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**Comment On:** NRC-2023-0192-0013

Pacific Gas and Electric Company; Diablo Canyon Nuclear Power Plant, Units 1 and 2; Draft Supplemental Environmental Impact Statement

**Document:** NRC-2023-0192-DRAFT-0021

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## Submitter Information

**Email:** government@CGNP.org

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**Government Agency:** Californians For Green Nuclear Power, Inc.

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## General Comment

Independent nonprofit Californians for Green Nuclear Power, Inc (CGNP) concurs with the NRC staff's evaluation and preliminary conclusion that no environmental impacts would preclude renewing the Diablo Canyon Power Plant (DCPP) licenses for an additional 20 years of operation. Furthermore, cessation of DCPP operations would cause significant environmental degradation. When San Onofre Nuclear Generation Station (SONGS) was closed at the end of January, 2012 instead of being repaired, the result has been to substitute pollution-laden out-of-state coal-fired generation for the roughly 18 TWh/year emission-free SONGS generation. State of California legislation and CPUC actions have allowed these coal-fired imports to be hidden behind the California-specific legal euphemism "Unspecified Imports." The large fraction of Southern California Edison's power source labeling that has been filled via unspecified imports since February, 2012 are consistent with coal-fired power being substituted for SONGS's substantial annual generation. While Warren Buffett has been aggressively lobbying to indirectly force DCPP to shut down via CAISO grid regionalization, CGNP has continued to oppose this harmful substitution. If CAISO grid regionalization occurs, Buffett will be able to successfully challenge California environmental legislation such as SB 846 (Dodd, 2022) in federal court, following the important U.S. Supreme Court decision in 2016 via *Hughes v. Talen Energy*. The Commerce Clause of the U.S. Constitution grants federal preemption in trade involving interstate commerce. Furthermore, a pair of 2016 FERC decisions 155 FERC ¶ 61,101 and 155 FERC ¶ 61,102 served as bars to Ohio's proposed zero emissions credit for two Ohio nuclear power plants. Ohio is a member of a multistate system operator.

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## Attachments

Closing Diablo Canyon spurs fears over replacement power 04 05 22

Protesting California's Ongoing Nuclear to Coal Transition - Part 1 - 10 16 24

Protesting California's Ongoing Nuclear to Coal Transition - Part 2

## Closing Diablo Canyon spurs fears over replacement power



BY **GENE NELSON** POSTED 04.05.2022 GENE'S EMAIL: [GOVERNMENT@CGNP.ORG](mailto:GOVERNMENT@CGNP.ORG)

(805) 363 - 4697 GENE'S CELL

[HTTPS://TINYURL.COM/DCPP-VERSUS-COAL](https://tinyurl.com/DCPP-VERSUS-COAL)

[HTTPS://CAPITOLWEEKLY.NET/CLOSING-DIABLO-CANYON-SPURS-FEARS-OVER-REPLACEMENT-POWER/](https://capitolweekly.net/closing-diablo-canyon-spurs-fears-over-replacement-power/)

California's power is expensive and polluting – but doesn't have to be.

The state of California plans to replace Diablo Canyon Power Plant (DCPP) mostly with Wyoming coal-fired generation. The source of the replacement power will remain hidden until 2025, when Californians can't stop the state.

As a nonprofit intervenor before the California Public Utilities Commission (CPUC) since 2016, Californians for Green Nuclear Power (CGNP) has uncovered four obscure clues in CPUC filings that confirm the state's plan. CGNP's thousands of pages of filings provide the details.

***While Diablo Canyon is compact, it's annual production is the equivalent of five Hoover Dams.***

The first clue is the engineering requirement that since Diablo Canyon Nuclear Power Plant is a reliable 24/7 generator, any incremental replacement generation must have similar reliability. Otherwise, rolling blackouts occur.

Engineers use the term “dispatchable” (under human control) to describe Diablo Canyon's power. Dispatchable generators that supply power like Diablo Canyon are powered by natural gas or coal. The ongoing drought means building new dams is impractical. While Diablo Canyon is compact, it's annual production is the equivalent of five Hoover Dams.

Californians demand that California's coal plants be shut down and they object to new plants powered by natural gas.

Widely-promoted solar and wind aren't dispatchable. The sun doesn't always shine and the wind doesn't always blow with sufficient force. Natural gas fills in for solar and wind's substantial intermittencies. Batteries are extremely expensive — and could optimally be reserved for vehicles to improve air quality, instead of displacing natural gas in power plants.

Those constraints imply that California's replacement generation must be located mostly out of state. There are many generators that could produce additional power to replace Diablo Canyon located in or near the nation's biggest coal deposits in Wyoming.

***“Unspecified imports” sounds nicer than coal. Unfortunately, this term mostly applies to out-of-state coal power.***

The second clue is the requirement that a new transmission network needs to be built to send the power about 1,000 miles from Wyoming to California.

Such a large network, first announced in 2007, is the Energy Gateway. The network's mastermind, Warren Buffett, stated in his 2021 letter to shareholders the network would cost \$18 billion by 2030. Oregon and Washington state have already announced upcoming bans against out-of-state coal power. Thus, by California utility law, most of this transmission cost will be borne by Californians.

Third clue: A California legal euphemism “unspecified imports,” which sounds nicer than coal, was created in 2009. Unfortunately, this term mostly applies to out-of-state coal power.

The term appears twice on page 16 in the CPUC's June 24, 2021 procurement decision in R2005003. Between 4,000 and 5,000 megawatts (MW) of generation capacity is stipulated. In order to convert this to more familiar kilowatt-hours (kWh) on your power bill, the capacity factor, or percentage ON time is used. California nuclear power has a capacity factor of 90% and there are 8,766 hours in a year. The product of 5,000 MW times 8,766 hours times 90% is 40 billion kWh.

The fourth clue is the increased air pollution from burning coal.

How can California's leaders evade this problem? The answer requires models they can manipulate. On page 104 of the CPUC's R2005003 Preferred System Portfolio adopted on Feb. 10, 2022 is the sentence, “Criteria pollutants were counted from generation within California only, and not from unspecified imports.” This means toxic air pollution from out-of-state coal power is artificially zeroed.

The increased demand for U.S. natural gas to supply Europe after Russia's invasion of Ukraine means increased gas costs for utilities, resulting in pressure to burn more coal. Since nuclear plants like Diablo Canyon don't emit air pollution, they should remain online instead.

With the increased transmission costs, in 2025 Californians could have the worst of both worlds with significantly higher toxic pollution released into the environment — while paying more for this emission-laden power from Wyoming.

Beginning to reverse California's harmful energy policies means continuing operation of safe, reliable and cost-effective zero-emission Diablo Canyon well beyond 2025.

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*Editor's Note: Gene Nelson has a Ph.D. in radiation biophysics and served as a science and engineering professor at 3 colleges and a university. He helped found CGNP in 2013, and has been CGNP's Legal Assistant since 2016.*

# Protesting California's Ongoing Nuclear to Coal Transition - Part 1

CGNP protests PacifiCorp's environmental hypocrisy to their CEO

October 16, 2024

<https://greennuke.substack.com/p/protesting-californias-ongoing-nuclear>

Yes, you read the headline correctly. Just as in Germany, for several decades, environmentally-conscious California has been shutting down safe, nonpolluting nuclear power reactors and replacing them with coal-fired power which results in large quantities of air and water pollution being emitted.

How is the nuclear to coal transition policy accomplished? Just as in the case of tobacco companies lobbying the federal government, there has been aggressive PacifiCorp lobbying of California decision-makers.



*Photo credit: CGNP This is likely the largest quarterly lobbying expenditure in California history.*

While \$24.9 million is a large sum to expend for California lobbying, it is mere pocket-change to PacifiCorp's owner Berkshire Hathaway. Multi-billionaire Warren Buffett, who is mentioned later in this article, is Berkshire Hathaway's CEO. *The Wall Street Journal* recently



reported that Berkshire Hathaway's cash on hand was about \$250 billion. This cash hoard is a powerful tool for obtaining Berkshire Hathaway's corporate objectives. A subsequent chapter will be documenting key details of PacifiCorp's lobbying, including their opaque lobbying disclosures.

In this first installment, Californians for Green Nuclear Power (CGNP) is sharing the text of their recent open letter to PacifiCorp CEO Cindy Crane. PacifiCorp has been leading the current phase of California's nuclear to coal transition. A future installment will disclose the very large wholesale transactions to southern California investor-owned utilities, among other California power suppliers. As of today, there has been no PacifiCorp reply email.

(Email addresses have been altered to make them less likely to be detected by spambots.)

Cindy Crane, CEO  
PacifiCorp  
825 NE Multnomah Street, Suite 1900  
Portland, OR 97232  
(503) 813-6859  
cindy dot crane [at] PacifiCorp dot com email

October 12, 2024

Dear Cindy:

Independent nonprofit intervenor Californians for Green Nuclear Power (CGNP) is contacting you to learn how PacifiCorp resolves the tension between being one of the largest suppliers of mostly coal-fired power to California and your firm's stated goals on the PacifiCorp home page of "Protecting and preserving our rivers & lands From the windy hills to our waterways, our land is not only a source of clean, renewable energy, it's also paramount to sustaining healthy, thriving communities. That's why we're committed to serving as good stewards of our environment."

In November, 2014, in conjunction with the California Independent System Operator (CAISO,) PacifiCorp created the Western Energy Imbalance Market (WEIM) As of the end of the second quarter of 2024, the gross benefits to PacifiCorp stand at \$846.84 million <https://www.westerneim.com/Pages/About/QuarterlyBenefits.aspx> - almost a billion dollars. CGNP possesses information consistent with PacifiCorp supplying a significant part of the replacement electric power to southern California since zero-emissions San Onofre Nuclear Generating Station (SONGS) went offline at the end of January, 2012. In 2011, SONGS supplied about 18 TWh to southern California, where a TWh is a billion kilowatt-hours. Furthermore, CGNP can show coal remains the dominant energy input with natural gas in second place for PacifiCorp's power via PacifiCorp's 2020 ESG disclosures and Berkshire Hathaway's recent SEC filings.

Since 2016, PacifiCorp has been aggressively lobbying at both the California state level and the federal level via the Western Interstate Energy Board (WIEB) in support of CAISO grid regionalization. CAISO grid regionalization would facilitate PacifiCorp's ability to overturn in

federal court California environmental legislation such as SB 846 (Dodd, 2022) which favors in-state generators such as Diablo Canyon Power Plant (DCPP.) (If SB 846 rules would have applied in 2021-2023, ratepayers would have received \$1.313 billion in rebates connected with DCPP operation.) This conclusion follows the legal reasoning in the important 2016 U.S. Supreme Court decision *Hughes v. Talen Energy* and a pair of 2016 FERC decisions opposing zero emission credits for two Ohio nuclear power plants 155 FERC ¶ 61,101 and 155 FERC ¶ 61,102.

Contrast the above information with you being one of those pictured at the recent groundbreaking of the Terrapower 345 MWe Natrium reactor in Kemmerer, Wyoming in the following June 10, 2024 *GatesNotes* article.

If PacifiCorp's well-funded lobbying campaign for CAISO grid regionalization is successful, PacifiCorp will likely be able to shut down the 2,256 MWe DCPP and replace it with PacifiCorp's mostly coal-fired generation. See the attached CGNP *Capitol Weekly* April 5, 2022 OpEd for further details. This will negate the environmental benefits - by a large margin - of the substantial federal and private investments connected with the Natrium reactor.

CGNP looks forward to communications with you.

Sincerely, Gene Nelson's CGNP signature block - Gene's email is government [at] CGNP dot org.

The entire article below was included in CGNP's letter to PacifiCorp.

## **POWER UP**

# **We just broke ground on America's first next-gen nuclear facility**

Kemmerer, Wyoming will soon be home to the most advanced nuclear facility in the world.

By Bill Gates

<https://www.gatesnotes.com/Wyoming-TerraPower-groundbreaking>

June 10, 2024

This article includes a photo of PacifiCorp CEO Cindy Crane as part of a group breaking ground for the Natrium reactor with Bill Gates and others in Kemmerer, Wyoming.

**My comments below passed the GatesNotes automated content moderation:**

**Gene Nelson, Ph.D. 10 12 24**

Bravo for your work to achieve this milestone regarding American nuclear power. The first coal to nuclear project with PacifiCorp and Berkshire Hathaway Energy! I understand that you are Warren Buffett's bridge partner. Perhaps you could tell Warren at your next meeting that PacifiCorp's apparent plan to replace the 2,256 MW Diablo Canyon Nuclear Power Plant with PacifiCorp's mostly coal-fired power will more than negate your hard work and investments with Terrapower.

**Gene Nelson, Ph.D. 10 12 24**

For details, please see the articles at CGNP's GreenNUKE Substack. .

- Gene Nelson, Ph.D.

As of today, there has been no response posted by Bill Gates or other GatesNotes readers.

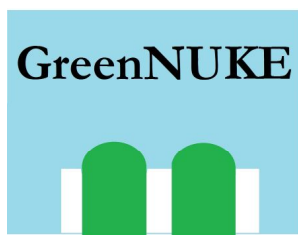
CGNP's two-page April 5, 2022 *Capitol Weekly* OpEd, " Closing Diablo Canyon spurs fears over replacement power" [HTTPS://TINYURL.COM/DCPP-VERSUS-COAL](https://tinyurl.com/dcpp-versus-coal) which is sharply critical of PacifiCorp's leadership of the California nuclear to coal transition concluded the letter.

Since 2017, CGNP has been persistently critical of PacifiCorp's environmental hypocrisy in our local, state, and federal filings. PacifiCorp would like for CGNP and its allies to halt their criticism. In December, 2023, one of PacifiCorp's likely lobbying objectives was to deprive CGNP of their rightful intervenor compensation in a CPUC Proceeding A.16-08-006 as an advocate for ratepayers and the environment. While CGNP failed to receive a penny of their over \$153,000.00 intervenor compensation request to recover their expenses, DCPD opponents were lavishly compensated. For details, see "How Did the CPUC Decide to Deny CGNP Intervenor Compensation? - Lavish Opposition Lobbying Likely Culprit." May 2, 2024

<https://greennuke.substack.com/p/how-did-the-cpuc-decide-to-deny-cgnp>

You can assist in the fight to keep DCPD open by becoming a paid GreenNUKE subscriber. (Substack is paid a commission for subscriptions.) For maximum benefit, checks may be directly mailed to CGNP at 1375 East Grand Ave Ste 103 #523, Arroyo Grande, CA 93420-2421 Contact me at my email shown at the end of CGNP's above letter to PacifiCorp CEO Cindy Crane to obtain CGNP's ACH information.





# Protesting California's Ongoing Nuclear to Coal Transition - Part 2

German deindustrialization follows slashing safe, reliable, cost-effective and zero-pollution nuclear power generation  
November 12, 2024 Gene Nelson, Ph.D.

<https://greennuke.substack.com/p/protesting-californias-ongoing-nuclear-4fa>

## 1. Slashing nuclear and coal imperils German grid stability

Since 2000, Russia and China expanded their political and economic power by pushing for Germany to slash the nation's use of both nuclear power and coal-fired power on dubious environmental grounds. On the other hand, China and Russia's political maneuvering also informed world powers that the increasing sale of Russian natural gas and the sharply accelerating use of coal and natural gas in Communist China was environmentally acceptable. The table below reveals stark nuclear power comparisons between Germany, France, the United States, Communist China, and Russia. This article focuses on Germany's need to restore its nuclear power fleet to grow economically and assure grid stability by a combination of recommissioning and new construction.

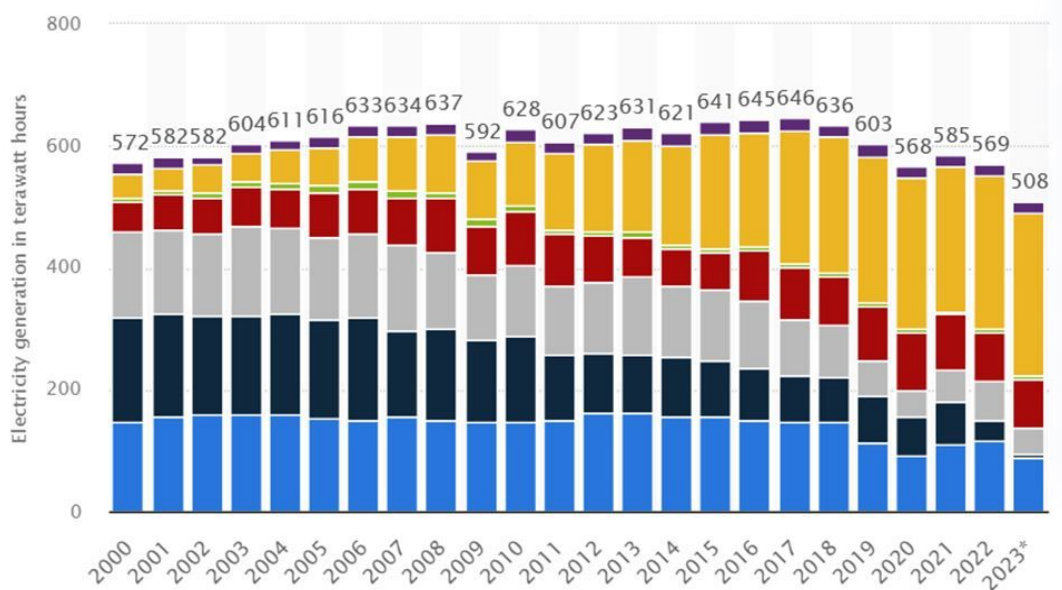
Nation	Reactors	Reactor Capacity , MWe	Reactors Under Construction	Reactors Under Construction Capacity, MWe	Reactors Shutdown	Shutdown Capacity, MWe
Germany	0	0	0	0	36	26,411
China	57	57,562	30	31,953	0	0
Russia	36	26,802	6	3,901	11	4,893
United States	94	96,952	0	0	41	20,017
France	56	61,370	1	1,630	14	5,563

***Germany and the United States Need to recommission and build new nuclear reactors. (November, 2024 data courtesy the World Nuclear Association)***

Californians for Green Nuclear Power (CGNP) gathered a set of articles regarding the Russian political maneuvering since about 2000 to convince Germany to voluntarily abandon their safe and well-maintained nuclear power fleet. See the final section of CGNP's May 8, 2024 objections to the WWGPI at <https://tinyurl.com/WWGPI-Opposed>

## 2. Gross German Generation Since 2000

Germany's DESTATIS provides energy contribution tabulations for Germany's electricity only since 2019. These tabulations fail to show the "big picture" of the changes since 2000. CGNP located a Statista graph that we were able to convert into a tabulation. Charts showing annual gross German nuclear power generation, annual German coal-fired generation, and annual gas-fired generation appear after the overview graph.



### ***Gross Electricity Generation in Germany from 2000 to 2023 TeraWatt-hours (TWh )***

<https://www.statista.com/statistics/1330065/gross-electricity-generation-by-source-germany/>

An electric power grid with sufficient synchronous grid inertia (SGI) remains stable despite significant supply or demand perturbations. Without sufficient synchronous grid inertia, a power grid will suffer cascading blackouts that are difficult to recover from. An introduction to SGI is found in the March 4, 2024 GreenNUKE Substack article, "Why is Grid Inertia Important?"

<https://greennuke.substack.com/p/why-is-grid-inertia-important>

### 3. Sufficient SGI Assures Grid Stability. For Germany, Nuclear and Coal are Superior.

To obtain a sense of the significant influence of different energy supplies on SGI, the Energy Reliability Council of Texas (ERCOT) provided Table 1 in their 2018 paper about SGI. In 2000, the German electric power grid stability was assured by generous quantities of nuclear and coal-fired generation for sufficient SGI. This is shown in the first two lines of the chart below for ERCOT generators. German nuclear and coal-fired generators were comparable to ERCOT's. Since 2000, Germany invested in very large quantities of solar and wind generation which contribute negligible SGI. The very large quantities are shown in the first Statista graphic. Germany needlessly retired large quantities of nuclear and coal-fired generation. The unfortunate but predictable result is the German power grid now has precarious stability.

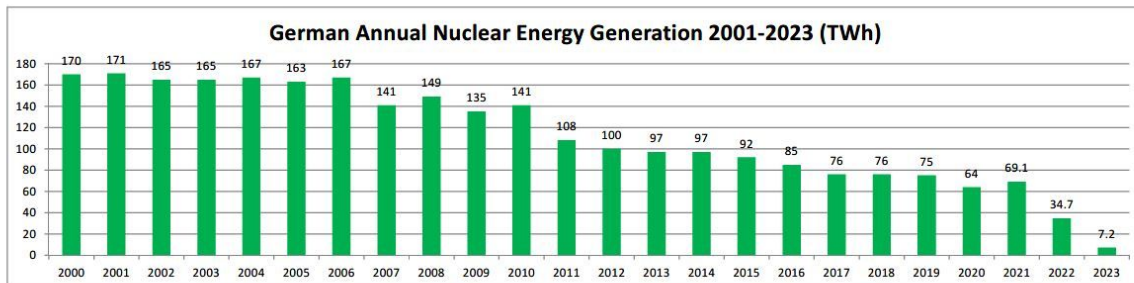
	MVA base range		H inertia (Sec.)		MVA Base range * H (MW* Sec)	
	Min.	Max.	Min.	Max.	Min.	Max.
Nuclear	1,410	1,504	3.8	4.3	5,344	6,530
Coal	194	1,120	2.9	4.5	863	3,158
Combustion Turbine	7	235	1.0	12.5	22	1,288
Gas Steam	14	887	1.0	5.4	13	2,216
Combined Cycle	25	1,433	1.1	9.0	97	8,765
Hydro	9	36	2.0	3.0	19	1,133
Reciprocating Engine	10	70	1.1	2.1	13	97
Wind	-			0		0
Solar PV	-			0		0

**Table 1, Inertia: Basic Concepts and Impacts on the ERCOT Grid, April 4, 2018, ERCOT, Austin, Texas.**

[https://www.ercot.com/files/docs/2018/04/04/Inertia\\_Basic\\_Concepts\\_Impacts\\_On\\_ERCOT\\_v0.pdf](https://www.ercot.com/files/docs/2018/04/04/Inertia_Basic_Concepts_Impacts_On_ERCOT_v0.pdf)

#### 4. Germany needs to restore its nuclear generation fleet

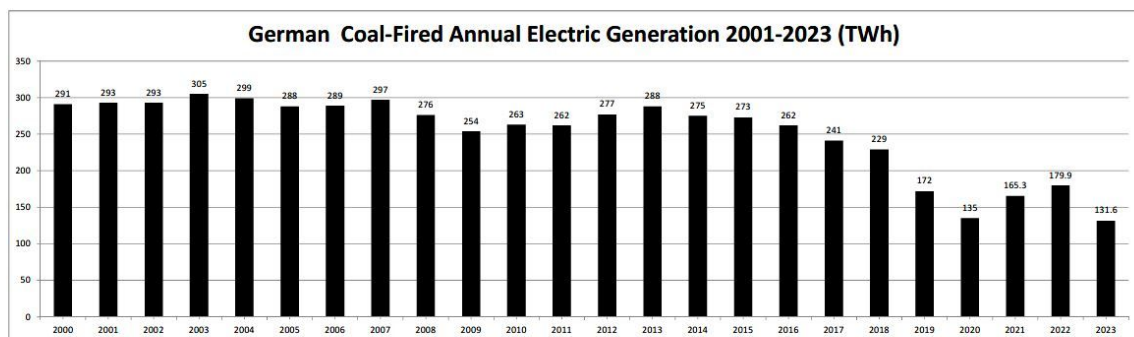
Here's the annual generation trend chart for German nuclear power since 2000.



In 2000, German nuclear power plants generated about 170 TWh (approximately equal to the annual electric power production of ten Diablo Canyon Power Plants (DCPPs.)) By 2023, the German annual nuclear power production was almost zero.

#### 5. Germany needs to shore up its coal-fired generation fleet

The annual trend table for coal-fired power is almost as grim.



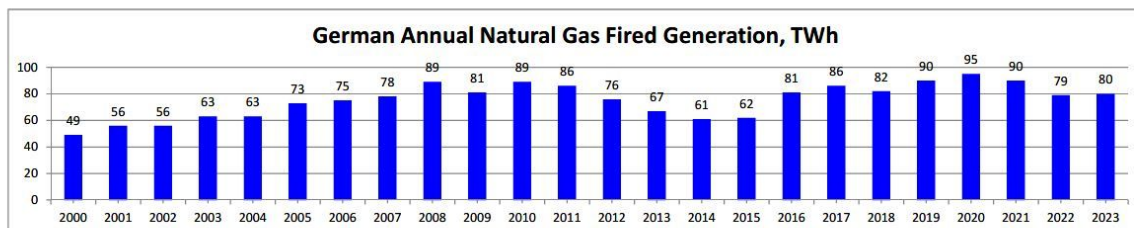
In 2000, Germany's coal-fired power plants generated 291 TWh of electricity. By 2023, the annual coal-fired power production dwindled to 131 TWh, about 45% of the year 2000 value.

## 6. Germany's natural gas-fired generation fleet is challenged by an unreliable supply.



### *A Gazprom Caution Sign for Europe.*

German natural gas-fired generation was unable to make up for the diminution in nuclear and coal-fired generation. In 2000, gas generation was a mere 49 TWh. By 2023, gas-fired generation had only increased about 31 TWh to 80 TWh. Until Germany is able to acquire a reliable natural gas supply sufficient to meet primary energy needs of both businesses and residences AND meet the energy needs for generation, expansion of its gas-fired generation fleet is a risky proposition.



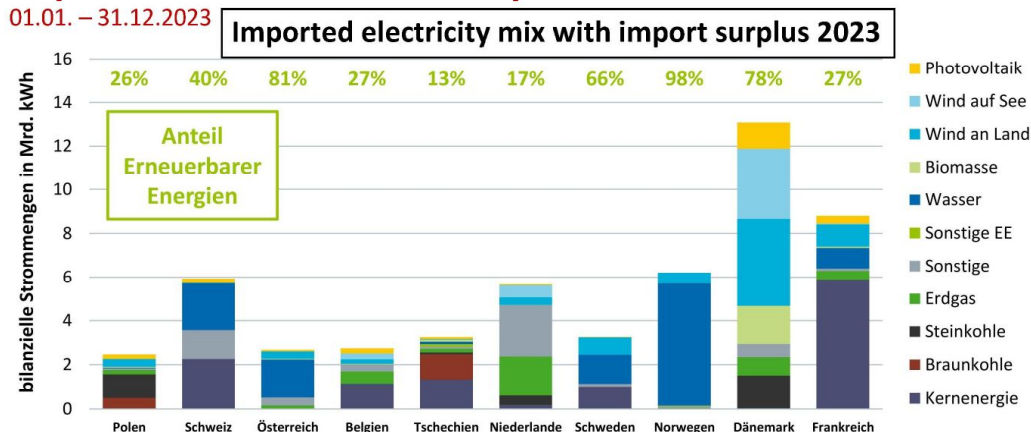
## 7. German Electricity Imports are Meager.

Unlike the case of California which receives substantial power from nearby states, Germany receives considerably less power. California typically consumes about 300 TWh per year with about 1/3 or 100 TWh from imports. The German trade association BDEW provided information regarding German power imports as part of their 2023 annual report showing approximately 44.3 TWh received from ten nearby nations. Here is a slide from that report with some English translations.



## Importierter Strommix bei Importüberschuss 2023

01.01. – 31.12.2023



Quellen: BDEW (eigene Berechnung auf Basis ENTSO-E)

[https://www.bdeu.de/media/documents/Jahresbericht\\_2023\\_UPDATE\\_Mai\\_2024\\_Chartsatz\\_final\\_V2.pdf](https://www.bdeu.de/media/documents/Jahresbericht_2023_UPDATE_Mai_2024_Chartsatz_final_V2.pdf)

Annual Report: Energy Supply 2023 (Slide Set)

Y axis: Balance sheet electricity volumes billion kWh = TWh

BDEW Association - The BDEW Federal Association of the Energy and Water Industry.

Natural gas, electricity and heating as well as water and wastewater. The BDEW represents over 2,000 companies.

Green percentage near top is proportion of renewable energy from each nation. Sonstige = Other.

Total:	3.3 TWh coal	11.5 TWh nuclear	44.3 TWh total
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Germany exported some of the power it received from the 10 nations sending it power. Since Germany needed dispatchable high-quality power from nuclear and coal, it likely retained that 14.8 TWh share in 2023 while exporting the remaining 29.5 TWh of low-quality nondispatchable solar and wind power to other nations. Like Germany, California also exports large amounts of surplus solar and wind generation that it does not require. California ratepayers must pay adjoining states to accept their low-quality nondispatchable solar and wind power.

Unlike Germany, California is further disadvantaged by recent legislation that created a California specific legal euphemism, "Unspecified Power." This legislation allows large amounts coal-fired power to be exported to the environmentally-conscious state of California from states such as Wyoming - and deem the out-of-state power to have considerably less air and water pollution associated with the exported power. See "The Case of the Missing 40 MMT/year of California Electricity Sector Emissions - The coal train needed to generate those emissions would be 1,159 miles long," July 15, 2024, GreenNUKE Substack.

<https://greennuke.substack.com/p/the-case-of-the-missing-40-mmtyear>

[https://www.bdew.de/media/documents/Jahresbericht\\_2023\\_UPDATE\\_Mai\\_2024\\_Chartsatz\\_final\\_V2.pdf](https://www.bdew.de/media/documents/Jahresbericht_2023_UPDATE_Mai_2024_Chartsatz_final_V2.pdf)  
**Annual Report: Energy Supply 2023 (Slide Set)**

**Y axis: Balance sheet electricity volumes billion kWh = TWh**

**BDEW Association - The BDEW Federal Association of the Energy and Water Industry.**  
**Natural gas, electricity and heating as well as water and wastewater. The BDEW represents over 2,000 companies.**  
**Green percentage near top is proportion of renewable energy from each nation. Sonstige = Other.**

Poland:	1.5 TWh coal		2.5 TWh total
Switzerland:		2.3 TWh nuclear	6.0 TWh total
Austria:			2.5 TWh total
Belgium:		1.0 TWh nuclear	2.5 TWh total
Czech Republic:		1.3 TWh nuclear	3.0 TWh total
Netherlands:	0.5 TWh hard coal	0.2 TWh nuclear	5.5 TWh total
Sweden:		0.9 TWh nuclear	3.0 TWh total
Norway:			6.3 TWh total
Denmark:	1.3 TWh hard coal		13.0 TWh total
France:		5.8 TWh nuclear	8.8 TWh total
<hr/>			
Total:	3.3 TWh coal	11.5 TWh nuclear	44.3 TWh total

## 8. BDEW's 2023 German Electricity Trends.

As a highlight of BDEW's annual report, they highlighted ten key trends in 2023. They are shown below. The first point is highly significant and bolded for emphasis.

<https://www.bdew.de/service/publikationen/jahresbericht-energieversorgung/>

**The Energy Year 2023 – the 10 most important points:**

- 1. Record low in primary energy consumption – main causes: high energy prices and weak economy**
2. Consumption decline of 4 to 6% for all grid-based energies (natural gas, electricity, district heating)
3. Natural gas supply continuously secured through well-filled storage facilities and LNG supply
4. The USA is the main supplier of LNG with 83%
5. Electricity generation fell by 10.5%
6. For the first time, more than 50% of electricity comes from renewable energies – record expansion of photovoltaics
7. Electricity exchange: for the first time in 20 years, import surplus – a good half from renewables, around a quarter each from nuclear energy and conventional energies

8. CO2 emissions from the energy industry have fallen by 22% compared to 2022, and the reduction compared to 1990 is now 57%
9. Further proportional increase in heating with electric heat pumps in the new building market – with overall weak construction activity
10. End-customer prices for electricity and gas in households have fallen continuously since the beginning of 2023 after peaking

## **9. Eugyppius and Robert Bryce's Observations Regarding German Electricity.**

While BDEW highlighted these German energy trends earlier in 2024, several energy analysts recently raised additional criticisms of German politics and energy policies. An author with the pseudonym Eugyppius wrote an article on November 9, 2024 titled, "How the German government collapsed and what will happen now"

<https://www.eugyppius.com/p/how-the-german-government-collapsed>

This article describes how the German "Ampel" (traffic light) coalition government just collapsed as a consequence of the huge expense and poor economic outcomes of the German "Energiewende." The complete text of this article is found in the supplemental materials for this article at CGNP's website.

The next day, veteran U.S. energy reporter Robert Bryce wrote, "Germany Is Dunkelf\*\*ked (In 5 Charts) - Its coalition government, wind energy output, and industrial base are all collapsing." November 10, 2024

<https://robertbryce.substack.com/p/germany-is-dunkelfked-in-5-charts> This article is also available at the CGNP website.

## **10. The Energiewende is pure propaganda.**

As further confirmation of the concerns raised in the article you are reading, the political advocacy of German Greens is partially funded via German taxpayers through the Heinrich Böll Foundation (hbs.) Here's an anti-nuclear power example post: "Renewables replace nuclear and lower emissions simultaneously," Craig Morris, 20 Nov 2019, Energy Transition - The Global Energiewende blog.

<https://energytransition.org/2019/11/renewables-replace-nuclear-and-lower-emissions-simultaneously/> (This hbs article is pure propaganda.) The Energiewende blog is an initiative of the Heinrich Böll Foundation. © 2012 - 2024. The hbs has elegant offices in Berlin. The hbs also has offices in the West Bank of Palestine, Moscow, Russia, Beijing, China, and Washington, DC. Many of the policies of the hbs are socialist policies in "green" garb.

**11. If Germany had spent about half of the sum it wasted on the Energiewende since 2002 on nuclear power, Germany's air and water pollution would be far less now - and their power grid would be reliable and durable.**

In addition to the five informative charts, Robert Bryce's article included this important paragraph:

**In September, a study published in the *International Journal of Sustainable Energy* estimated that between 2002 and 2022, the energiewende cost Germany \$746 billion. More than half of that sum was spent on alt-energy production and distribution, and the remainder on subsidies. The study concluded that if Germany had spent about half that massive sum on nuclear energy, it would have achieved greater emissions reductions than it did by chasing the mirage of alt-energy.**

After downloading this new article, CGNP contacted the author, Jan Emblemsvåg, Ph.D. a professor at NTNU in Ålesund, Norway. Professor Emblemsvåg generously supplied his related article and several informative charts showing the expensive consequences of Germany's policy choice to end nuclear generation. He later supplied a rebuttal to objections raised by the Fraunhofer Institute. These articles and charts are available within the supplemental materials at the CGNP website.

Anticipating Professor Emblemsvåg's criticisms of solar and wind generation in 2011, the eminent scientists, engineers, and economists at the California Council on Science and Technology, a nonprofit which serves to advise the California government regarding science and technology matters, were asked by the California Energy Commission, "What was the most cost-effective way to decarbonize the California power grid?" Their answer was to build about 30 new nuclear power plants.

<https://tinyurl.com/CCST-Nuclear-1> <https://tinyurl.com/CCST-Nuclear-2> A 3 1/2 page summary by the late Nobel laureate Burton Richter, Ph.D. is here: <https://ccst.us/wp-content/uploads/071511richter.pdf>

**12. Conclusion.**

The logical and economical first step for Germany to restart its ailing economy is to recommission as many of its nuclear power plants as quickly as possible. There is growing political support for this action. "German opposition MPs propose checking feasibility of restarting nuclear plants," 05 Nov 2024, 13:19 Benjamin Wehrmann | Germany, *Clean Energy Wire*.

<https://www.cleanenergywire.org/news/german-opposition-mps-propose-checking-feasibility-restarting-nuclear-plants>

With so many recent developments, GreenNUKE anticipates updates to this article will be forthcoming.