 2030, market-leading manufacturers are now investing in the proven credibility of their systems.

One example of this is the PEP ecopassports, a prestigious label awarded to specific products that can meet stringent performance criteria throughout its life cycle, including manufacturing, distribution, installation, use and end-of-life. Providing an international reference framework, the PEP programme ensures reliable, transparent, comparable and verified environmental performance indicators for electrical, electronical, heating and cooling equipment.

ABB is proud to offer the PEP ecopassport label with its MegaFlex DPA, a low voltage UPS, that provides a best-in-class efficiency of 97.4 percent and reduces carbon emissions by 641 tons during the lifetime of the product.

Change is happening for circular end-of-life disposal
There are many signs of positive change throughout the data center ecosystem that suggest circular end-of-life disposal will soon be a mainstream priority. From ITRenew, the world's largest IT asset lifecycle management solution, receiving additional investment from its new parent company Iron Mountain, to progress in the recycling of Lithium-ion batteries and the increased use of non-toxic chemicals in battery design.

It is important, despite the pace at which the data center is moving, that facility managers keep up to date with the latest end-of-life disposal techniques, working with carefully selected manufacturing partners who can provide ongoing best practice consultation can help.

ABB, supporting data center sustainability

ABB has stood alongside the data center market throughout its transition towards a connected, digitalized and sustainable ecosystem. Offering a wealth of systems and software solutions for all aspects of data center efficiency, ABB is best placed to offer consultative reassurance and technical support from the early design stages, right through to operation and maintenance, and end-of-life circularity.

Our commitment to sustainability
At ABB, we actively contribute to a more sustainable world, leading by example in our own operations and partnering with customers and suppliers to enable a low carbon society, reserve resources, and promote social progress.

Further reading
Would you like to learn more about ABB's data center solutions? Click here

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How Noise Affects Children.pdf
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How Noise Affects Children

By: Sophie J. Balk, MD, FAAP

Many parents know that very loud noise can hurt kids' hearing. With more kids and teens using personal listening devices like headphones and earbuds for music, videos and classes, it's especially important to be aware of sound that's too loud. It's also important to know that too-noisy environments can have harmful effects that go beyond hearing. Read on to learn more.

What is noise pollution (environmental noise)?

Environmental noise—also known as "noise pollution"—comes from sources around us. These include road traffic, airplanes and airports, railroad trains and wind farms. Indoor sources of noise such as TVs and appliances can also be too loud.

What are the effects of environmental noise?

Environmental noise is less likely to cause hearing problems than loud noise from personal devices and activities such as concerts, dances and celebrations. Still, environmental noise can have harmful effects on children's learning, behavior and sleep.

Compared to adults, children usually are more vulnerable to noise effects because they are growing and developing. They may also have less control over where they spend time. Children living in less wealthy environments are more likely to be exposed to higher environmental noise levels.

Some of the ways environmental noise can affect children include:

Learning

Too noisy classrooms and child-care settings can affect how children learn. Reading, remembering, and doing well on tests can be difficult when there is too much background noise or noisy conversations. Planes flying overhead can make it hard to understand what the teacher is saying. Teachers may need to interrupt lessons to wait for planes to pass. Feeling annoyed by noise can cause kids to lose focus on lessons.

For infants and children learning how to talk, a noisy environment can make it harder for them to understand speech.

Play

Environmental noise can influence how children play, which is important for their development. Many children are exposed to background noise from TVs left on even if the child isn't actively watching. When TVs are left on, babies and toddlers don't focus as much or as long on playing with toys.

Sleep

Noise often interferes with sleep. According to the World Health Organization, millions of people suffer worse sleep caused by nighttime noise from road traffic and other sources. Research done mainly in adults shows that even low levels of nighttime environmental noise cause more body movements, awakenings and other sleep disturbances. These happen even though the sleeping person is not aware of them. Poor sleep can cause daytime sleepiness and affect children's learning.

Stress

Too much noise can cause a person's body to have a stress response. We can see this in premature babies in neonatal intensive care units (NICUs), for example. When these babies are exposed to alarms, telephones, ventilators, pumps, monitors and incubators, there can be changes in their breathing, heart rates and oxygen levels. Noise can increase children's blood pressure, and in adults, long-term noise exposure even raises the risk of having a heart attack.

How does noise affect children with Autism Spectrum Disorder?

Some children with special sensitivities—such as Autism Spectrum Disorder (ASD), Attention-Deficit Hyperactivity Disorder (ADHD), sensory processing disorders or learning differences—may be disturbed by sounds or noises that usually don't bother children without these conditions.

How to reduce environmental noise

More research is needed to learn more about how the effects of noise build up over a lifetime. In the meantime, we know enough to take steps to decrease children's exposures. Many NICUs, hospitals, schools and child-care settings have worked to lower noise levels.

As a parent, you can also take steps to lessen the family's exposure to environmental noise. Some tips:

- Reduce the volume on TVs, computers and radios. Turn off devices when they're not in use.
- Quiet is important for health and learning. Create a quiet room at home for play and other family activities.
- If your family is moving to a new home, consider the neighborhood's noise level. Look into nearby airport flight path or wind turbine, for example, when deciding where to live.
- If your family goes out to eat, choose a quieter restaurant to make it easier to talk to each other.
- If your child has a condition such as ASD or ADHD, consider using noise-cancelling headphones or hearing-protection earmuffs, which reduce harmful outside noises.
- Infant sleep machines ("white noise" machines) sometimes are used to drown out environmental noise. Some machines can produce hazardous noise levels. If you use a sleep machine, place it as far away from the baby's head as possible and use it for a short time only.

Also remember that headphones, earbuds, and other personal devices can be sources of harmful loud noise. If your kids are nearby, they should be able to hear what you're saying even when using their devices. If not, have then turn down the volume.

About Dr. Balk

Sophie J. Balk, a general pediatrician, is a member of the American Academy of Pediatrics (AAP) Executive Committee of the Council on Environmental Health and Climate Change. Dr. Balk is Associate Editor of *Pediatric Environmental Health*, 4th Edition, the AAP handbook for pediatricians. She is the lead author of an upcoming AAP technical report and policy statement on noise.

Last Updated: 4/29/2022

Source: American Academy of Pediatrics Council on Environmental Health and Climate Change

SB474-Testimony-Favorable with Amendments-E-Law.pd
Uploaded by: Elizabeth Law
Position: FWA

Testimony Supporting SB 474, Favorable with Amendments

Education, Energy and Environment

February 22, 2024

Dear Chair Brian Feldman and Members of the Committee,

I have a Masters in Electric Power Engineering from Rensselaer Polytechnic Institute. I analyzed the NYC grid for Con Edison and investigated blackouts for the Federal Energy Regulatory Commission.

I am not against datacenters and very much pro unions. But I am against locking Maryland into technology first developed in the 19th century.

Why amendments to SB 474 are needed: The governor's bill is portraying this issue as a simple business matter. It is far more complex and entangled than that. As an electric power engineer, I implore you to engage in much further engineering research. First, there is already a shortage of electric power in the state. Last summer PJM declared a Phase 1 Emergency. Little has changed since then. The prospect for new and additional power is fraught with difficulty and likely to take many years to resolve, during which advances in renewable backup generation will be made.

Second, is the issue of Maryland's environmental laws such as the Climate Solutions Now Act versus the datacenter's request to use polluting diesel generators for emergency backup power without any oversight or consideration of compensation or mitigation for the greenhouse gas emissions from hundreds of these machines.

Local utility First Energy's most recent projection of available power to Quantum Loophole (QL) is 250 megawatts in the next few years with another 300 megawatts some years thereafter. This is only a small percentage of what is being requested.

QL's projections of power requirements at full buildout have increased from 1200 megawatts to 2400 megawatts to a gargantuan 3000-5000 megawatts. Since all of a datacenter's operations are considered critical load, enough diesel generators would be required for emergency backup power to equal normal power levels from the utility grid.

Therefore 2400 megawatts of power would require 800 diesel generators, 3000 megawatts of power would require 1000 diesel generators. And that is for just one campus.

Meanwhile, great advances are being made in clean emergency power systems. In the years it will take to build the transmission lines and other infrastructure to make this power available, clean emergency power systems will be available and emergency diesel generators will be phased out.

By removing the Public Service Commission from its legal oversight and removing backup generation of any size from Maryland's environmental laws, this bill as currently written would lock Maryland into keeping dirty diesels for years to come. It would

prevent the state from transitioning to nonpolluting emergency backup systems. There is no need to rush to conclusions about emergency diesel generators. Further engineering review is warranted.

During monthly testing and certainly during an emergency, many hundreds of diesel generators will produce harmful greenhouse gas emissions, fumes, and noise. (See additional testimony on the harmful effects of noise.)

Clean backup power technology is currently available, although not in sufficient quantities to replace hundreds of diesels. However, the pace of design is driven by a worldwide desire for sustainable datacenters. Among currently available clean power methodology is:

- Demand side response - activities that reduce or shift electricity demand in response to real-time events on the grid, therefore addressing short-term fluctuations in demand or supply
- Fly wheels - mechanical devices which use the conservation of angular momentum to store rotational energy; A flywheel's stored energy will donate a surge in power output upon a drop in power input and will conversely absorb any excess power input (system-generated power) in the form of rotational energy.
- Battery Energy Storage Systems (BESS) Utility scale batteries - A number of companies including ABB, GE, Hitachi, Caterpillar and Schnieder now offer backup batteries that could be used to augment diesel generators. (See as testimony ABB product material.)

Developing Technologies include

- Flow Batteries - A flow battery, is a type of electrochemical cell where chemical energy is provided by two chemical components dissolved in liquids that are pumped through the system on separate sides of a membrane. A flow battery manufacturing plant is being built in West Virginia.

Rationale for Amendments to SB 474 -If removed from both the CPCN Process and the CPCN Exception Process, generators and systems of generators designated for emergency backup should continue to fall under Public Service Commission oversight in some new procedure developed for datacenters.

Role of the Public Service Commission - The role and authority of the Public Service Commission and Maryland Department of the Environment shall be specified including the nature of the “Permit to Construct” from the Maryland Department of the Environment.

The mechanisms for public notice, participation, and involvement when any power generating system that produces more than 20 megawatts is planned shall be specified. If outside the CPCN Process, what specifically is the process for datacenter emergency power requests? The rights and opportunities for public comment shall be described.

Generation systems for emergency power that cumulatively provide more than 20 megawatts shall be reviewed by the Public Service Commission on a periodic basis of five years to obtain approval to continue operations.

Datacenter facilities should be encouraged to replace some portion of its diesel generators with renewable backup power such as utility scale batteries, battery microgrids and generators that run on hydrogen gas.

Multiple generating units designated for emergency operation when the power supply to the facility from the electric utility is interrupted, shall only be operated in electrical emergencies or during periodic testing.

Diesel generating units shall not be operated to provide power in non-emergency situations to reduce stress on the electrical system during high energy use periods. Because diesel fuel releases more than 55kg per million BTU, it should not be an energy source used for baseload power.

Environmental Issues due to hundreds of diesel generators at any one facility:

Considering that all diesel generators at the facility will be operating simultaneously in an emergency the following amendments are needed.

- The generator fuel shall be specified when the facility applies to the Public Service Commission.
- Require the use of "green diesel" or Hydrotreated Vegetable Oil or (HVO) or equivalent.

When generation units are fueled with diesel fuel, the datacenter facility shall report to the Public Service Commission:

- The number of generators that will be required to operate simultaneously and the expected megawatts to be generated in an electrical emergency shall be specified.
- The greenhouse gas emissions that will be produced though monthly testing.
- If an emergency operation is required because the facility has separated from the utility, the amount of greenhouse gas emitted and as monitored shall be recorded and reported.

The facility shall report to the Public Service Commission and Maryland Department of the Environment, how it will compensate for greenhouse gas emissions.

Tier IV or equivalent diesel generators should be mandated, or best available technology at the time, to the extent available/practicable.

Air monitoring and reporting to the PSC shall be conducted prior to operation of the facility and as a consequence of periodic testing and any use during an emergency of diesel generators.

Noise limits for diesel generators at the perimeter of the facility property shall be determined by the Public Service Commission and Maryland Department of the Environment for periodic testing of a specified number of diesel generators tested at one time and during emergency operations when hundreds of diesel generators will be operating. (The Frederick County Data Center Working Group is recommending a limit of 55 decibels during operation per generator.)

Testing for Noise: Independent testing is necessary to determine the decibel level when all diesel generators are running in an emergency. This information shall be reported with the Public Service Commission and local public officials. The public shall have access to this data on a regular basis. Limit periodic testing time to be done between the hours of 8 - 5 Monday through Friday.

Safely storing diesel fuel: The facility shall report in its application to the Public Service Commission, the method by which fuel will be safely stored, where it will be located, the use of leakage resistant fuel-storage containers, fire-fighting equipment will be present at the site and hazmat training that will be provided.

It would be a travesty to rush into locking in 19th century technology when we are so close to developing sustainable datacenters. Moreover, it is only through regulatory measures that all datacenters will conform to modern backup power technology.

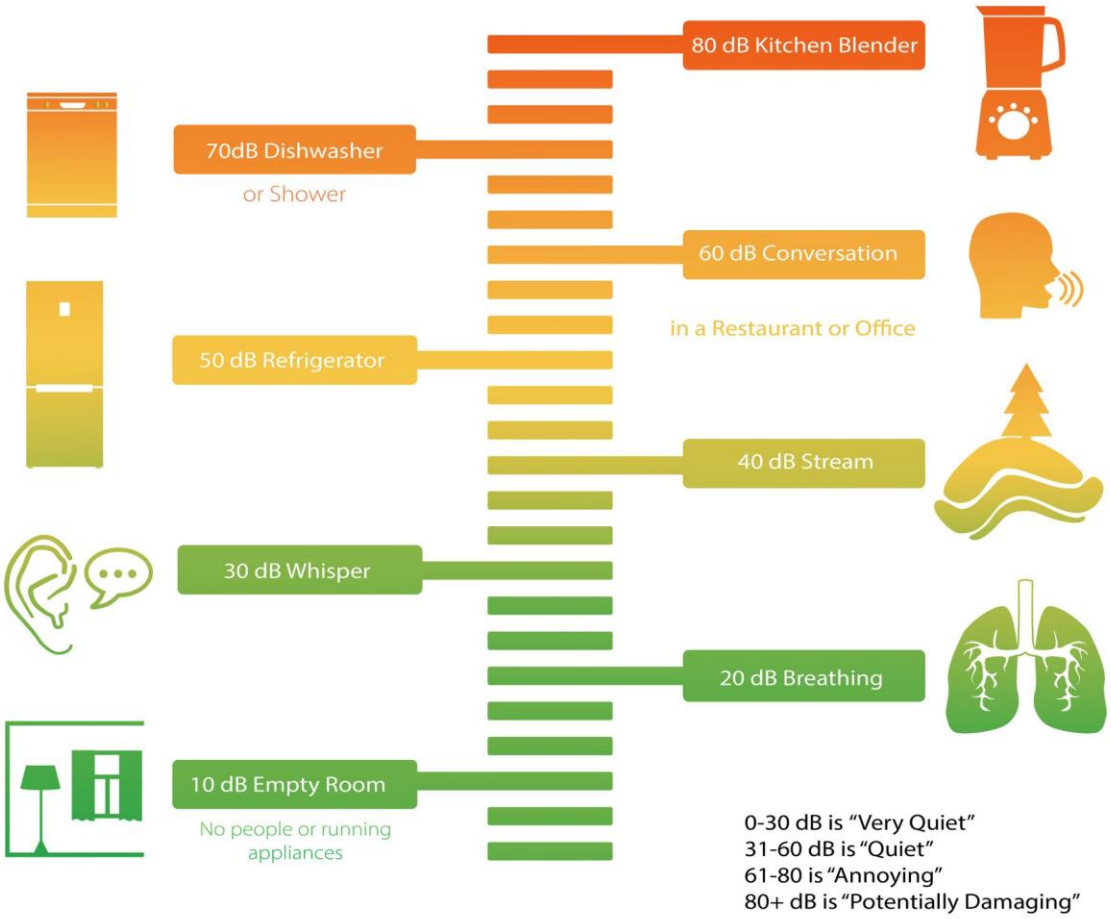
Please consider these amendments in revising SB 474.
Thank you,
Elizabeth Law,
Electric Power Engineer

Sound Level and Its Effects.pdf
Uploaded by: Elizabeth Law
Position: FWA

Sound Levels and their Effects

Decibels is the measurement unit used for the intensity of sound. Humans can hear decibel levels starting from 0 dB and 120-140 dB is the sound threshold of pain.

70 dB is in the middle of this decibel range. It is equivalent to the sound level of a regular washing machine. It is also equivalent to the noise level in an office environment or inside a car driving at 60 mph.



70 dB noise is not considered harmful to human hearing. However, extended exposure to levels above 55-60 dB can be considered disturbing or become annoying.

For public or general environments, the Environmental Protection Agency considers that exposure to 70 decibels over a period of 24 hours is a level that can prevent measurable hearing loss over a lifetime. Therefore, 70 dB is the maximum level of noise you should be exposed to during a normal day.

This maximum level of 70 dB is considered for a 24-hour average. If you are exposed to levels above 70 dB you will need to balance out that exposure with a sufficient period of quiet to prevent hearing damage or hearing loss.

For comparison, the generally accepted exposure to noise in work environments is limited to 85 dB over a period of 8 hours/day.

What 70 dB sounds like will also depend on where you are standing compared to the sound source. The closer you are to the sound source, the louder the noise level will be. When the washing machine or dishwasher is close to your ear, you will perceive the sound louder. Move 1 or 2 meters away from it and it will become quieter. However, this does not mean that the sound generated by the washing machine or dishwasher changes. It's still at 70 dB. The only thing changing is your perception of that sound.

Exposure time is another important aspect. While you may not be annoyed by how loud 70 dB is if you are exposed to it for a few minutes, extended or repeated exposure can become disturbing. It can affect your concentration, raise blood pressure levels, and cause a number of adverse health effects.

Common Sources

Here is a list of sound sources that are 70 dB equivalent (on average):

- A normal conversation: 60-70 dB
- Open office noise: 65-75 dB
- An alarm clock: 70-80 dB
- Washing machine: 70 dB
- Dishwasher: 70 dB
- Restaurant: 70-80 dB
- Vacuum cleaner: 60-80 dB

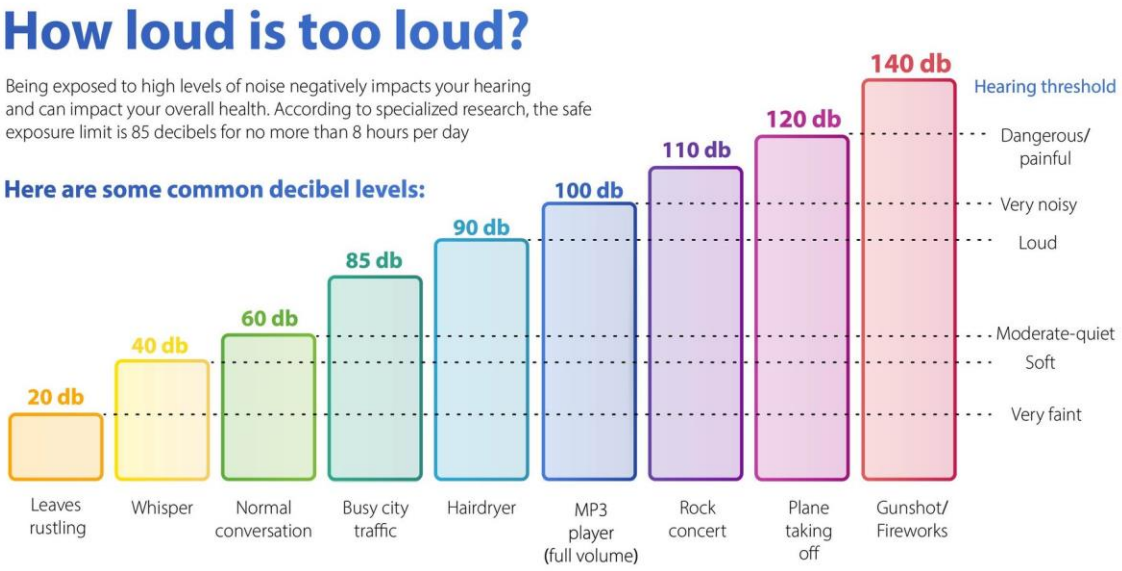
70 decibels is not considered too loud. It is a moderate noise level, under the level of 85 dB that is considered damaging to human hearing.

However, 70 decibels also represents the upper limit of the EPA recommended 24-hour average noise level exposure. Even if it's not considered a dangerous level, prolonged exposure to noise levels above 70 dB can still lead to hearing damage or hearing loss.

If you happen to become exposed to peak noise levels exceeding 70 dB for a shorter period, balance that exposure out with some quiet time. This way, you can give your ears a chance to recover from the loud noise exposure and avoid any temporary or permanent damage.

What Decibel Level Is Dangerous?

Sound levels exceeding 85 dB are considered dangerous and potentially damaging to human hearing. However, it all depends on the duration of the exposure.



Noise levels above 80-85 decibels over an 8-hour period is the generally accepted limit from which employers have to provide hearing protection to workers. These limits are regulated by law for work environments with high noise levels.

However, for public environments, no dangerous noise limits are defined. The recommended maximum level in any general setting is 70 dB over a 24-hour period.

Consequences of Exposure to Dangerous Decibel Levels

Being exposed to loud noise can affect the nerve endings in our inner ear and damage them. In turn, this can cause temporary or permanent hearing damage. If the exposure to loud noise continues, the result is permanent hearing loss.

Unfortunately, once it is lost, hearing cannot be restored. That's why it's vital that you monitor noise levels and avoid unnecessary dangerous exposure.

Diesel Generator Testimony R1.pdf
Uploaded by: Harry George III
Position: FWA

MOBILIZE FREDERICK
EQUITABLE SUSTAINABLE SOLUTIONS

Senate Education, Energy and Environment Committee February 21, 2024

Subject: SB474: Critical Infrastructure Streamlining Act of 2024

Dear Esteemed Committee Members:

Mobilize Frederick (hereafter "MF") is a registered 501 (c)3 non-profit climate and environmental advocacy group based in Frederick County, MD. As a point of reference, three of our members were selected by County Executive Fitzwater to participate in the recent Frederick County Data Center Work Group citizens advisory panel tasked with drawing up recommendations around the emerging data center industry in Frederick County. As such, we feel relatively well versed on the subject Senate bill and the topic of data centers and backup generators, to which we hereby submit comment and recommendations, as follows:

Comment

1) Our position is "favorable with amendments."
2) We believe that fostering an environment for responsible data center placement and operation in the County/State is beneficial.
3) We understand and accept that the use of backup generators is a baseline requirement for the data center industry, *at the present time.*
4) We believe that the deployment and use of backup generators can be done in such a manner so as to minimize and reduce the negative impacts thereof, and that such minimization and reduction mechanisms are currently lacking in the subject proposed legislation. (See below recommendations for correction thereof.)
5) We believe that new technologies for the provision of emergency backup power is evolving, and that such evolution includes minimizing negative characteristics associated with current backup generators, and as a result, provisions should be included in the subject bill to allow for and incentivize the introduction of new technologies in the future, particularly in the area of reducing greenhouse gas (GHG) emissions.

Recommendations

1) Only Tier IV class generators or equivalent, or the best in class commercially available technology at the time as it relates to minimizing GHG emissions, should be allowed under the subject bill.

2) Regardless of generators used they should always be required to utilize the least polluting commercially available fuel type(s) then available. (Ideally, any generators initially deployed should be forward compatible with future envisioned fuel types which emit lesser GHG emissions, for example, Hydrogenated Vegetable Oil (HVO), hydrogen etc.).
3) Since periodic testing of backup generators is common and a vendor-mandated general practice, such testing should: (a) Conform to the minimum requirements of the vendor as to duration and frequency of testing, and (b) Be restricted to normal business hours of 8 a.m. – 5 p.m., Monday – Friday.
4) Aside from periodic testing, when to use backup generators for operational purposes should be defined: We suggest they be restricted to emergency conditions only, which are defined as a failure of utility provided power, or an equipment failure on the campus or site of the data center or institution which the generator is supporting.
5) Include a mechanism in the subject bill to encourage: (a) The use of commercially available non-fossil fuel based generators or other alternatives for provision of backup emergency power, and (b) Early retirement of existing generators with lesser GHG emitting alternatives as they evolve and become commercially available.

Thank you for your consideration.

Respectfully,

Karen Cannon
Executive Director
Mobilize Frederick

SB474 - SUPPORT ONLY IF AMENDED - MDLCV - Critical

Uploaded by: Kim Coble

Position: FWA

MARYLAND LEAGUE OF CONSERVATION VOTERS

February 22, 2024

SUPPORT ONLY IF AMENDED: SB474 - Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Stations (Critical Infrastructure Streamlining Act of 2024)

Dear Mr. Chairman and Members of the Committee:

Maryland LCV expresses its significant concerns with SB474 - Critical Infrastructure Streamlining Act of 2024. While we understand the importance of industries that support public health and safety, including the jobs they create and the expansion of technology hubs which provide safe and reliable storage of data, we also remain committed to goals of climate emissions reduction, community engagement, and environmental justice. As drafted, SB474 removes important public engagement and regulatory review processes for the sake of expediting back-up generators for facilities designated as "critical infrastructure." The legislation also side-steps the intent of legislation passed in 2021 to require consideration of climate impacts and labor conditions in the development of energy facilities.

In 2023, Aligned Data Centers canceled its proposed project as part of the "Quantum Loophole project in Frederick County, citing the decision by the Public Service Commission to deny the exemption for its 168 back-up diesel generators. Cumulatively, these generators would have produced more than 500MW of energy, carrying a significant air pollution load.[1] This denial was based, at least in part, on a mandate established by the Maryland General Assembly in 2021 to require the Public Service Commission to consider labor conditions as well as climate impact when awarding Certificates for Public Convenience or Necessity (CPCN).[2] The intent of this important legislation was to ensure that decisions made by our state's regulatory agencies are aligned with our shared goals of climate emissions reduction. SB474 works in direct conflict with this law and contributes to our state's climate pollution at the moment when we are seeking to reduce it.

Maryland LCV is opposed to this legislation as drafted.

Maryland LCV's concerns are as follows:

[1]https://www.fredericknewspost.com/news/economy_and_business/aligned-pulls-plug-on-data-center-project-cites-objections-to-states-ruling-on-generators/article_a2f7dbaf-7ead-560b-946f-79cfbe675479.html
[2] https://mgaleg.maryland.gov/2021RS/chapters_noln/Ch_614_hb0298T.pdf

1) **Diesel back-up generators contribute carbon emissions to surrounding communities.** Diesel exhaust emissions include gases and fine particulates that can worsen respiratory ailments including asthma, allergies, bronchitis, and lung function, as well as increased risk of heart problems, premature death, and lung cancer.[3] Proposed sites for new data centers, including the Quantum Loophole project, often offer space for multiple facilities, which would contribute significant pollution to surrounding communities. Therefore, we believe that providing a comprehensive assessment of the climate impacts from these back-up generators as provided by the CPCN process is a critical step.

2) **The review that is required for a CPCN includes important community engagement stemming from a 2019 settlement of a Title VI suit against the State of Maryland.** The automatic exemptions of back-up generators could be considered circumventing this agreement, opening the State up to a similar civil rights suit. A copy of the settlement agreement is attached. More importantly, community engagement is a fundamental element of addressing environmental justice. The removal of community engagement specifically as it pertains to climate impacts is not in alignment with the state's environmental justice goals.

3) **The legislation does not adequately define either the types of facilities considered under this provision or the acceptable use of back-up generators.** This legislation could create a dangerous precedent for expediting additional pollution generating projects that do not reach the threshold for essential public safety or infrastructure. Additionally, according to current regulation by the Maryland Department of the Environment, back-up generators may be operated for as many as 50 hours for non-emergencies in addition to routine maintenance.

4) **The legislation provides an exemption from the CPCN without necessary transparency or consideration for pollution impacts.** The Climate Solutions Now Act of 2022 requires the state to reduce its climate emissions by 60% by the year 2031, with a path to 100% climate neutrality by 2045. In order to achieve these goals, Maryland must take a whole-of-state approach to ambitious climate emission reductions from every sector of the economy - including critical infrastructure. If industries may be given exemptions from their pollution emitting generators, they must create an off-set to these increases.

Maryland LCV respectfully, submits that if SB474 is passed that it also incorporates a series of amendments that will mitigate the impacts that the legislation could have on overburdened and underserved communities, and the carbon pollution load to the state.

Proposed Amendment Concepts:

1. Explicitly limit the use of back-up generators to ONLY maintenance (1 hour every month) and power outages.

[3]https://mde.maryland.gov/programs/air/mobilesources/pages/dieselhealthandenvironmentaleffects.aspx#:~:text=Health%20studies%20show%20that%20exposure,premature%20death%2C%20and%20lung%20cancer.

2. Require annual reporting to the Public Service Commission by all exempted facilities, including date, length of time and reason why the back-up generator operated.

3. Require a study by the Public Service Commission, in coordination with relevant state agencies, of large, high-energy use facilities, with recommendation for future legislative or regulatory action and subject to public comment. This study should examine, the impacts of and best practices for:
    i. minimizing the impact of energy consumption on grid capacity, reliability, and rate-payers
    ii. mitigating water consumption and mitigation against resource constraints
    iii. reducing and mitigating environmental Justice pollution loads and siting in already overburdened and underserved communities, including noise pollution
    iv. ensuring consistency between land use requirements in consideration of other state goals, including, but not exclusive to, agricultural preservation, forest conservation, and solar development
    v. reducing and mitigating impacts to climate goals from increased emission pollution

4. Narrow definition of 'critical infrastructure' addressed by legislation to only facilities necessary for public health and safety.

5. Require exempted facilities to adopt noise-mitigation measures in coordination and consultation with affected communities.

6. Require exempted facilities to give notice to surrounding community that it will be seeking air permits from MDE and provide information on how the community can participate (1 mile away except for rural areas which would be 3 miles away)

7. Require exempted facilities to retire two times the Tier 1 Renewable Energy Credits from solar, offshore wind, or geothermal sources equivalent to any fossil-fuel generated energy usage.

As drafted, SB474 is problematic legislation that undermines the important progress made on climate emission reductions over the past several years, and contradicts the goals set by the Maryland General Assembly and the Moore-Miller Administration.

Maryland LCV strongly urges the adoption of significant amendments to this legislation. Without these changes, Maryland LCV opposes the bill.

SB474 - Oppose.pdf
Uploaded by: Anna Griffith
Position: UNF

962 Wayne Avenue, Suite 504 | Silver Spring, MD 20910 | 301.608.1188
www.potomac.org

Senate Bill 474 - Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Stations (Critical Infrastructure Streamlining Act of 2024)

Position: OPPOSED

Date: February 22, 2024

Contact: Anna Mudd, Potomac Conservancy

Dear Mr. Chairman and Members of the Committee,

Potomac Conservancy is strongly opposed to House Bill 579, which removes important public engagement and regulatory review processes for the sake of expediting back-up generators for facilities designated as "critical infrastructure."

As proposed, House Bill 579 would result in exempting data center diesel backup generators and other potential impacts from being reviewed by the Maryland Public Service Commission for a Certificate of Public Convenience and Necessity (CPCN). When the Maryland Public Service Commission denied an exemption to a data center development last year, they did so based on its climate implications and air pollution from over 160 3-megawatt diesel generators required to run continuously, should there be loss of power due to weather or other events. Potomac Conservancy is concerned by this bill's sweeping exemptions. As written, all backup diesel generators, of any size, in any quantity, anywhere in Maryland would be exempt from the CPCN process. The technical expertise and judicial role of the Public Service Commission would have no influence in these potentially massive generator projects.

The CPCN process is a well-established and clear process that allows for appropriate public involvement and should be retained for this new industry. **Potomac Conservancy respectfully requests an UNFAVORABLE report from this Committee on House Bill 579.**

Sincerely,

Anna Mudd
Senior Policy Director
Potomac Conservancy

Data Center bill.SB474.SK.pdf
Uploaded by: Carol Bean
Position: UNF

EASTERN SHORE LAND CONSERVANCY

February 20, 2024

Dear Mr. Chairman and Members of the Committee,

The Eastern Shore Land Conservancy, Maryland's leading regional land trust operating in Cecil, Kent, Queen Anne's, Caroline, Talbot, and Dorchester counties, is opposed to passage of Senate Bill 474: Critical Infrastructure Streamlining Act out of the Education, Energy, and Environment Committee.

While data center development could be an important element of Maryland's high tech economy of the future, the backup power they require is comparably low-tech: dirty, noisy, diesel-fueled generators. ESLC urges the legislature to protect strong project review protocols that ensure only the best projects move forward to development by opposing passage of SB 474.

Senate Bill 474 would exempt many of the impacts of data center construction from robust review as part of the extant Maryland Public Service Commission's Certificate of Public Convenience and Necessity (CPCN) process. As Maryland has set goals for carbon emissions reductions and has begun the long, but necessary, process to move away from fossil fuel combustion, projects dependent on expansion of carbon emissions should be subject to reasonable review, which in the case of data centers already exists and should be retained.

Exempting data center projects from CPCN review means the state loses an important opportunity to hold individual projects accountable at the design phase, as well as review the entirety of the Maryland data center landscape as it evolves to ensure these projects are not having an outsized impact on the state at collective scale. Review protocols like those in the CPCN process for data centers, which include strong public comment components, help to improve projects as they move forward, and as such, should be protected, not eliminated.

Eastern Shore Land Conservancy appreciates the chance to submit our thoughts on this legislation and stands ready to be helpful in any way.

Sincerely,

Steven K. Kline
President

ACCREDITED LAND TRUST ACCREDITATION COMMISSION

STANDARDS FOR EXCELLENCE

114 S. Washington St., Suite 101, Easton, MD 21601 | 410-690-4603 | FAX 410-690-4604 | www.eslc.org

Nature Forward - SB474 - UNFAVORABLE.pdf
Uploaded by: Denisse Guitarra
Position: UNF

February 21, 2024,

Written testimony for SB474– Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)[1]

Position: UNFAVORABLE

nature forward
Connecting people and nature in the Capital Region
natureforward.org

Submitted by: Denisse Guitarra, MD Conservation Advocate, Nature Forward

Dear Members of the Senate Education, Energy, and the Environment Committee,

Nature Forward is the oldest independent environmental organization in the DC metropolitan region. For 126 years, Nature Forward has inspired residents of the greater Washington, DC, area to appreciate, understand, and protect their natural environment through environmental education, advocacy, and outdoor experiences. In our conservation advocacy we prioritize human health & access to nature, biodiversity & habitats, fighting the climate crisis, and sustainable land use. Nature Forward strongly **OPPOSES** and urges the Senate Education, Energy, and the Environment Committee to deny the passage of **SB474.**

This proposed legislation puts Maryland's climate goals, people and ecological health and wellbeing all at risk. Data centers consume massive amounts of energy and water for their operations and cooling, resulting in increased greenhouse gas emissions (GHG) and significant impacts to water withdrawal from our aquifers and damage to our streams through excessive stormwater run-off. They too often have direct negative effects on communities surrounding them, such as oppressive aesthetics, massive deforestation, increased sound &

[1] Available at: https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/SB0474?ys=2024RS

noise pollution. We list our main concerns for this legislation below and ask for your consideration.

Data centers threaten our climate goals while increasing air pollution and exacerbating health illnesses

Via the 2023 Climate Solutions Act (CSNA) of 2023, Maryland established its greenhouse gas (GHG) reduction goals of reducing its emissions by 60% by 2023 and 100% by 2035.[2] The 2023 "Maryland's Climate Pollution Reduction Report" states that the buildings sector is the largest consumer of electricity in the state of Maryland.[3] By enacting SB474, Maryland will fall behind its climate reduction goals by essentially opening the doors to the data center industry to undo all the existing climate legislations, regulations, and goals the state has so ambitiously worked toward in the last few years.

Data centers contribute to the addition of GHG emissions. Data centers not only consume huge amounts of energy (primarily from carbon-based sources), but they also need back-up diesel generators in case of power outages, maintenance and during peak use/energy spikes. Using diesel generators is one of the most harmful ways to produce energy and has multiple negative health effects, such as lung cancer, cardiovascular disease & respiratory illnesses like asthma.[4] Apart from the detrimental health impacts diesel engines produce, they also deplete ozone layers, which contributes to climate change.[5] For health and environmental reasons, Marylanders simply cannot allow data centers to get generator exemptions via SB474.

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[2] MD Climate Change Program. 2023. Available at: https://mde.maryland.gov/programs/air/ClimateChange/Pages/index.aspx
[3] Maryland's Climate Pollution Reduction Report. December2023. Page 34. Available at: https://mde.maryland.gov/programs/air/ClimateChange/Maryland%20Climate%20Reduction%20Plan/Maryland%27s%20Climate%20Pollution%20Reduction%20Plan%20-%20Final%20-%20Dec%2028%202023.pdf
[4] Health Effects of Diesel Exhaust. Available at: https://oehha.ca.gov/air/health-effects-diesel-exhaust
[5] Learn About Impacts of Diesel Exhaust and the Diesel Emissions Reduction Act (DERA). 2023. Available at: https://www.epa.gov/dera/learn-about-impacts-diesel-exhaust-and-diesel-emissions-reduction-act-dera

Data centers have overwhelming power needs, resulting in massive pressure on our electrical grid and reliance on polluting generators.

Data centers put a large energy strain on the local energy grid. Virginia, which currently holds half of the world's data centers, is facing grave threats to its carbon emission reduction goals and landscape impacts for massive transmission lines to power its enormous data centers, which have seen a significant peak in electricity demand in the last few years.[6] Furthermore, in Northern Virginia, there are now over 4,000 commercial diesel generators of sizes ranging from 600- 3500kW (larger than a typical household generator which varies from 10-26 kW) to ensure data centers can continue to run even if the grid fails.[7] The numbers are stunning: one data center can use up the same amount of energy as 50,000 homes.[8] This demand has real-world consequences: Prince William County, VA saw a rise of 19% of GHGs emissions between 2005 to 2018, a time-period that matches the data center expansion increase in the county.[9] Maryland has the opportunity to not repeat the mistakes made in Virginia by **not approving SB474**.

Data centers decimate our rural and natural lands

As seen in various data center locations across Northern Virginia, most data centers are sited away from urban locations, causing sprawl and destruction of our rural and natural lands.[10]

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[6] Data Centers Are Booming. Dec 2023. Available at: https://energyathaas.wordpress.com/2023/10/09/data-centers-are-booming/
[7] Fairfax, Loudoun, and Prince William Air Quality in Jeopardy. Feb 2023. Available at: https://www.pecva.org/region/loudoun/fairfax-loudoun-and-prince-william-air-quality-in-jeopardy/
[8] The Staggering Ecological Impacts of Computation and the Cloud. Available at: https://thereader.mitpress.mit.edu/the-staggering-ecological-impacts-of-computation-and-the-cloud/
[9] METROPOLITAN WASHINGTON CLIMATE PLANNING. June 2022. Page 19. Available at: https://www.pwcva.gov/assets/202206/Climate%20Planning%20Presentation%20for%20PWC%20EC.pdf
[10] Data centers may be nearing tipping point in Northern Virginia. June 2023. Available at: https://www.bayjournal.com/news/growth_conservation/data-centers-may-be-nearing-tipping-point-in-northern-virginia/article_16c6281e-fff2-11ed-987c-07e765e5f710.html

Data centers cause irreplaceable damage to the holistic ecological health of our state and residents' health and wellbeing. [11,12]

Data Centers increase water consumption and stormwater run-off

Data centers have a significant impact on water supply due to its water consumption for cooling needs. A data center may use, on average, five million gallons of water per day to cool off its machinery.[13] Water withdrawal for data centers have consequences for our residents and for our aquifers and waterways. Data centers also increase pollution in our waterways. When we decimate forests and good agricultural land in increases in impervious surfaces brought by large data center developments, associated increase in stormwater and water pollutants will negatively impact nearby creeks, streams, rivers and, eventually, the Chesapeake Bay. A 2022 study done by NPCA in Virginia on the impact of data centers to local waterways found that tons of sediment and stormwater would be discharged into local waterways and stormwater, putting people and wildlife in danger.[14] From the water consumption and from the water discharge side, data centers will dry up and pollute our water resources.

A Maryland based Data Center study is needed

Maryland needs to carefully review data center construction proposals. An environmental impact study will ensure that we consider the potential impacts holistically, and not just project by project. The study must include the impact of data centers on their energy and water

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[11] 'Constant thudding': Noise from Jiffy Lube music venue frustrates nearby residents. August 2023. Available: https://www.nbcwashington.com/news/local/northern-virginia/constant-thudding-noise-from-jiffy-lube-music-venue-frustrates-nearby-residents/3402803/
[12] HB0723 / CH0541 - Natural Resources – Forest Preservation and Retention. Available at: https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/HB0723?ys=2023RS
[13] Data Centers. Nature Forward. 2024. https://natureforward.org/2024-va-ga-introduction/
[14] New Report Finds Proposed Data Centers in Northern Virginia Threaten National Parks, Drinking Water. 2022. Available at: https://www.npca.org/articles/3153-new-report-finds-proposed-data-centers-in-northern-virginia-threaten

consumption, do a comprehensive environmental justice study, evaluate noise impact, grid capacity, and conduct a thorough cost analysis. Furthermore, if Maryland wants to continue to be a region's leader in climate change, it must opt into better and more sustainable practices, such as those recently passed in the European Union (EU) on data centers. [15]

Under our current public health, economic, and social crises, it simply does not make sense to add more air and water pollution by building data centers without restrictions in Maryland. On behalf of Nature Forward and our 28,000 members and supporters, **we ask the Committee to OPPOSE and not pass SB474.** Thank you for your time and consideration.

Sincerely,

Lydia Lawrence

Director of Conservation

Nature Forward

Denisse Guitarra

MD Conservation Advocate

Nature Forward

Renee Grebe

Northern Virginia Conservation Advocate

Nature Forward

[15] The EU Code of Conduct for Data Centres – towards more innovative, sustainable, and secure data centre facilities. 2023. Available at: https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/eu-code-conduct-data-centres-towards-more-innovative-sustainable-and-secure-data-centre-facilities-2023-09-05_en

SB474_Ballard.pdf
Uploaded by: James Ballard
Position: UNF

Committee: **Economic Matters**
Testimony on: **SB474 - Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)**
Submitting: **James S. Ballard, Retired PE and FERC Electrical Engineering Subject Matter Expert**
Position: **Opposed**
Hearing Date: **February 22, 2024**

Dear Chair and Committee Members:

Thank you for allowing my testimony today in opposition to SB474.

SB474 alters and establishes the definition of "generating station" for the purpose of exempting the construction of certain generating facilities used to produce electricity for the purpose of onsite emergency backup and certain test and maintenance operations from the requirement to obtain a certificate of public convenience and necessity or certain other related approvals under certain circumstances; and generally relating to generating stations.

Enactment of SB474 will spur the transfer of Maryland wealth to surrounding PJM States' Investor Owned Utilities of approximately $1,500,000,000 per year related to data center development increased electric transmission and generation costs. Enactment of SB474 will cause Maryland and its newly developed data centers to forgo the opportunity to collect approximately $23,000,000 a year from the PJM Capacity Market. This is just related to the first 1500 MW of data center development at the Adamstown MD, Quantum Loophole Campus, which is now expected to demand 5000 MW or more by 2033 (equal to almost all of PEPCO – Montgomery, Prince George's Counties and the District of Columbia). So the expected transfer of wealth from Maryland will likely triple my current estimate by 2033.

Enactment of SB474 will double the expected greenhouse gas emissions caused by Western Maryland Potomac Edison electrical load by 2028. Maryland should expect the related greenhouse gas emissions to quintuple by 2033 with enactment of SB474. Note that Western Maryland is primarily powered by West Virginia coal fired power plants. Hydro, coal and nuclear power baseload capacity powers data centers, because they are baseload. Baseload is the electrical load that is always present, even during minimum grid load conditions. It is economically impracticable to plan to power data centers from any other type of primary power source but baseload capacity.

Enactment of SB474 will lead to electrical grid reliability problems and continuously cause Maryland power import facilities to overload in PJM's planning models and cause electrical rates to increase uncontrollably to Marylanders.

I base my SB474 impact analysis on considered electric power engineering and engineering economic evaluation of:

https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20230110/item-06---reliability-analysis-update.ashx

https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20230110/item-04---data-center-load-planning.ashx

https://mgaleg.maryland.gov/mgawebsite/Committees/Media/false?cmte=eee&clip=EHE_1_31_2023_meeting_1&ys=2023rs

https://www.datacenterdynamics.com/en/analysis/quantum-loophole-heads-out-of-virginia-and-into-maryland/

https://wired.pjm.com/-/media/library/reports-notices/state-specific-reports/2022/2022-maryland-dc-state-infrastructure-report.ashx

https://www.pjm.com/-/media/library/reports-notices/state-specific-reports/2022/2022-west-virginia-state-infrastructure-report.ashx

https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20231031/20231031-item-15---reliability-analysis-update.ashx

https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20231205/20231205-2022-rtep-window-3-reliability-analysis-report.ashx

https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20231205/20231205-2022-rtep-window-3-constructability--financial-analysis-report.ashx

https://www.pjm.com/-/media/committees-groups/committees/teac/2023/20231205/20231205-pjm-teac-board-whitepaper-december-2023.ashx

https://www.pjm.com/-/media/committees-groups/committees/teac/2024/20240206/20240206-item-03---market-efficiency-update.ashx

Why should you listen to me and not your aspirational climate change and Maryland productivity consciences and not your data center and investor owned utility lobbyists?

My only advocacy is for good decision making that causes the least self-harm to the decision makers and their constituents. Professional engineers should not advocate anything else but good decision making. I used to be the US Navy's fleet-wide ship design electrical safety engineer. Reading reports of electrocuted sailors is not fun, but it is a life mission maker. For most of my career, I was not in the business of making profit at others' expense. My FERC mission was always to protect mom and pop ratepayers by helping decision makers make prudent decisions.

I retired from FERC in April, 2016. My last filed FERC testimony (including a description of my qualifications and work history), Bonneville Power Administration V. Pacificorp, EL15-13, is here (Generate PDF to read entire document at the links when using accession number file access):

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20160115-5423&optimized=false

Exhibit No. S-5 (List of Cases in Which James Ballard Has Testified) under EL15-13

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20160115-5467&optimized=false

My most interesting and perhaps relevant case to this committee was NorthWestern Corporation v. FERC, ER10-1138, where I analyzed the physical and economic impacts of integrating newly developed wind generation with the Montana electric grid.

My supplemental answering testimony is here:

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20120924-0484&optimized=false

The initial Administrative Law Judge decision is here:

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20120921-3030&optimized=false

The Commission Opinion No. 530 - Order affirming the initial decision is here:

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20140417-3015&optimized=false

The Certified Index to Record (U.S. Court of Appeals, District of Columbia) is here:

https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20160722-0028&optimized=false

The full list of public documents in NorthWestern Corporation v. FERC under ER10-1138 can be found here:

https://elibrary.ferc.gov/eLibrary/search?q=searchText%3D*%26searchFullText%3Dtrue%26searchDescription%3Dtrue%26dateType%3Dfiled_date%26relativeDateType%3Dcustom%26date%3D2009-01-01--2024-02-20%26docketNumber%3Der10-1138%26subDocketNumbers%3D%26eFiling%3Dfalse%26allDates%3Dfalse%26dateRange%3Dcustom

Testimony in opposition to SB474.pdf
Uploaded by: Jerry Kickenson
Position: UNF

Testimony in opposition to SB474
Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)
To: Hon. Brian Feldman, Chair, Hon. Cheryl Kagan, Vice-chair and members of the Senate Education, Energy and the Environment Committee
From: Jerry Kickenson
Date: February 20, 2024

I am writing in **opposition to Senate Bill 474**, **Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024).**

This bill will allow Maryland to add more data centers more easily by removing the requirement that the Public Service Commission (PSC) review all backup generator power facilities for these centers.

Privately funded and run data centers do not need any special exemptions! Data centers cause significant loss of tree canopy, increased impervious surface and stormwater runoff, significant water consumption, and significantly increased energy consumption. Environmental harms do not merit exemptions from PSC reviews. At a time when our regional transmission operator PJM is planning additional charges (perhaps as much as $250 million per year) to Maryland ratepayers because we are rightly closing fossil fuel fired generating stations, we certainly should not be encouraging significant additional energy consumption beyond what the standard processes would normally call for.

In return for environmental harms and private corporate benefit, data centers offer limited public benefits. Once construction is complete, a large data center like those operated by Microsoft or Amazon employ only about 50 staff, with smaller centers only 5 - 30. And the trend is lower levels of permanent employment, as increased automation (which I personally worked on in my career in information technology) and artificial intelligence displace more jobs. Indirect employment for those few data center workers is consequently also small. After one time construction and equipment sales and use taxes (which in many cases Maryland will exempt data centers from under existing law), ongoing taxes (mostly property) are low or even zero in some counties and municipalities. Where is the rationale to offer more exemptions to data centers?

I respectfully urge you to reach an **unfavorable** report for SB474.

Respectfully yours,
Jerry Kickenson
1701 Ladd Street
Silver Spring, MD 20902

SB474_MDSierraClub_Opp 22February 2024.pdf
Uploaded by: Josh Tulkin
Position: UNF

P.O. Box 278
Riverdale, MD 20738

Committee: Education, Energy, and the Environment

Testimony on: SB 474 "Certificate of Public Convenience and Necessity and Related Approvals - Definition of Generating Station (Critical Infrastructure Streamlining Act of 2024)"

Position: Oppose

Hearing Date: February 22, 2024

The Maryland Chapter of the Sierra Club opposes SB 474, the Critical Infrastructure Streamlining Act of 2024. The Act would update the definition of "generating station" to exempt certain generating facilities, including diesel generators, from the Certificate of Public Convenience and Necessity (CPCN) permitting process.

In Maryland, like most states, electric generators over a certain size must apply and secure the CPCN permit. Recognizing that these facilities have an impact on our environment, our communities, and the electric grid, the CPCN process provides a critical moment for public input and regulatory review. SB 474 would exempt large backup generator systems most often associated with data centers.

Sierra Club recognizes that the growing data center industry provides an opportunity for economic growth in Maryland, and welcomes a conversation on the appropriate regulatory design to facilitate sustainable development. However, we believe wholesale repeal of an important regulatory process would be harmful and set a bad precedent.

The CPCN Provides Important Environmental Regulation

Before building a large electric generating facility or transmission line, a company must apply for a CPCN permit. This is the process – for power generation and transmission – by which the PSC carries out its charge to ensure that projects comply with Maryland law. The PSC noted that the CPCN is a process for *"evaluating the effects of proposed power generation facilities on surrounding communities, involving—among other things—the notification of specified stakeholders, the holding of public hearings, the consideration of recommendations by State and local government entities, and the consideration of the project's effects on various aspects of the State infrastructure, economy and environment."*[1]

[1] PSC Order 90830 Provisional order Granting in Part and Denying in part Applicant's Request for Rehearing, Oct 10, 2023.

The CPCN does include some broad exemptions. Projects under 2 MW, or under 70 MW if 80% of energy is consumed on site, are granted exemptions. It should be noted that backup systems for other facilities, such as hospitals, will come nowhere close to 70 MW. That scale of use would only be seen at large industrial energy consumers like data centers.

In 2023, the Maryland PSC, in a 5-0 decision, issued a prudent refusal to exempt the proposed Aligned data center project from the CPCN process. The Aligned data center project proposed procuring 504 MW of diesel generators,[2] enough power for approximately half a million homes.[3] It is appropriate for power generation at this scale, whether to serve the grid or as backup, to engage in the CPCN process.

Diesel power generators, at the scale proposed by Aligned, will have an impact on air quality in the communities where they are located, and those communities deserve a say in their future. Diesel generators emit particulate matter and nitrogen oxides. These pollutants can cause and exacerbate lung conditions and form ozone,[4] which is described by the American Lung Association as "one of the most dangerous and widespread pollutants in the U.S."[5]

Backup generators are allowed to operate up to 100 hours a year for testing and maintenance.[6] So it is prudent to ask what the environmental impact will be to run 168 diesel generators for 100 hours each year. This is equivalent to two of the 3MW diesel generators running continuously 24/7.

Data Centers Pose A Challenges for Maryland's Climate Goals

Data centers' energy use more generally poses tremendous ramifications for Maryland's ability to meet its statutory mandates under the Climate Solutions Now Act—which requires a 60% reduction in greenhouse gas emissions by 2031 and net-zero carbon emissions by 2045[7]—while also threatening Governor Moore's ambition of ensuring that "Maryland generates 100% clean energy by 2035."[8] This is particularly true because the data center industry is rapidly growing

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[2] *See* Md. Pub. Serv. Comm'n, Maillog No. 302893, *CPCN Exemption Request – Aligned IAD04 Data Center* (filed May 12, 2023).
[3] *See* PJM, *PJM Glossary*, https://www.pjm.com/Glossary.aspx?p=1#:~:text=PJM%20has%20a%20diverse%20generation,such%20as%20wind%20and%20solar.&text=A%20gigawatt%20is%20a%20unit,800%2C000%20and%20one%20million%20homes.
[4] *See* Clean Air Northeast, *Diesel 101*, https://cleanairnortheast.epa.gov/diesel101.html#:~:text=Diesel%20engines%20in%20trucks%2C%20buses,millions%20of%20residents%20are%20affected.
[5] American Lung Association, *Ozone*, https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/ozone.
[6] https://mde.maryland.gov/programs/permits/AirManagementPermits/Documents/Emergency%20Generator%20General%20Permit.pdf
[7] Md. S.B. 528 (2022).
[8] *See* Wes Moore for Maryland, *Maryland's Climate, Our Economic Future*, https://wesmoore.com/issues/climate/.

and will drive unprecedented increases in electricity demand. While data centers currently use approximately 9.7 GW of power nationally, their demand for electricity is expected to triple to 27 GW in the next few years.[9] In other words, the energy needs of data centers are likely to reach and soon surpass the entire quantity of offshore wind that the Biden Administration aims to install nationally.[10] In Virginia, Dominion Energy is seeking to build significant gas capacity in the near future to meet a 10 GW growth in projected energy demand, due to data centers, by 2035.[11]

Maryland should establish and affirm clear regulatory safeguards to regulate the growth and impact of this rapidly growing industry. Maryland has the chance to get it right from the start, rather than playing catchup like neighboring Virginia, which is facing the prospect of skyrocketing electricity rates, new power plants, and massive public unrest.

We urge the Moore Administration to work with the General Assembly to bring the data center industry to the state in a way that advances both the state's and the industry's climate and environmental justice goals. Data center leaders are looking for opportunities to site data centers in regulatory environments that are welcoming and help them achieve their own sustainability objectives.

As the Moore Administration and the General Assembly consider incentivizing data centers, we offer these overarching principles that we believe could facilitate data center growth in a way that is more consistent with Maryland's climate goals.

Maryland should:

- Ensure that data centers procure additional (net-new) local renewable energy and storage that meets the energy and capacity requirements of their facilities during all hours, including at peak demand;
- Develop energy efficiency standards for data centers' operations, requiring them to attain a power usage effectiveness (PUE) score no higher than 1.2; and
- As technologically feasible, preclude fossil fuel backup generation for data centers, including diesel backup generators (which would collectively lead to unhealthy air during adverse power conditions), and require data centers to be equipped with clean backup sources of power, such as battery storage, fuel cells utilizing green hydrogen, or onsite generation.

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[9] *See* Cushman & Wakefield, *Americas Data Center Update* (Oct. 2023), https://cw-gbl-gws-prod.azureedge.net/-/media/cw/global/insights/2023/americas-oct-2023-data-center-update.pdf?rev=6999a6eb9c364977b49720739abaf564.

[10] https://www.whitehouse.gov/briefing-room/statements-releases/2023/09/21/fact-sheet-biden-harris-administration-advances-offshore-wind-transmission-strengthens-regional-supply-chain-buildout-and-drives-innovation/

[11] Dominion Energy, *Economic Development*, https://economicdevelopment.dominionenergy.com/va/key-industries/data-centers/.

The Maryland Chapter of the Sierra Club urges an unfavorable report on SB 474. We welcome a larger conversation on how to best incentivize and properly regulate data centers, but given the potential impacts, a full-scale exemption from an important regulatory process is not the right approach.

Mariah Shriner
Climate Campaign Representative
Mariah.Shriner@MDSierra.org

Josh Tulkin
Chapter Director
Josh.Tulkin@MDSierra.org

2024_Data Centers Study Resolution_JLARC_VA.pdf
Uploaded by: Kyle Hart
Position: UNF

JLARC
JOINT LEGISLATIVE AUDIT AND REVIEW COMMISSION

Study Resolution

Data Centers

Authorized by the Commission on December 11, 2023

WHEREAS, there has been substantial growth in the data center industry in Virginia, particularly Northern Virginia which has the largest concentration of data centers in the world, Southern Virginia, the Greater Fredericksburg region, and the Greater Richmond region; and

WHEREAS, growth in the data center industry is expected to continue with increasing demand from deployment of advanced and innovative technologies used by individuals, business of all sizes across all industries, government agencies, and other organizations that require the digital infrastructure that data centers provide; and

WHEREAS, data centers can bring economic benefits to localities because they can create significant economic activity during construction, they can increase property tax revenue for local governments without placing high demands on government services like schools, and the clustering of data centers can make a region more attractive to other high tech businesses and help support ecosystems of vendors, service providers, and suppliers; and

WHEREAS, concerns exist over data centers because they require large amounts of energy, which can affect the broader energy market; they may have impacts on natural, historical, and cultural resources; and some citizens have expressed opposition to having data centers located near residential areas due to concerns over issues such as noise and the adverse visual impact: and

WHEREAS, the data center sales tax exemption is Virginia's largest economic development incentive, and JLARC conducted an in-depth review of the exemption in 2019; now, therefore, be it

RESOLVED by the Joint Legislative Audit and Review Commission that staff be directed to review the overall impacts of the data center industry in Virginia and state and local policies regarding the industry. In conducting its study staff shall (i) research recent and expected trends in factors impacting data center industry growth and forecast future growth of Virginia's data center industry, taking into account how various factors may affect these projections; (ii) assess impacts of the data center industry on Virginia's natural resources, as well as historic and cultural resources, and identify potential technologies that could reduce their impacts on these resources; (iii) assess the impacts of the data center industry on current and forecasted energy demand and supply in Virginia, including how data centers will likely affect future energy infrastructure needs, energy rates paid by customer classes and whether cost allocation methods ensure no single customer class is unreasonably subsidized by other customer classes, and the state's ability to transition from fossil fuels to renewable energy sources; (iv) estimate the impact of the data center industry on local revenue and assess how local tax policies may affect data centers; (v) identify how data centers may impact local residents, including concerns such as noise pollution, decreasing property values, and the adverse visual impact; (vi) identify considerations around the construction and siting of data centers, and review how zoning and regulatory restrictions and requirements can affect data center deployment; (vii) identify guidance and assistance state agencies could provide to local governments for use in making decisions about the location and expansion of data centers; (viii) assess whether more geographically diverse data center industry growth would provide greater economic benefits to the

Commonwealth, and if so, identify obstacles to attracting data centers to other areas, particularly economically distressed or rural regions of the state, and policy changes that could increase geographic diversity, such as changes in electricity policy, tax policy, and broadband infrastructure policy; (ix) compare Virginia's competitiveness in attracting data centers with other states; and (x) determine if Virginia's data center tax exemption could be improved, including whether the exemption could be better targeted, the level of benefit is appropriate given the cost, or other changes should be considered.

JLARC may make recommendations as necessary and may review other issues as warranted.

All agencies of the Commonwealth, including the Virginia Department of Energy, the Virginia Department of Environmental Quality, the State Corporation Commission, the Virginia Economic Development Partnership Authority, the Virginia Department of Taxation, and Virginia local governments shall provide assistance, information, and data to JLARC for this study, upon request. JLARC may use consultants as necessary to complete the study. JLARC staff shall have access to all information in the possession of agencies pursuant to § 30-59 and § 30-69 of the Code of Virginia. No provision of the Code of Virginia shall be interpreted as limiting or restricting the access of JLARC staff to information pursuant to its statutory authority.

SB0474_Critical Infrastructure Act_EEE_CJW UNFAVOR
Uploaded by: Laurie McGilvray
Position: UNF

Committee: Education, Energy and the Environment
Testimony on: SB0474 - Critical Infrastructure Streamlining Act
Organization: Maryland Legislative Coalition Climate Justice Wing
Submitting: Dave Arndt, Co-Chair
Position: Unfavorable
Hearing Date: February 22, 2024

Dear Chair and Committee Members:

We submit our testimony today in opposition to SB0474. The Maryland Legislative Coalition Climate Justice Wing, a statewide coalition of nearly 30 grassroots and professional organizations, urges you to vote **unfavorably** on SB0474.

SB0474 would result in exempting diesel and other fossil fuel backup generators and other potential greenhouse gas impacts from being reviewed by the Maryland Public Service Commission (PSC) for a Certificate of Public Convenience and Necessity (CPCN). As Maryland shifts to clean energy to achieve its urgent climate goals, it would be a major step in the wrong direction.

Broad Concerns of the Act

This bill is a direct response to the PSC's recent decision to deny a CPCN exemption for a data center development last year. They did so based on the project's climate implications and air pollution from over 160 3-megawaI diesel generators required to run continuously, should there be loss of power due to weather or other events. The PSC did not pull the plug on the Aligned Data Centers. Aligned Data Centers refused to present a solution to meet Maryland's greenhouse gas emission reduction targets. Aligned Data Centers asserted that diesel generators were the only option to provide backup power. A simple search of the internet shows many alternatives including battery storage and power generator systems using methane. They chose their profits over the needs of Maryland.

Greenhouse Gas Emission Impacts

This bill prevents the consideration of greenhouse gas emissions during periods of peak energy use. Generally, summertime usage is when pollution loads are highest already. CPCN is an important management tool in considering this condition. Furthermore, SB0474 has no provisions to incentivize new energy generation technologies that don't rely on fossil fuels in order to help MD reach its GHG emissions goals. In addition, the bill includes a broad range of

high-energy consumption facilities such as crypto currency operations and cannabis farms, which increase the negative impacts of the CPCN exemption.

Health Impacts

With the scale of data centers, even running diesel generators for only maintenance hours would cause significant pollution. Diesel generators emit a large quantity of PM2.5, which the EPA has clearly stated that this level of PM2.5 is not save to breathe. In fact, recent research has shown a link between tiny airborne particulate matter (i.e., PM2.5) that acts as an irritant and causes inflammation and lung cancers among non-smokers.

Cumulative Impacts

MDE doesn't look holistically at complexes, but at individual generator systems, one at a time. Aligned's plans for their site included four large data centers, not just the one they proposed and have now refused to build. Passing enforcement to MDE would only allow for individual project review and not a review of the cumulative impacts of multiple data centers in a complex, since current MDE regulations do not include analysis of cumulative effects.

Community Engagement

The CPCN is a well-established process that allows for appropriate public engagement and can ensure that siting decisions do not disproportionately impact the environment of certain communities, particularly historically impacted communities due to race, color, national origin, or income status. Eliminating the CPCN process would curtail community engagement and notification. Also, the CPCN process allows for an evidentiary process to determine alternatives.

While we opposed passage of SB0474, we offer the following amendments, which would mitigate some of the impacts of the bill should it pass.

Proposed areas of amendments:

1. Limit use of back-up generators to ONLY maintenance (1 hour every month) and power outage from the grid. Current law allows for backup generators to be used for as many as 50 hours of non-emergency use. The bill does not specify what an outage is, and the operator could use generators if they don't like the price of grid electricity
2. Require annual reporting of diesel generator usage by all high-energy facilities.
3. Require a delayed implementation of legislation, pending study by PSC of likely impact of the legislation, including mitigation recommendations – study due by July 1, 2025. The study should include:
    a. impact of high-energy use facilities more broadly, not just impact of legislation on
        i. Energy consumption
        ii. Water consumption
        iii. Environmental Justice Review
        iv. Land use and sitting considerations

v. Noise
vi. Who is paying for the increased energy costs
vii. Impacts on climate goals
viii. Grid Capacity
ix. Recommendations for best practices (other clean backup options and power generation)
x. Storage of diesel fuel
xi. Recommendations for guardrails to be put in statute before implementation

4. Include a sunset for legislation to recognize technological advances – 2029.
5. Narrow the definition of 'critical infrastructure' included in the bill to only apply to critical data centers.
6. Require critical infrastructure facilities to give notice to the surrounding community that it will be seeking air permits from MDE with information on how they can participate (1 mile away except for rural areas which would be 3 miles away).
7. Require the facilities to retire two times the equivalent of solar wind or geothermal RECS of emissions created by back-up generators if using fossil fuels.
8. Exempt only non-fossil fuel back-up generators.
9. Restrict construction of data center within ½ mile of a National Park, state park, school or site of special historic significance.

The CPCN process is a well-established and clear process that allows for appropriate public involvement in projects of the size proposed by the data centers and should be retained for this new industry. We respectfully and strongly request an **UNFAVORABLE** report from this Committee on SB0474.

350MoCo
Adat Shalom Climate Action
Cedar Lane Unitarian Universalist Church Environmental Justice Ministry
Chesapeake Earth Holders
Chesapeake Physicians for Social Responsibility
Climate Parents of Prince George's
Climate Reality Project
ClimateXChange – Rebuild Maryland Coalition
Coming Clean Network, Union of Concerned Scientists
DoTheMostGood Montgomery County
Echotopia
Elders Climate Action
Fix Maryland Rail
Glen Echo Heights Mobilization
Greenbelt Climate Action Network
HoCoClimateAction
IndivisibleHoCoMD
Maryland Legislative Coalition

Mobilize Frederick
Montgomery County Faith Alliance for Climate Solutions
Montgomery Countryside Alliance
Mountain Maryland Movement
Nuclear Information & Resource Service
Progressive Maryland
Safe & Healthy Playing Fields
Takoma Park Mobilization Environment Committee
The Climate Mobilization MoCo Chapter
Unitarian Universalist Legislative Ministry of Maryland
WISE

House Bill 579.pdf
Uploaded by: Roberta Huber
Position: UNF

I urge you to vote against House Bill 579. The current Certificate of Public Convenience and Necessity (CPCN) process is working so, why fix it. When the Public Service Commission (PSC) reviewed the Aligned request for the data center on the old Alcoa site in Frederick County, they disagreed with the Aligned estimate of 168 - 3 megawatt generators producing 504 megawatts of power. The aligned request was denied by the PSC.

Quantum Loophole, the site developer has now raised that number at buildout to be 1000 diesel generators creating up to 3000 megawatts of power. If we did not have the PSC to protect us, we would have just gone along with the faulty estimate that was one sixth of the current estimate. The PSC is protecting the citizens of Maryland. We need their expertise to protect us from being taken advantage of.

I also urge you to create a state-level working group to take a comprehensive look at data centers - to include, land use, water and power use, environmental issues and a thorough cost-benefit analysis that includes all primary and secondary costs.

Unfavorable-SB474 Critical Infrastructure Streamli
Uploaded by: Robin Broder
Position: UNF

SB474: Critical Infrastructure Streamlining Act
Position: Unfavorable
Date: February 21, 2024

To Chair Feldman and members of the Committee:

Waterkeepers Chesapeake requests an UNFAVORABLE report of SB474: Critical Infrastructure Streamlining Act, from the Education, Energy & Environment Committee.

As proposed, SB474 would result in exempting data center diesel backup generators and the potential impacts from being reviewed by the Maryland Public Service Commission for a Certificate of Public Convenience and Necessity (CPCN). As Maryland shifts to clean energy to achieve its urgent climate goals, it would be a major step in the wrong direction to exempt large numbers of diesel generators that can produce amounts of electricity and pollution equivalent to many regional power plants.

Maryland has an opportunity now to develop a comprehensive and common-sense approach to the development of data centers in this state. Maryland should not be regulating data centers in a piecemeal fashion as demonstrated by this bill. We call on this administration to create best practices and guardrails before there is an explosion of data centers in Maryland. Maryland should work with the PSC to create a plan that takes into account these issues, among many others:

- Energy consumption
- Water consumption
- Backup generators
- Environmental justice review
- Siting and land use considerations
- Noise mitigation
- Impacts on climate goals
- Increased energy costs
- Grid capacity
- Public notice and participation

When the Maryland Public Service Commission denied an exemption to a data center development last year, they did so based on its climate implications and air pollution from over 160 3-megawatt diesel generators required to run continuously should there be loss of power due to weather or other events. A significant number of these generators would also run a large number of days for non-emergency maintenance and other reasons.

We are concerned by the bill's sweeping exemptions. As written, all backup diesel generators, of any size, in any quantity, anywhere in Maryland would be exempt from the CPCN process. The technical expertise and judicial role of the Public Service Commission would have no influence in these potentially massive generator projects.

Exempting from the CPCN process power plant-sized complexes of diesel generators without opportunity for substantive public involvement would set a bad precedent. This is a significant concern, as for example, just at the Quantum Loophole site in Adamstown, over 1000 generators are expected to provide a total of 2.4 gigawatts of energy. That is enough energy to power 600,000 new homes, roughly two times the number of housing units in Baltimore. In addition, this data center complex would consume massive amounts of water.

The Public Service Commission, through the CPCN process, is tasked with addressing Environmental Justice and Energy Equity issues. Under the terms of SB474 the PSC would no longer use its regulatory authority to ensure that siting decisions do not disproportionately impact the environment of certain communities in light of the community's race, color, national origin, or income status.

Until a comprehensive plan for data center developments is created, the CPCN process should not be side stepped and ignored, as proposed in this bill. The CPCN process is a well-established and clear process that allows for appropriate public involvement in projects of the size proposed by the data centers and should be retained for this new industry. We respectfully request an UNFAVORABLE report from this Committee on SB474.

Respectfully submitted,

Robin Broder
Deputy Director
Waterkeepers Chesapeake
https://waterkeeperschesapeake.org

SB0474_Infrastructure_ClimateCC-Oppose.pdf
Uploaded by: Sonia Demiray
Position: UNF

Testimony SB0474- Critical Infrastructure Streamlining Act of 2024

Position: OPPOSED

February 22, 2024

My name is Sonia Demiray, I am the co-founder of the Climate Communications Coalition, a member of the Mid-Atlantic Justice Coalition, and a resident of Frederick County.

The Public Service Commission ("PSC") was established in 1910 to regulate, amongst other categories: electric utilities, gas utilities, in addition to the construction of generating stations. It does not, in this definition, exclude generating stations that would be used for backup power or testing. To remove the PSC from its legal oversight of generator systems of any size is for this reason unacceptable. The PSC's charge includes collecting and maintaining records and reports of any public service company, review plans for service, inspect equipment, audit financial records, handle consumer complaints, and promulgate and enforce rules and regulations. If we remove the PSC from the oversight of generating systems that have the potential of enormous pollution, what recourse will Marylanders have?

Worse, to remove backup generation of any size from Maryland's environmental laws and environmental goals during a worsening climate crisis, is a big mistake. Marylanders are already suffering from climate change and aberrant weather patterns including flooding and extreme heat. While it is key to reduce the effects of existing pollution by protecting natural Carbon Capture and Storage Systems, such as our mature forests, it is even more important to refrain from putting into place new sources of emissions and additional pollution. Nobody should have the right to circumvent, or even sabotage, this enormous effort that we, as a Maryland Community and beyond, are engaging in.

Companies that wish to get established in Maryland today, should be required to provide plans on how they generate enough energy to conduct their business with 100% clean generation means – which, to be clear, includes solar, wind, and geothermal.

Thank you.

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SugarloafSB474OPPOSE.pdf
Uploaded by: Stephen Black
Position: UNF

SB 474: Critical Infrastructure Streamlining Act

Position: OPPOSE

Date: February 22, 2024

Contact: Steve Black, Sugarloaf Alliance

Our organizations request an **UNFAVORABLE** report of SB 474: Critical Infrastructure Streamlining Act, from the Education, Energy, and Environment Committee.

As proposed, SB 474 would result in exempting data center diesel backup from being reviewed by the Maryland Public Service Commission for a Certificate of Public Convenience and Necessity (CPCN). As Maryland shifts to clean energy to achieve its urgent climate goals, it would be a major step in the wrong direction to exempt large numbers of diesel generators that can produce amounts of electricity and pollution equivalent to many regional power plants.

When the Maryland Public Service Commission denied an exemption to a data center development last year, they did so based on its climate implications and air pollution from over 160 3-megawatt diesel generators required to run continuously, should there be loss of power due to weather or other events.

We are concerned by the bill's sweeping exemptions. As written, all backup diesel generators, of ***any size***, in ***any quantity***, ***anywhere*** in Maryland would be exempt from the CPCN process. The technical expertise and judicial role of the Public Service Commission would have no influence in these potentially massive generator projects.

We also worry about the precedent that could be set by exempting from the CPCN process power plant-sized complexes of diesel generators without opportunity for substantive public involvement. This is a significant concern, as for example, just at the Quantum Loophole site in Adamstown, over 1000 generators are expected to provide a total of 2.4 gigawatts of energy. That is enough energy to power 600,000 new homes, roughly two times the number of housing units in Baltimore.

The Public Service Commission, through the CPCN process, is also tasked with addressing Environmental Justice and Energy Equity issues. Under the terms of SB 474 the PSC would no longer use its regulatory authority to ensure that siting decisions do not disproportionately impact the environment of certain communities in light of the community's race, color, national origin, or income status.

The CPCN process is a well-established and clear process that allows for appropriate public involvement in projects of the size proposed by the data centers and should be retained for this new industry. We respectfully request an **UNFAVORABLE** report from this Committee on SB 474.

Respectfully submitted,

Karen Metchis
Ask the Climate Question (ACQ)

Caroline Taylor
Executive Director
Montgomery Countryside Alliance

Elizabeth Bauer
Board Chair
Envision Frederick County

Susan Hanson
Friends of Rural Roads

Anna Mudd
Senior Policy Director
Potomac Conservancy

Sonia Demiray
Founder
Climate Communications Coalition

Matt Stegman
MD Staff Attorney
Chesapeake Bay Foundation

Steven Findlay
President
Sugarloaf Citizens Association

Karen Cannon
Executive Director
Mobilize Frederick

Edward Stierli
Mid-Atlantic Senior Regional Director
National Parks Conservation Association

Evan Isaacson
Senior Attorney, Director of Research
Chesapeake Legal Alliance

Dan Smith
President
Friends of Lower Beaverdam Creek

David Lillard
Executive director
Catoctin Land Trust

Judith Stribling
Policy Coordinator
Friends of the Nantioke River

Steve Black
President
Sugarloaf Alliance

Denisse Guitarra
MD Conservation Advocate
Nature Forward

Robin Broder
Deputy Director
Waterkeepers Chesapeake

Dave Arndt
Co-Chair
Maryland Legislative Coalition Climate Justice Wing

Liz Lamb
Community Farming Program Manager
The 6th Branch

Matthew Heim
Executive Director
Lower Shore Land Trust

Stu Simon
Co-Chair Advocacy
Montgomery County Faith Alliance for Climate Solution

Earthjustice SB 474 Comments.pdf
Uploaded by: Susan Miller
Position: UNF

EARTHJUSTICE

February 21, 2024

Chair Brian J. Feldman
Members of the Senate Education, Energy, and the Environment Committee

Re: Earthjustice **opposition** to SB 474:
Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station
(Critical Infrastructure Streamlining Act of 2024)

Earthjustice[1] opposes the passage of SB 474, the Critical Infrastructure Streamlining Act of 2024. As discussed below, the Public Service Commission's ("PSC") Certificate of Public Convenience and Necessity ("CPCN") and CPCN exemption processes provide important protections which will be lost if the bill is enacted. Moreover, the exception created by the bill is unnecessary for the vast majority of emergency backup generators, who can currently take advantage of the PSC's CPCN exemption process. Thus, only high energy use facilities will have a need to take advantage of the new exception and impact of these facilities (including their use of hundreds of MW of diesel-powered emergency backup generation) warrants scrutiny from the PSC. The bill has significant unintended consequences, not the least of which is the possible violation of a federal settlement. Earthjustice recommends that rather than address the myriad of issues surrounding the operations of high energy using entities (such as data centers, cannabis facilities and cryptocurrency operations) in a piecemeal fashion, the General Assembly should determine best practices in a comprehensive, cohesive manner.

I. BACKGROUND

a. The CPCN Process

The CPCN process is a nationally recognized, comprehensive process established pursuant to the Power Plant Siting and Research Act of 1971 (and subsequent revisions) for evaluating the effects of proposed power generation facilities on surrounding communities, involving— among other things—the notification of specified stakeholders, the holding of public hearings, the consideration of recommendations by State and local government entities, and the consideration of the project's effects on various aspects of the State infrastructure, economy, and environment.

[1] Earthjustice is a non-profit public interest environmental law organization that represents other non-profits free of charge.

Before taking final action on a CPCN application, the Commission must give due consideration to recommendations of the governing body of each county or municipality in which any portion of the project is proposed to be located and consider various aspects of the State infrastructure, economy, and environment. During the 2023 Legislative Session, the General Assembly enacted HB 692, granting counties and municipalities the authority to approve or deny any local permit required under a CPCN issued by the Commission, providing that a county or municipality must approve or deny such a permit within a reasonable time and in accordance with local laws, to the extent that local laws are not preempted by State law.

In the case of emergency backup generators, the CPCN process can be more streamlined, since the backup generators will not be grid-connected. However, that process still requires the applicant and the Power Plant Research Program ("PPRP") to consider alternatives. Although the impact of the generators on the stability and reliability of the electric system need not be examined in the way that would apply to the construction of new base load capacity, diesel generator fuel storage, waste disposal, air and noise quality issues still warrant review.

b. Generation Station Exemptions

In 2001, PUA § 7-207.1 was added to the CPCN statutory scheme. Subject to an opportunity for public comment and public hearing requirements, pursuant to PUA § 7-207.1(a)(1), the Commission may exempt from the PUA § 7-207 CPCN requirements construction of a generating station designed to provide on-site generated electricity if (1) the capacity of the generating station does not exceed 70 megawatts, and (2) the electricity that may be exported for sale from the generating station to the electric system is sold only on the wholesale market pursuant to an interconnection, operation, and maintenance agreement with the local electric company. The purpose of this alternate process is to facilitate and simplify regulatory approvals for these smaller generators.[2] As long as the applicant submits a completed application, with all required documentations, the approval process should take approximately 30 to 60 days to complete.

II. The CPCN process provides important protections which will be lost under SB 474

At the outset, it is important for the Committee to bear in mind that the *vast* majority of proposed emergency backup generators are not subject to the CPCN process. Only generators over 70 MW are required to obtain a CPCN. Hospitals, other medical facilities and almost every other entity relying on an emergency backup generator will only need a small generator (3MW-10MW) and would never need to seek approval for a generator over 70 MW. Thus, these entities can use the current CPCN exemption process and obtain the necessary exemption in a matter of a few months. Moreover, if the emergency backup generator is 2 MW or less (as many are) the

[2] Under COMAR 20.79.01.02B(23)(b), a generating unit less than or equal to 2 MW is not considered a generating station, and no CPCN exemption is required.

entity desiring to construct that generator need not apply to the PSC at all. Therefore, as a practical matter, SB 474 is creating an exception from the review process for high electricity using facilities, who are the only entities needing emergency generators of 70 MW or more.

Among other things, the CPCN regulations offer important protections to those Maryland residents living and working near the proposed emergency backup generator construction site. Pursuant to PSC regulations, the applicant is required to do an Environmental Justice screening and must send a letter notice of the filing of the application to all residential and business addresses within a 1-mile radius of the proposed facility site for an urban area, and within a 3-mile radius of the proposed facility site for a rural area, and the letter notification must include a variety of specific information including:

(1) A fact sheet on the filed application, including the applicant's name and website;
(2) The type of project to be constructed and its nameplate capacity;
(3) The project's location;
(4) The assigned case number;
(5) The location at which the public may physically review the application;
(6) The applicant's designated community liaison officer;
(8) The prehearing conference date;
(9) The deadline for filing petitions to intervene;
(10) A fact sheet concerning the Certificate of Public Convenience and Necessity process; and
(11) Information on how to access the applicant's EJSCREEN Reports[3]

The applicant is also required to designate a community liaison officer and hold at least one public meeting regarding the project.[4] These protections are lost for emergency backup generators under the bill. Importantly, the overall cumulative size of the high energy usage facilities backup generation will be equivalent to a utility scale generating station. Moreover, these emergency backup generators will not be limited to operating only during an "emergency".[5] Emergency backup generators need to be tested on a monthly basis. If, for example, the facility has 120 3 MW emergency backup generators, 4 emergency generators would need to be operated for at least an hour each day in order to ensure that all are tested every 30 days, affecting the community through diminished air quality and noise. The loss of participation in PSC's consideration of these projects is a significant impediment to transparency and residents' participation rights.

[3] See COMAR 20.79.02.02 D.
[4] See COMAR 20.79.01.04 B.
[5] Earthjustice notes that neither the term emergency nor critical infrastructure is defined in the bill.

The CPCN process is a one-stop shop. A variety of State agencies including Maryland Department of the Environment, Maryland Energy Administration, and Department of Natural Resources work together to present a comprehensive position on the applicant's request. As each agency considers whether to issue its permits separately, a holistic consideration of the project will be lost. Also lost will be the requirement that the applicant and the Power Plant Research Program ("PPRP") consider alternatives to the proposal. Not only will this comprehensive review be missing for large emergency backup generators, but interested stakeholders would be forced to participate in a number of proceedings before different state agencies rather than being able to conserve their time and resources through participation in the CPCN process.

Finally, the importance of an evidentiary process cannot be overstated. Applicants make a myriad of claims in their application which need to be examined by unbiased parties. For example, the applicant may claim that a diesel backup generator is the only type of emergency generation which will work for their facility. Given the impact of diesel generator use on air quality, and concerns regarding noise, diesel generator fuel storage, and waste disposal, the Commission and interested parties should be permitted to assess whether alternatives are available for some or all of the backup generation, as well as assess whether appropriate steps are being taken to protect the public during use of the backup generators.

III. SB 474 May Violate the Federal Settlement Reached Between the Commission, the U.S. Department of Transportation (DOT) and the U.S. Environmental Protection Agency (EPA)

As noted above, the CPCN process includes regulations designed to protect the residents in the surrounding community's right to participate in the CPCN proceeding. These regulations are the product of a complaint settlement. SB 474's circumvention of these rights may be viewed as violating the settlement agreement.

On June 14, 2016, the DOT and EPA received a complaint alleging that the public engagement process prior to the decision to issue a CPCN and the process to issue that CPCN was discriminatory under the Civil Rights Act of 1964 and Title VI of DOT's regulations. To resolve this complaint, the federal agencies, the PSC, MDE and DNR entered into a settlement agreement. The settlement required that for a fossil fuel generation facility over 70 MW, the PSC would adopt regulations providing for meaningful feedback from the community. These regulations are required to include a community liaison officer and at least one public meeting. The PSC codified the requirements at COMAR 20.79.02.02

Preventing surrounding communities from easily learning about the potential construction of hundreds of MW of diesel generation in their neighborhood as well as denying them a comprehensive process within which to voice their concerns certainly violates at least the spirit of the settlement agreement and raises significant environmental justice issues.

IV. The General Assembly Needs to Comprehensively Examine the Myriad of Issues Surrounding the Growth of High Energy Usage Facilities In Maryland

Maryland will potentially undergo a massive economic, technological, and environmental upheaval, all centered around the activities of a few high energy using facilities. The explosive growth of these facilities represents a major challenge to achieving the climate mandates set forth in Maryland law.

Virginia represents a cautionary tale regarding how **not** to introduce large-scale data centers into the State. As of late 2022, data centers in Virginia accounted for 20% of Dominion Energy's electricity sales and that demand growth is projected to more than double peak load by 2040. Disturbingly, Dominion is using this high load growth from data centers as the rationale for leaving in place existing fossil-fuel generation and to support its plans to construct a new gas-fired power plant. The sheer number and scale of Virginia data center proposals and the accumulation of so many data centers led to a severely constrained electric grid in Virginia and increased reliance on polluting backup diesel generators. Moreover, while many data centers make clean energy and sustainability commitments, there is no way to clearly evaluate these claims due to non-disclosure agreements and the general secrecy surrounding the industry.

On Dec. 11, 2023, Virginia authorized an extensive study into recent and expected trends within the data center industry and an assessment of impacts on Virginia's natural resources, historic and cultural resources, current and forecasted energy demand and supply, policies to transition from fossil fuels to renewable energy sources, and local residents (specifically noise pollution, decreasing property values, and adverse visual impact). The study would also estimate the impact of the data center industry on local revenue, identify siting considerations and guidance that state agencies could provide to local governments, and assess possible economic benefits of more geographically diverse data center industry growth. Sadly, for Virginia, this may be a case of closing the barn door after the horse has escaped. Maryland should not make the same mistake.

The General Assembly should resolve the issues concerning who is going to pay for the increased energy costs and what are the implications for Maryland's air quality, climate goals, water resources, health, and the environment prior to the construction of the high energy using facilities such as data centers, cannabis facilities and cryptocurrency operations. Like Virginia, Maryland should assess of impacts of these facilities on Maryland's natural resources, historic and cultural resources, current and forecasted energy demand and supply, policies to transition from fossil fuels to renewable energy sources, siting considerations and the impact on local residents (specifically noise pollution, decreasing property values, and adverse visual impact). Maryland must make a conscious decision regarding whether ratepayers will subsidize new transmission infrastructure and whether the public will be forced to compromise on Maryland's clean energy and conservation goals in order to meet the massive electricity demand caused by a few private industries.

Earthjustice strongly urges an **unfavorable** report for SB 474.

Thank you in advance for your support. Should you have any questions, please contact me at smiller@earthjustice.org.

Respectfully submitted,

Susan Stevens Miller
Senior Attorney, Clean Energy Program
Earthjustice

CCAN AF Informational Testimony on Critical Infras

Uploaded by: Ernesto Villasenor

Position: INFO

Committee:	**Education, Energy, and the Environment**
Testimony:	**Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station ("Critical Infrastructure Streamlining Act of 2024")**
Position:	**Informational Testimony**
Hearing Date:	**February 22, 2024**

Informational Testimony
Chesapeake Climate Action Network Action Fund

Data centers are a burgeoning industry with significant benefits in today's modern world and significant drawbacks. Thanks in part to tax incentives passed by Maryland legislators in 2020, data center operators are eyeing potential sites in Frederick and Montgomery counties.[1] Maryland is considering how to welcome this industry to our state. We offer the following informational testimony to provide context for this decision.

Our neighbors in Virginia are grappling with the impact of data centers right now. Data center alley—spanning roughly 600 acres in northern Virginia—is home to more than 20% of all known hyperscale data centers, according to the Virginia Economic Development Partnership. Such a high concentration of data centers requires massive amounts of energy. As of late 2022, data centers accounted for more than 20% of Dominion Energy's electricity sales [p.26]. The load on the grid from data centers in Dominion's territory is expected to more than triple by 2030, rising from under 5 gigawatts ("GW") in 2024 to 15 GW in 2030, and then soaring to 25 GW in 2040, according to recent projections from PJM [p.23].

To meet this demand, Dominion's 2023 Integrated Resource Plan wants to leave in place existing fossil-fuel generation and pursue an all-of-the-above energy strategy. Dominion has already proposed building a new gas-fired "peaker plant" in Chesterfield County to accommodate the expected load growth primarily from data centers. This new gas plant is one of seven new plants the company is proposing to construct in the coming years.

The sheer number and scale of Virginia data center proposals and the accumulation of so many data centers in such a relatively small area has led to a severely constrained electric grid and increased reliance on polluting backup diesel generators. Though they don't run continuously,

[1] In an initial foray into Maryland, data center developers have identified approximately 9,400 acres of agriculturally zoned land in southern Frederick County and possibly more than 740 acres in Montgomery County for data centers.

the generators require frequent testing. When all the generators run at once—for example, during a power outage—they can generate as much electricity as a power plant.[2]

Historically, power outages in Maryland are uncommon. In its request for a rehearing before the Maryland Public Service Commission, the data center company Aligned wrote that the site of its proposed data center in Frederick County had experienced an average of two outages a year.[3] All told, Aligned estimated that running its backup generators for maintenance and readiness testing combined with power outages would result in potential emissions of 3,738 metric tons of carbon dioxide equivalent ("CO2e") per year.

The historical record, however, does not take into account the additional strain on the grid from these data centers. Data centers concentrated in Loudoun County caused so much strain on the grid that regulators proposed a variance to allow them to switch to generator power during emergencies, freeing up more electricity for residential customers. Essentially, the proposal from the state's Department of Environmental Quality was to use the data centers' diesel generators as a peaker plant during times of highest demand. Ultimately, the variance was withdrawn but the fact remains that regulators in Virginia were tempted to rely on backup diesel generators to free up more power for residential customers.

In addition to the climate concerns, these data centers require significant amounts of water and land and are extremely noisy neighbors. According to a Virginia Tech study, data centers rank among the top 10 water-consuming commercial industries in the United States, using approximately 513 million cubic meters of water in 2018. Much of that water use comes from electricity use—coal, nuclear and gas plants take water to operate, and hydropower also consumes water—but about a quarter is due to using water for direct cooling.

Large industrial installations such as data centers also require expanses of impermeable paved surfaces that worsen stormwater flooding, disturb watersheds, prevent natural groundwater recharge, and affect local aquifers and drinking water. Storage of diesel fuel for data centers' backup generators increases risk of release to the region's watersheds.

The impact these data centers will have on our state is yet to be determined. Virginia, where the industry faced scant initial regulation, is now trying to catch up with the impacts. This General Assembly session, Virginia lawmakers introduced more than 15 bills focused on data centers.

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[2] Aligned Data Centers (MD) Propco, LLC ("Aligned") requested an exemption from the PSC's Certificate of Public Convenience and Necessity (CPCN) process for up to 168 three-megawatt diesel backup generators. Combined, these diesel generators would have more capacity than the now-closed C.P. Crane coal plant.

[3] Md. Public Service Commission, Aligned Rehearing Request (Maillog No. 302893).

Maryland has an opportunity to learn from Virginia's experience and get ahead of this industry, with all of its pluses and minuses. Now—before the industry is established—is the time to fully review industry practices and proposals to balance the benefits of the industry with our state's climate and conservation commitments.

CONTACT
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