The Real Cost of Cooling: The Purchasing Power of California's Incarcerated Workers as a Limit to Climate Adaptation

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ABSTRACT

Extreme heat poses a growing threat to public health in the United States. Yet vulnerability and exposure to heat are unevenly distributed. Incarcerated individuals are at particular risk of experiencing heat-related illness, injury, and even death. Because most prisons lack adequate air conditioning, purchasing a range of "cooling items" from prison commissaries represents one of the primary—albeit inadequate—climate adaptation strategies available to incarcerated individuals for protecting themselves against the heat. Drawing on data from thirty-one California Department of Corrections and Rehabilitation (CDCR) prisons, we analyze the purchasing power of incarcerated workers in relation to hours of labor, prison wage structures, and the price of the limited cooling items available through prison commissaries. We specifically focus on purchasing labor hours, defined as the number of hours of work required to purchase a given cooling item. Largely due to the fact that incarcerated workers earn wages far below the minimum wage outside of prisons, the real cost (in terms of number of hours worked) of such items in prison tend to be far higher than similar items purchased outside prison. Based on these real costs, we argue that the limited means of climate adaptation available to incarcerated individuals is limited even further by the particular parameters of the economic system that operates within carceral settings. Our recommendation is not simply that commissary prices should be reduced, but that access to such crucial (and still inadequate) forms of climate adaptation should not be contingent on meager wages earned through forced labor.

KEY WORDS:
incarceration, climate change, carceral heat exposure, prison commissary system, prison wage structures, purchasing power analysis, California

INTRODUCTION

Extreme heat poses a growing threat to public health in the United States, one that is exacerbated by both climate change and inadequate climate adaptation. Exposure to high temperatures and high humidity has been linked to

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elevated risks of morbidity and mortality.[1] However, exposure and vulnerability to heat are unevenly allocated. Several compounding variables—such as aging, disability, race, preexisting health conditions, medication usage, inadequate medical and cooling infrastructure, forced labor, and structural confinement—contribute to heightened susceptibility to extreme heat, especially amongst incarcerated individuals in the United States.[2]

The Fifth Circuit has held that exposure to extreme heat in prisons can constitute "cruel and unusual punishment," therefore violating the Eighth Amendment.[3] However, the Prison Litigation Reform Act (PLRA) of 1996 severely curtailed both the available means of seeking redress and the scope of possible judicial remedies. The PLRA forces plaintiffs to exhaust every possible prison grievance procedure before filing suit, requires the full payment of filing fees, and increases the risk of dismissal on technical grounds. Courts are also given little discretion in the forms of relief they might offer, which must "extend no further than necessary."[4]

At a regulatory level, there is also no nationwide heat standard applicable across the American carceral system.[5] Many prisons lack mechanical air conditioning, operating with a range of inadequate cooling technologies such as

1. Tiantian Li, Jie Ban, Radley M. Horton, Daniel A. Bader, Ganlin Huang, Qinghua Sun & Patrick L. Kinney, *Heat-related mortality projections for cardiovascular and respiratory disease under the changing climate in Beijing, China*, 5 SCI. REPS. 11441 (2015); Prison Journalism Project (PJP) Contributors & Aala Abdullahi, *How We Survived Extreme Heat in Prison*, MARSHALL PROJECT (Sep. 19, 2024), at 1-2; Zhiwei Xu, Gerard FitzGerald, Yuming Guo, Bin Jalaludin & Shilu Tong, *Impact of Heatwave on Mortality Under Different Heatwave Definitions: A Systematic Review and Meta-Analysis*, 89-90 ENV'L INT'L 193, 193-203 (2016).

2. B. JAY ANNO ET AL., CORRECTIONAL HEALTH CARE: ADDRESSING THE NEEDS OF ELDERLY, CHRONICALLY ILL, AND TERMINALLY ILL INMATES (2004); Karina Brunn, Olivia Toledo, Chelsea Chau Tran, Ashwin Vasudevan & Bharat Jayram Venkat, *Carceral heat exposure as harmful design: An integrative model for understanding the health impacts of heat on incarcerated people in the United States*, 367 SOC. SCI. & MED. 2-3 (2025).; Glen P. Kenny, Jane Yardley, Candice Brown, Ronald J. Sigal & Ollie Jay, *Heat Stress in Older Individuals and Patients with Common Chronic Diseases*, 182(10) CAN. MED. ASS'N J. 1053 (2010); Julianne Skarha, Keith Spangler, David Dosa, Josiah D. Rich, David A. Savitz & Antonella Zanobetti, *Heat-Related Mortality in U.S. State and Private Prisons: A Case-Crossover Analysis*, PLOS ONE 18(3), (Mar. 1, 2023), https://doi.org/10.1371/journal.pone.0281389.

3. Hinojosa v. Livingston, 807 F.3d 657 (5th Cir. 2015); Yates v. Collier, 868 F.3d 354, 361 (5th Cir. 2017).

4. Prison Litigation Reform Act of 1995, S. 866, 104th Cong. (1995); Brianne Wylie, *Rising Temperatures, the Prison Litigation Reform Act, and the Heat Death of Human Dignity in Texas Prisons*, 119 Nw. U. L. Rev. 775 (2024).

5. Alice Speri, *Deadly Heat in U.S. Prisons is Killing Inmates and Spawning Lawsuits*, INTERCEPT (Aug, 24, 2016, 10:25 AM).

swamp coolers and fans.[6] Under particularly hot conditions, fans might even exacerbate the effects of heat through the recirculation of warm air.[7]

To mitigate the negative effects of extreme heat in the workplace, the California Division of Occupational Safety and Health Administration (Cal/OSHA) implemented standards designed to protect indoor workers across the state. These standards, however, explicitly exclude all incarcerated and non-incarcerated workers in the thirty-one prisons operating in the state.[8] The justification for this carveout was framed in terms of the high estimated cost of cooling prisons, rather than temperature or health-related considerations.[9]

The Exceptions Clause to the Thirteenth Amendment encourages both public actors and private corporations to profit from incarcerated labor, while minimizing oversight, accountability, and wages.[10] Importantly, many incarcerated individuals across the United States are forced to work for little or no pay.[11] Those who do earn wages are frequently required to spend them simply to acquire basic necessities. The impacts of heat on the more than ninety thousand people incarcerated in California prisons will only grow more severe as the expected consequences of climate change, such as rising temperatures and increasingly frequent, long, and intense heat waves, deepen.[12] Between 2016-2020, some prisons in southern California experienced on average over seventy-five days of hazardous heat per year, a number which is certain to grow.[13]

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6. Ben N. Barron et al., Shawhin Roudbari, Phaedra C. Pezzullo, Shideh Dashti & Abbie B. Liel, *"Because we're dying in here": A study of environmental vulnerability and climate risks in incarceration infrastructure*, NATURE & SPACE (Oct. 13, 2024).

7. Robert D. Meade, Sean R. Notley, Nathalie V. Kirby, Glen P. Kenny, *A critical review of the effectiveness of electric fans as a personal cooling intervention in hot weather and heatwaves*, 8 LANCET PLANETARY HEALTH e256, e257, e261 (2024).

8. CAL. CODE REGS. tit. 8, § 3396 (a)(E)(1): Heat Illness Prevention in Indoor Places of Employment (2024). At the time of writing, CDCR operates thirty-one active prisons. This number does not include privately-operated prisons and CDCR's conservation (fire) camps. In January 2023 and October 2024, CDCR closed Folsom Women's Facility and Chuckawala Valley State prison, respectively. These institutions are not included in this analysis. For list of active institutions, see CDCR, List of Adult Institutions, https://www.cdcr.ca.gov/adult-operations/list-of-adult-institutions/.

9. Jeane Kuang, *California tries again to protect workers from indoor heat — except in prisons*, CALMATTERS (Apr. 18, 2024). A notice by the California Occupational Safety and Health Standards Board posted in 2023, prior to the passage of Cal. Code Regs. tit. 8, § 3396, estimated that implementation of an indoor heat standard for California correctional facilities would "incur costs totaling approximately $0.9 million in 2023 and $0.4 million in each subsequent year on an undiscounted annualized basis." 13-Z Cal. Regulatory Notice Reg. 368 (Mar. 31, 2023).

10. Josh Halladay, *The Thirteenth Amendment, Prison Labor Wages, and Interrupting the Intergenerational Cycle of Subjugation*, 42 SEATTLE U. L. REV. 937, 937-963 (2018).

11. AM. C.L. UNION (ACLU) & U. CHI. L. SCH. GLOB. H.R. CLINIC (GHRC), CAPTIVE LABOR: EXPLOITATION OF INCARCERATED WORKERS 6 (2022).

12. LEGIS. ANALYST'S OFF., *How many adults are in California's state and county correctional systems and how has this changed over time?* (last updated Dec. 2025), https://www.lao.ca.gov/PolicyAreas/CJ/5_cj_inmates.

13. Cascade Tuholske, Victoria D. Lynch, Raenita Spriggs, Yoonjung Ahn, Colin Raymond, Anne E. Nigra & Robbie M. Parks, *Hazardous Heat Exposure Among Incarcerated People in the United States*, 7 NATURE SUSTAINABILITY 394, 394-98 (2024).

For incarcerated individuals lacking air conditioning, purchasing a range of "cooling items" from prison commissaries represents one of the primary—albeit inadequate—climate adaptation strategies available to protect themselves against the heat. Within this category, we include cooling towels (made from materials that enhance cooling when wet), fans, bottles, and electrolyte drinks. Given the limited agency that incarcerated individuals can exercise over their living and working conditions—most prominently, they do not have the power to simply go elsewhere, or to refuse work—these commissary purchases are among the only means at their disposal for cooling down.[14] Limited access to these goods likely further intensifies vulnerability to heat-related illness, injury, and death (HRIID).

Drawing on data from thirty-one California Department of Corrections and Rehabilitation (CDCR) prisons, we analyze the *purchasing power* of incarcerated workers in relation to hours of labor, prison wage structures, and the price of the limited cooling goods available through prison commissaries. Specifically, we analyze *purchasing labor hours*, which we define as the number of hours of work required to purchase a given item. We emphasize purchasing labor hours over monetary prices due to the differences in wages available to incarcerated and non-incarcerated workers. Because the wages of incarcerated workers are far below the minimum wage outside of prisons, the *real cost* (in terms of number of hours worked) of an item purchased in prison might be far higher. By examining the relationship between incarcerated workers' wages and commissary prices against the backdrop of extreme heat, we demonstrate how incarcerated individuals' vulnerability to HRIID is shaped by specific institutional features fundamental to California's carceral economy.

I. LITERATURE REVIEW

Mass incarceration in the United States is directly rooted in the legacy of slavery. Although the Thirteenth Amendment to the U.S. Constitution formally abolished slavery, it made an exception for incarcerated individuals, legally sanctioning slavery as a form of debt peonage for acts of crime.[15] In legislation commonly referred to as "Black Codes," southern states disproportionately criminalized formerly enslaved people, then once again subjected them to forced labor.[16] By enabling profiteering from forced labor, the Black Codes firmly established prisons as a facet of American capitalism.[17]

14. PJP Contributors & Aala Abdullahi, *supra* note 1, at 1-2.

15. V. Camille Westmont. *Dark heritage in the new south: Remembering convict leasing in southern middle Tennessee through community archaeology*, 26 INT. J. HIST. ARCHAEOLOGY 1, 1-21.

16. MISSISSIPPI, *Laws of the State of Mississippi, Passed at a Regular Session of the Mississippi Legislature; Held in the City of Jackson, October, November and December, 1865* (J.J. Shannon & Co., State Printers 1866), https://nmaahc.si.edu/object/nmaahc_2012.46.10 (on file with the National Museum of African American History & Culture); Halladay, *supra* note 10 at 941-42.

17. Tiffany Yang, *Public Profiteering of Prison Labor*, 101 N.C. L. Rev. 313 (2023).

With nearly two million people in prisons and jails today, the American carceral system continues to exploit the labor of incarcerated individuals to maximize profits.[18] In 2021 alone, state-run prisons forced incarcerated workers to produce over $2 billion in goods and services for state-owned businesses.[19] In addition, 58% of incarcerated workers are assigned to jobs ranging from janitorial duties, food preparation, and product manufacture—all of which maintain the functioning of state prison facilities.[20] Despite incarcerated workers' significant role in boosting the profit margins of businesses and maintaining prison facilities, prisons allocate less than 1% of their budgets to paying incarcerated workers' wages.[21] Moreover, prisons regularly upcharge phone calls, money transfers from family members, and commissary items, further impoverishing incarcerated individuals.[22] Given high costs and low wages, 70% of surveyed incarcerated individuals reported difficulties in affording basic medical care, hygiene products, and even phone calls.[23] Despite the roughly $80.7 billion invested into the carceral system each year, as well as the profits produced through in-prison labor, incarcerated individuals consistently fail to receive basic goods and services as well as adequate wages.[24]

All of this constitutes the *carceral economy*, which we define as an extensive, interwoven web of financial interests that operate in and around the prison-industrial complex. As part of this economy, incarcerated individuals provide low-cost labor to private industries, investors, and the state. They also contribute vital services for the upkeep of the prison system itself.[25] The wages earned by incarcerated workers' labor also flow back into the system via purchases they make from commissaries, mandatory deductions for cost of living, and the cost of accessing medical care within prisons.[26]

The legal basis of the American carceral system is rooted in the state's right to incarcerate people, provided that it meets its obligation to "meet the basic

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18. Tommaso Bardelli, Zach Gillespie & Thuy Linh Tu, *Surviving austerity: Commissary stores, inequality and punishment in the contemporary American prison*, 25 PUNISHMENT & PRISON 955, 955-76 (2002); SENT'G PROJECT, *Growth in Mass Incarceration*, https://www.sentencingproject.org/research/ (last visited Mar. 30, 2026).

19. ACLU & GHRC, *supra* note 11 at 17.

20. Leah Wang, *The State Prison Experience: Too Much Drudgery, Not Enough Opportunity*, PRISON POL'Y INITIATIVE (Mar. 12, 2026, 6:52 PM PT).

21. ACLU & GHRC, *supra* note 11 at 17.

22. Brian Nam-Sonenstein, *Shadow Budgets: How mass incarceration steals from the poor to give to the prison*, PRISON POL'Y INITIATIVE (May 6, 2024).

23. ACLU & GHRC, *supra* note 11 at 11.

24. Cal. Council on Crim. Just. & Behavioral Health, *Governor's Enacted State Budget Fiscal Year 2022-23* (Oct. 2022), https://www.cdcr.ca.gov/ccjbh/wp-content/uploads/sites/172/2023/04/CCJBH-Enacted-Budget-FY-2022-23.pdf; Peter Wagner & Bernadette Rabuy, *Following the Money of Mass Incarceration*, PRISON POL'Y INITIATIVE, (Mar. 12, 2026, 6:52 PM PT).

25. Robin McDowell & Margie Mason, *Prisoners in the US are part of a hidden workforce linked to hundreds of popular food brands*, AP NEWS (Jan. 29, 2024). Prison Inmate Labor. Tax Credit, Cal. Prop. 139 (1990).

26. ACLU & GHRC, *supra* note 11 at 11.

human needs of the people it incarcerates".[27] In practice, carceral institutions frequently carry out this obligation through the "principle of less eligibility".[28] Put simply, this principle articulates the idea that if prison is to act as a deterrent, the level of government benefits and public assistance—the general quality of life—afforded to incarcerated individuals must be less than that enjoyed by the lowest social class amongst those who are not incarcerated. To access anything beyond this, incarcerated individuals must rely on family members, informal prison markets, and prison commissaries.

Historically, the commissary system was developed to monopolize the economy within prisons. Early attempts to control incarcerated individuals' use of money, such as banning cash and managing private bank accounts, proved unsuccessful and prone to staff embezzlement. These failed experiments contributed to the establishment of commissary systems in prisons.[29] Commissaries represent a vital means for accessing additional food, autonomy, choice, and dignity, albeit to a severely restricted degree.[30] But they do so through a system of predatory extractivism that demands both labor and the minimal wealth accrued through that labor.[31] These relations of both physical and financial bondage have been productively described in terms of "carceral capitalism"—a concept which connects the carceral economy to the broader capitalist order.[32]

While scholars and advocates have acknowledged the impact of extreme heat in US prisons, granular research on HRIID in prisons remains limited.[33] Access to prison data is difficult to obtain, assuming that such data is recorded at all. Where the data exists, it tends to undercount the true number of illnesses, injuries, and deaths directly and indirectly attributable to heat.[34] Nevertheless, existing research suggests that extreme heat is associated with increased mortality rates in prisons. From 2001–2019, increases of 10°F were associated with a 5.2% increase in mortality in both state and private prisons.[35] Previous work by our team has demonstrated that HRIID within prisons can be attributed to a range of compounding factors, including heat-retaining infrastructure, geographic location, lack of air conditioning, and the widespread prescription of

27. Sharon Dolovich, *Exclusion and Control in the Carceral State*, 16 BERKELEY J. CRIM. L. 258, 267 (2001).

28. Edward W. Sieh, *Less Eligibility: The Upper Limits of Penal Policy*, 3 CRIM. JUST. POL'Y REV. 159, 159-83 (1989).

29. Anna VanCleave, *Prison Banking*, 112 CALIF. L. REV. 1699 (2024).

30. Bardelli, *supra* note 18; Kristen Zgoba, Richard Tewksbury & Elaine Mustaine, *Who gets the biggest bang for the buck? A review of minimum wage and purchasing power in prison commissaries versus superstores*, 43 J. CRIME & JUST. 36, 46 (2025).

31. Joshua Page & Joe Soss, *The predatory dimensions of criminal justice*, 374 SCIENCE 291, 291 (2021).

32. JACKIE WANG, CARCERAL CAPITALISM (2018).

33. Tuholske et al., *supra* note 13, at 394-98.

34. Brunn et al., *supra* note 2, at 1-2.

35. Skarha et al., *supra* note 2.

heat-sensitizing medications to incarcerated populations.[36] Coupled with inadequate prison health management, scarce heat-intervention resources, and the physiological vulnerabilities of an aging prison population, researchers have uncovered both disproportionate exposure and susceptibility to rising temperatures amongst incarcerated individuals.[37]

II. METHODS

A. Data Acquisition

1. Cooling Item Price Data

There is no public database that exhaustively documents data related to California prison commissary stocks, sales, and prices. Through an investigation across prisons in 46 states, a nonprofit news organization, *The Appeal*, collected limited data on the pricing of commissary items.[38] However, this data set did not include all of the data for all the months relevant to our research across the 31 currently-operating California state prisons. As such, the majority of the data we analyzed was collected through Public Records Act (PRA) requests to CDCR. Through these PRA requests, we were able to obtain 1.) commissary lists and 2.) wage data for two two-month periods in 2024. The months of January and February were chosen to represent the coldest part of the year,[39] and the months of July and August were chosen to represent the hottest part of the year.[40] We chose these distinct periods to enable the identification of any potential seasonal variability in the availability or price of cooling items in commissaries.

For purposes of comparison, we also obtained data pertaining to the cost of various cooling items at Walmart, the world's largest retailer.[41] The specific items found in prison commissaries, however, are not always available outside of prison contexts. For example, official regulations stipulate that fans sold in prison commissaries are not to exceed 9 inches, must be made of plastic, and

36. Brunn et al., *supra* note 2, at 1.

37. STEFAN ENGGIST, LARS MØLLER, GAUDEN GALEA AND CAROLINE UDESEN, PRISONS AND HEALTH, WORLD HEALTH ORG. (2014); Skarha et al., *supra* note 2.

38. Elizabeth Weill-Greenberg & Ethan Corey, *Locked In, Priced Out: Commissary Database*, APPEAL (Feb. 26, 2026).

39. Emily K. Studd, Amanda E. Bates, Andrew J. Bramburger, Timothy Fernandes, Brian Hayden, Hugh A. L. Henry, Murray M. Humphries, Rosemary Martin, Bailey C. McMeans, Eric R. D. Moise, Antóin M. O'Sullivan, Sapna Sharma, Brent J. Sinclair, Alex O. Sutton, Pamela H. Templer & Steven J. Cooke, *Nine Maxims for the Ecology of Cold-Climate Winters*, 71 BioScience 820, 820-830 (2021).

40. Sally Younger, *NASA Finds Summer 2024 Hottest to Date*, NAT'L AERONAUTICS & SPACE ADMIN. (Sept. 11, 2024); Rebecca Lindsey, *Past and future temperatures in the United States' hottest month of the year*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Jul. 9, 2023).

41. Art Weinstein, Kristen Anti & Esteban Ochoa, *World's Biggest Retailer Launches Walmart Plus and Customers Have Their Say*, 43 J. BUS. STRATEGY 381 (2022).

have a purchase value no higher than $30.[42] As such, comparator items from Walmart were chosen based on their relative similarity (along the lines of brand, size, and function) to those found in prison commissaries. In cases where no adequately similar item could be found (such as a reusable bottle), we chose the lowest-price item of that type available for purchase at Walmart. Notably, while our data from prison commissaries reflects prices in 2024, we were unable to find historical Walmart pricing data from the same period. We instead adjusted Walmart prices from 2026 using the Consumer Price Index (CPI) formula, which measures the average inflation and deflation amongst consumer goods and services within the United States.[43] To determine CPI adjusted price (P) for 2024, we divided each Walmart price from 2026 by a product of inflation rates from 2025 and 2026 (*equation 1*).[44]

$$P(\$) = \frac{2026\ Walmart\ Price\ (\$)}{(1 + Inflation\ Rate\ 2025) \times (1 + Inflation\ Rate\ 2026)} \quad (equation\ 1)$$

42. Cal. Dep't. Corr. & Rehab. (CDCR), Authorized Personal Property Schedule (APPS) 16, 76 (revised July 6, 2020), https://www.cdcr.ca.gov/regulations/wp-content/uploads/sites/171/2020/07/APPS-07.06.20.pdf. Notably, these regulations stipulate a lower purchasing value ($25) for incarcerated men.

43. U.S. BUREAU LAB. STATS., CONSUMER PRICE INDEX: *CONCEPTS* (2025).

44. U.S. CONG. JOINT ECON. COMM., MONTHLY INFLATION UPDATE (Feb. 2026).

Item	Commissary Price Range	Median Commissary Price	2026 Walmart Price	2024 Walmart Price (CPI Adjusted)
Cooling Towel	$11.80 – $13.15	$11.80	$11.88	$11.30
Personal Fan	$23.20 – $27.00	$25.10	$10.32	$9.82
Single-Use Bottled Water	$0.70	$0.70	$2.38	$2.26
Hat/Cap	$2.70 – $12.50	$5.05	$4.99	$4.75
Electrolyte Packet	$0.35 – $2.05	$1.35	$0.16	$0.15
Tumbler/Mug/Bottle	$0.40 – $12.50	$2.35	$1.22	$1.16
Washcloth	$0.30 – $1.00	$0.95	$1.24	$1.18

Figure 1: List of cooling items identified in CDCR's commissary lists alongside their respective price ranges and median price. Walmart prices for either the cooling item closest to the item offered in CDCR commissaries or the cheapest available option from 2026 are listed in the second-to-last column in order to calculate purchasing power for non-incarcerated workers, with the CPI adjusted price in the final column. Tumblers, mugs, and bottles are grouped into one item for analysis because they serve the same purpose as containers for drinking water.

2. Wage Data

Wages are standardized across California prisons.[45] Salary ranges are established for incarcerated workers at each "skill level," as defined by CDCR (see Figure 2). To analyze the purchasing power of non-incarcerated workers, we chose to use the minimum wage of workers in California. As Walmart prices were adjusted from 2026 prices to 2024 prices using the CPI formula, analysis was conducted using California's minimum wage for 2024.

45. *See* CAL. CODE REGS. tit. 15, § 3041.2(a)(1) (2024).

Wage Tier	Wage Range Per Hour
Level 1 - Lead Person	$0.64 – $0.74
Level 2 - Special Skill	$0.38 – $0.64
Level 3 - Technician	$0.30 – $0.48
Level 4 - Semi Skilled	$0.22 – $0.36
Level 5 - Laborer	$0.16 – $0.26
California Minimum Wage (2024)	$16.00

Figure 2: Wage range per hour worked for the five wage tiers outlined by CDCR. The last row of this table includes the minimum wage for non-incarcerated workers in California, which came into effect on January 1st, 2024.[46]

B. Determination of Purchasing Labor Hours for Incarcerated Workers in California

The items we chose to analyze were selected based on their (1) availability in prison commissaries and (2) capacity to directly or indirectly enable cooling. To calculate purchasing labor hours for each cooling item (T), we divided prices by wage per hour at each wage tier (*equation 2*). Due to an asymmetrical distribution of prices and the occurrence of outliers across CDCR prisons, we used the median item price for our calculations. In regard to wages, we used the midpoint of each wage tier. Wages and wage tiers are standardized across all CDCR facilities; however, commissary pricing is not. To accurately capture variations in purchasing labor hours across CDCR prisons in light of these variations in commissary pricing, we also performed the same calculations using the maximum price (*equation 3a*) and minimum price (*equation 3b*) for each item.

46. Cal. Dep't of Indus. Rel., *Minimum Wage Frequently Asked Questions*, https://www.dir.ca.gov/dlse/faq_minimumwage.htm (updated Dec. 2025).

$$T(hours) = \frac{median\ price\ of\ cooling\ item\ (\$)}{midpoint\ of\ wage\ tier\ (\$/hour)} \quad (equation\ 2)$$

$$T_{max}(hours) = \frac{maximum\ price\ of\ cooling\ item\ (\$)}{midpoint\ of\ wage\ tier\ (\$/hour)} \quad (equation\ 3a)$$

$$T_{min}(hours) = \frac{minimum\ price\ of\ cooling\ item\ (\$)}{midpoint\ of\ wage\ tier\ (\$/hour)} \quad (equation\ 3b)$$

C. Determination of Purchasing Labor Hours for Non-Incarcerated Minimum Wage Workers in California

We calculated the purchasing labor hours of a minimum wage worker ($T_{minwage}$) in California by dividing the price of a comparable item at Walmart by the minimum hourly wage (*equation 4*).

$$T_{minwage}(hours) = \frac{price\ of\ cooling\ item\ at\ Walmart\ (\$)}{California\ minimum\ wage\ (\$/hour)} \quad (equation\ 4)$$

We then compared the number of labor hours required for purchasing various cooling items for minimum wage workers in California and incarcerated workers at various wage tiers.[47]

III. RESULTS

A. Comparison of Availability and Price of Cooling Items Between Facilities and Seasons

According to data obtained via PRA requests from CDCR, there was generally little difference in the availability and pricing of cooling items between winter and summer months (with notable exceptions described below). There were, however, significant differences in availability between facilities.

47. For the sake of simplicity, taxes were not analyzed because incarcerated workers are excluded from both taxes and benefits, including the Earned Income Tax Credit and Child Tax Credit. *See* Stephanie Hunter McMahon, *Prison Work is Taxing and Should Be Taxed*, TAX NOTES (Sept. 5, 2022).

1. Cooling Towels

Three out of the thirty-one California state prisons (9.7%) offered cooling towels through their commissaries. Cooling towels increased in price at the California Institute for Women ($11.80 to $13.15) from the winter to summer months.

2. Personal Fans

Three out of thirty-one California prisons (9.7%) offered personal fans in their commissaries. However, one of those three prisons, the California Institute for Men (CIM), did not release the price of its fans. CIM was the only prison to offer fans in both the winter and summer seasons; the other two prisons only offered fans in the summer months.

3. Bottled Water

Sixteen out of the thirty-one prisons (52%) offered bottled water, most commonly Aquafina brand, in commissaries. California Correctional Institution (CCI) only offered bottled waters during the winter months.

4. Baseball Caps

Twenty-five out of the thirty-one prisons (81%) offered baseball caps. One of these, Centinela State Prison (CEN), only offered baseball caps during winter months, but the rest offered them during both seasons.

5. Electrolytes

Twenty-five out of the thirty-one prisons (81%) offered powder electrolyte mixes that can be added to water to boost hydration, in both seasons.

6. Tumblers, Mugs, and Bottles

Twenty-eight out of the thirty-one prisons (90%) offered tumblers, mugs, bottles, or some combination thereof, in both seasons.

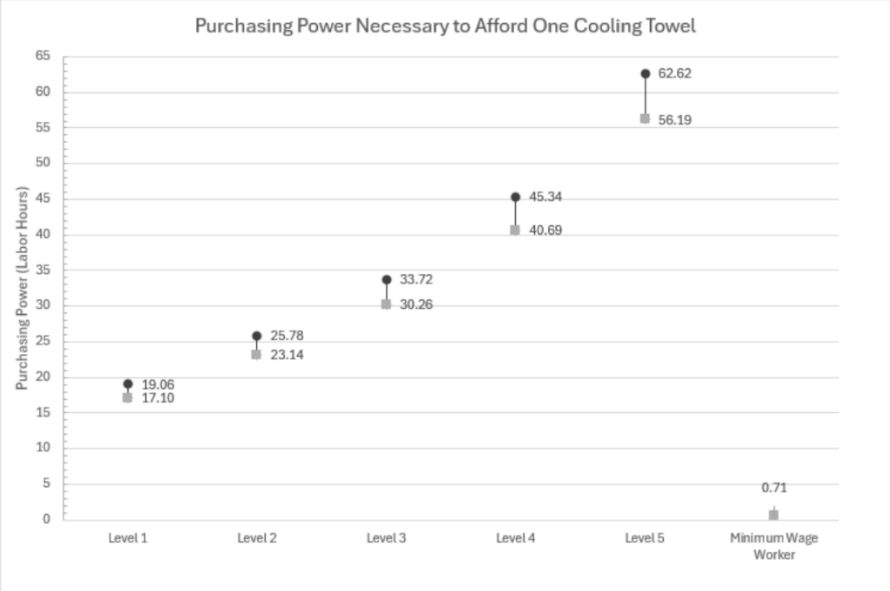
7. Washcloths

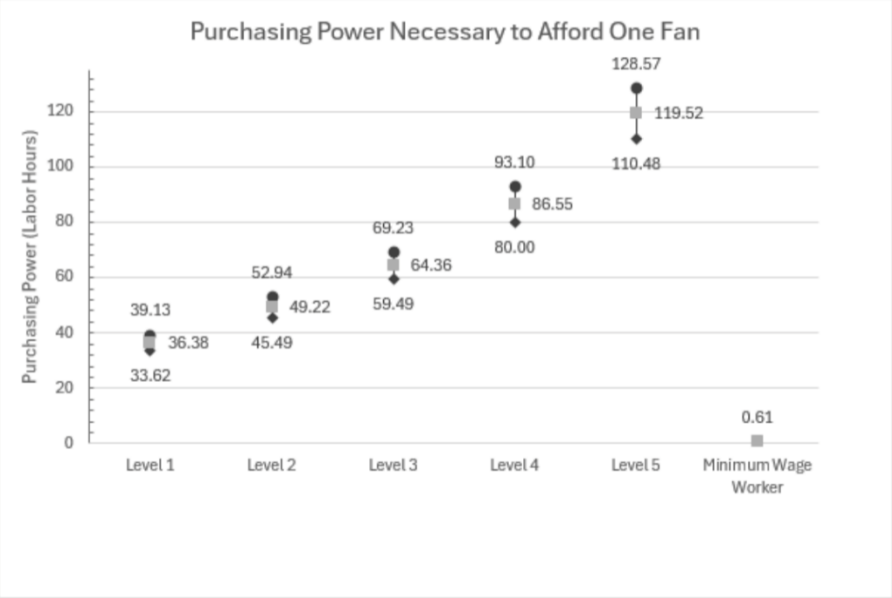
Twenty-seven out of the thirty-one prisons (87%) offered washcloths in both seasons.

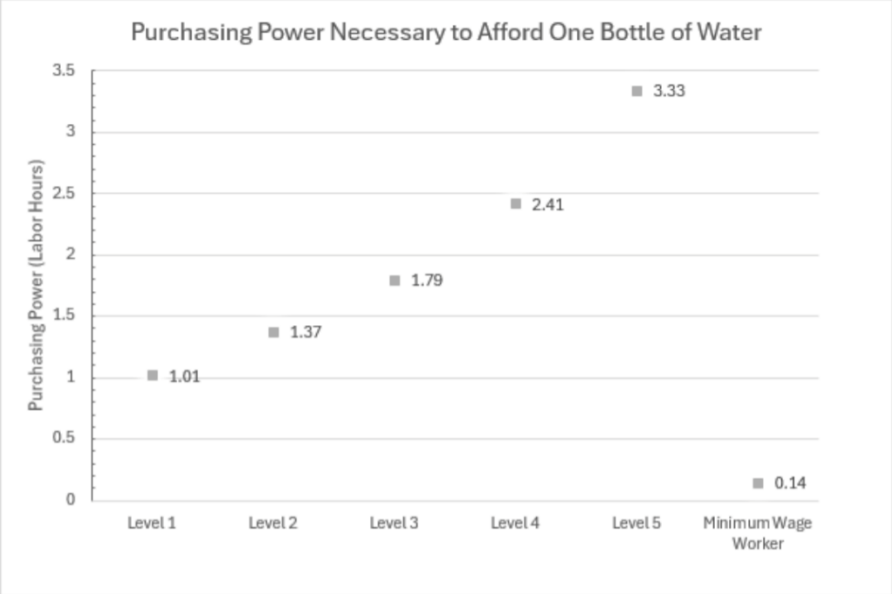
B. Comparison of Purchasing Labor Hours Between Incarcerated Wage Tiers and Non-Incarcerated Minimum Wage

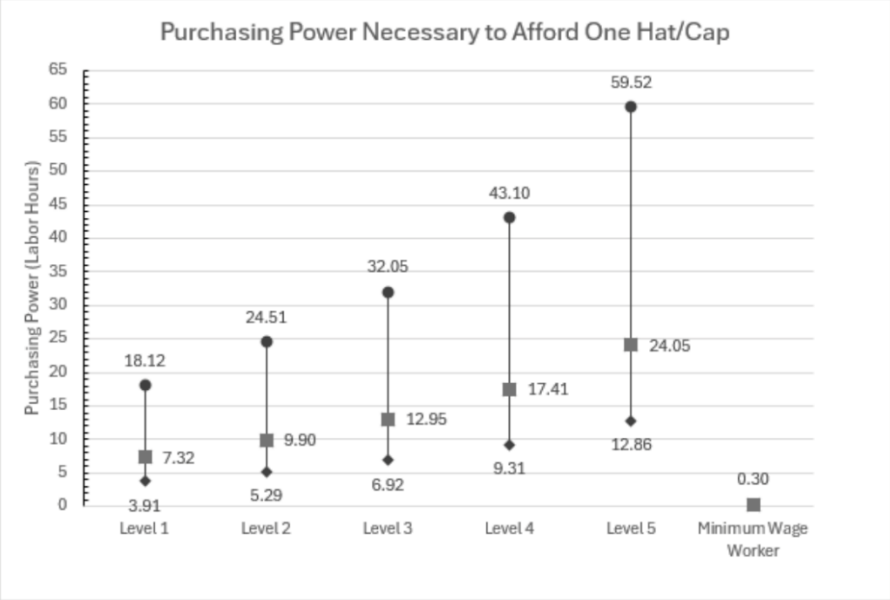
To purchase the same (or similar) cooling item, we found a significant difference between the labor hours required for incarcerated workers across all wage tiers when compared to the hours required for a minimum wage worker in California. We also found a significant difference between the labor hours

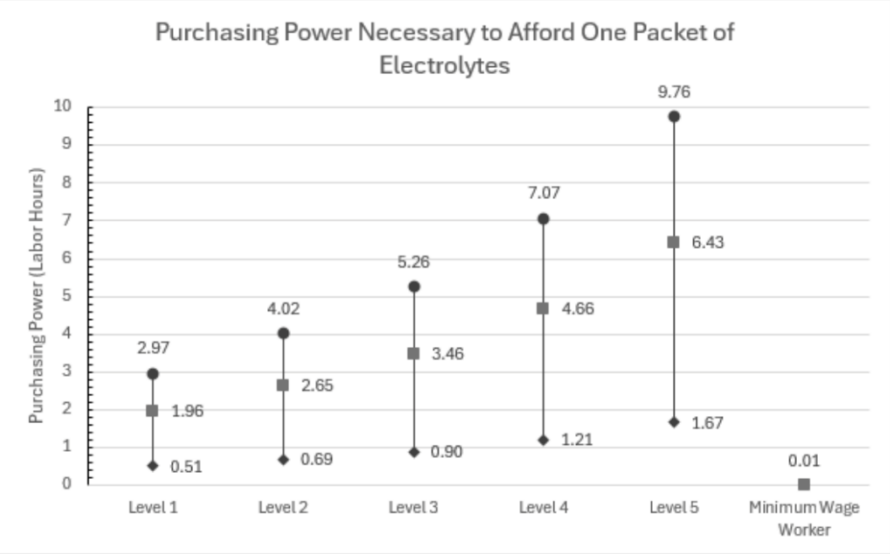
required for Level 1 incarcerated workers when compared to Level 5 incarcerated workers.

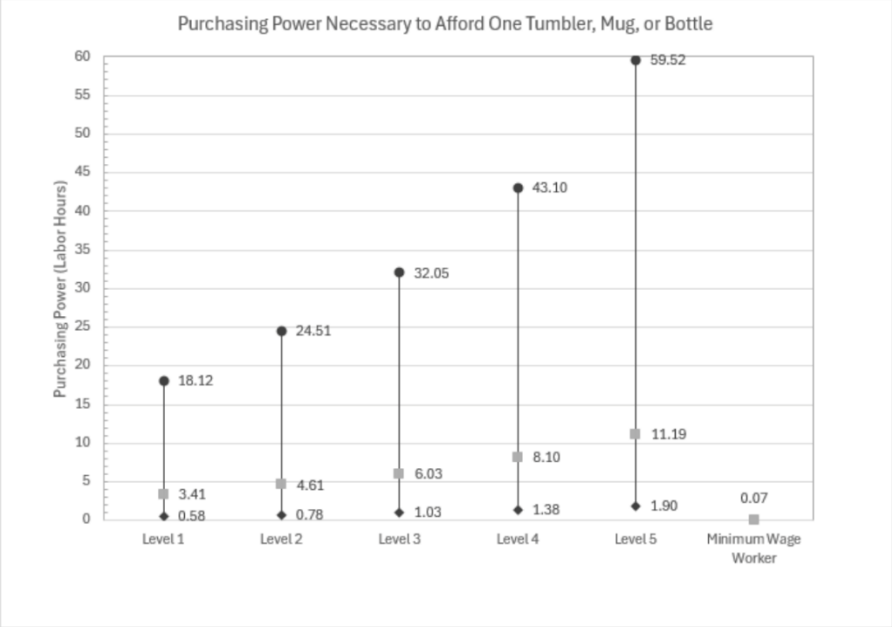



Purchasing Power Necessary to Afford One Fan
Purchasing Power (Labor Hours)
0
20
40
60
80
100
120
39.13
36.38
33.62
52.94
49.22
45.49
69.23
64.36
59.49
93.10
86.55
80.00
128.57
119.52
110.48
0.61
Level 1
Level 2
Level 3
Level 4
Level 5
Minimum Wage Worker


Purchasing Power Necessary to Afford One Bottle of Water
Purchasing Power (Labor Hours)
0
0.5
1
1.5
2
2.5
3
3.5
1.01
1.37
1.79
2.41
3.33
0.14
Level 1
Level 2
Level 3
Level 4
Level 5
Minimum Wage Worker


Purchasing Power Necessary to Afford One Hat/Cap
Purchasing Power (Labor Hours)
65
60
55
50
45
40
35
30
25
20
15
10
5
0
18.12
7.32
3.91
24.51
9.90
5.29
32.05
12.95
6.92
43.10
17.41
9.31
59.52
24.05
12.86
0.30
Level 1
Level 2
Level 3
Level 4
Level 5
Minimum Wage Worker


Purchasing Power Necessary to Afford One Packet of Electrolytes
Purchasing Power (Labor Hours)
10
9
8
7
6
5
4
3
2
1
0
2.97
1.96
0.51
4.02
2.65
0.69
5.26
3.46
0.90
7.07
4.66
1.21
9.76
6.43
1.67
0.01
Level 1
Level 2
Level 3
Level 4
Level 5
Minimum Wage Worker



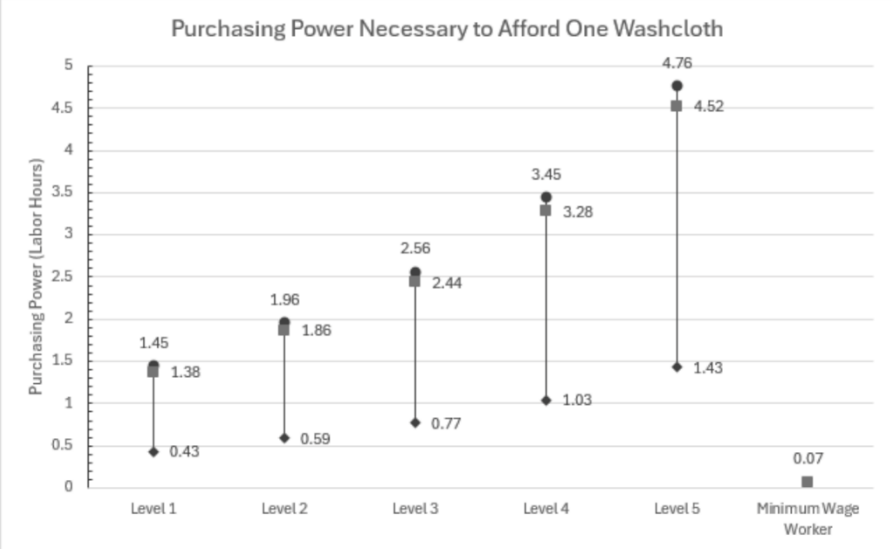


Figure 3: Purchasing power (labor hours) of incarcerated workers at each wage tier. Calculations were made to determine how many hours of labor were needed to purchase each cooling item by using the minimum, maximum, and median prices for each item and the midpoint salary for each wage tier. For the purposes of comparison, graphs also indicate the purchasing power of non-incarcerated minimum wage workers in California. In the graph depicting purchasing labor hours for cooling towels, the median and minimum price were equal. In the graph depicting purchasing labor hours for bottles of water, item price was uniform across all prisons where data was available.

IV. ANALYSIS

The number of labor hours required to purchase *any* cooling item for those at the midpoint of the highest wage tier (Level 1) is between 7.21 and 196 times that of a non-incarcerated minimum-wage worker. For an incarcerated worker at the midpoint of the lowest wage tier (Level 5), it would take between 64.57 and 643 times as many hours as a minimum-wage worker to purchase a cooling item. The number of hours a minimum-wage worker would need to work to purchase a cooling item at Walmart prices ranges from 0.01 hours (0.6 minutes) to 0.7 hours (42 minutes). Alternatively, an incarcerated worker at the highest wage tier would need to work a minimum of 0.43 hours (25.8 minutes) to a maximum of 39.13 hours (2,347.8 minutes) to obtain any cooling item.

Importantly, there is a broad range in the number of labor hours required for purchasing cooling items across the different wage tiers of incarcerated workers. For example, the number of purchasing labor hours required for a Level 1 worker to afford any cooling item is approximately 3.29 times lower than for a Level 5 worker. In concrete terms, a Level 5 worker would have to accrue about 119.52 hours of labor to purchase a fan—about three full weeks of work at 40 hours per week, and approximately 83 more hours of labor than a Level 1 worker. For a minimum wage worker in California, a similar fan would require less than 1 hour of work.

Purchasing labor hours vary significantly due to the broad price range of individual cooling items. For example, the prices of mugs, tumblers, and reusable bottles vary widely across prisons, resulting in a real cost ranging from 1.9 hours to 59.5 hours among Level 5 workers. By comparison, the number of labor hours required to purchase a fan ranges between 110.5 hours and 128.6 hours amongst Level 5 workers.

V. LIMITATIONS

The limitations we encountered reflect a fundamental problem experienced by many researchers focused on the American carceral system: much of the data must come from the carceral system itself. Relying on CDCR for data imposed several important constraints on our analysis. Fundamentally, we needed to trust in the accuracy of the data generated by CDCR with no ability to assess their methods of data gathering. Moreover, three of our PRA requests were denied outright. Even in cases where requests were not denied, some prisons did not release all of the requested records. For instance, California State Prison, Corcoran only provided the requested sales data for the summer months. Records were often incomplete, missing crucial information, or difficult to interpret due to inconsistent formatting and poor document quality.

Put simply, our use of CDCR data raised a series of important questions related to methodology (how was the data gathered?), data quality (was it accurate?), and transparency (how much of the existing data was made available to us?). As a result, it is impossible to say whether, for example, it is true that

only 3 of CDCR's facilities had fans available in their commissaries—or whether this simply means that only 3 facilities *reported* that they had fans available in their commissaries.

We were also unable to acquire data about how many hours incarcerated people at each wage tier *actually* worked. As such, we are only able to calculate how many hours they would need to work to afford a given cooling item—but not how long it would take them to accrue these hours. For example, an incarcerated worker might accumulate 40 labor hours' worth of purchasing power in the course of a single week—or it might instead require several weeks, depending on how many hours of work they were allowed or required to perform.

Moreover, the wage and commissary data we collected does not entirely capture the complexity of the carceral economy and those affected by it. Cooling items may be obtained through means other than the commissary system, including: family care packages, contraband, and external packages purchased via approved vendors. Future research might attempt to incorporate these other means of obtaining both funds and cooling items to determine (1) the extent to which incarcerated wages are the primary determinant of purchasing power, (2) the economic impact on family members who provide support for incarcerated relatives, and (3) the financial capacity of family members to provide this support in light of socioeconomic disparities beyond the prison walls.

It is also important to note that a single wage tier might not consistently include the same jobs across CDCR prisons. For instance, a dishwasher may be considered a Level 1 job in one prison but Level 2 at another. In addition, specific work programs and restitution recovery programs introduce additional variations in purchasing power. Up to half of the wages of incarcerated workers may be withheld for restitution and other obligations.[48] Therefore, the wage ranges listed for each tier might not accurately reflect the income actually available to an incarcerated worker for commissary purchases.

Even when incarcerated workers have money, they cannot always spend it. Prison commissaries are only open during certain hours and days of the month. In addition, an incarcerated individual's security classification and privilege group allotment determines their weekly spending limits. These privilege groups are determined, at least in theory, by the incarcerated individual's perceived behaviors and capabilities, adherence to rules, and work assignments.[49]

VI. DISCUSSION

In 2026, California's Division of Occupational Safety and Health (Cal/OSHA) finally released a draft of heat standards specific to correctional facilities. It is unclear when and if these standards will be implemented.

48. CDCR, *Sending money*, https://www.cdcr.ca.gov/family-resources/send-money/ (last visited Mar. 12th, 2026).

49. CAL. CODE REGS. tit. 15, § 3044: Incarcerated Person Work Groups and Privilege Groups (2025).

Moreover, these draft standards are far less protective than California's general indoor heat standards, which apply to non-carceral work environments across the state.[50] At the same time, CDCR facilities continue to suffer from a lack of universal air conditioning, even as temperatures continue to climb.[51] Our analysis illustrates that California's incarcerated population has limited options for adapting to the heat. Incarcerated workers face a paradox: they must often endure heat (through ambient exposure as well as metabolic heat generated by their labor) in order to have the means to purchase items that might help with cooling.[52]

The commissary system presents its own set of challenges. First and foremost, its monopoly over the sale of cooling items in prisons means that the types of products, their availability, and their pricing are established in an environment bereft of competition. Incarcerated consumers have limited options: they cannot immediately go to another store if they do not like the kinds of items available at the commissary or if they feel that items are priced too high.

Similarly, incarcerated individuals are often required to work within a monopsonistic environment where there is only one employer: the prison. There is no one else to whom they can sell their labor. Monopsonies encourage not only wage suppression but outright exploitation. This is evident not only in the wide gulf between minimum wage workers outside of prisons and the highest paid workers within them, but also by the fact that work within prisons is fundamentally coerced: incarcerated workers do not have the right to refuse.

Between the relatively high costs of monopolistic commissaries and the manifestly low wages of a monopsonistic prison administration, the purchasing power of incarcerated workers is extremely compromised. Yet, because American prisons tend to operate through the "principle of less eligibility," they have consistently failed to uphold their obligations to those they incarcerate.[53] As such, commissary purchases remain one of the only means available for adapting to worsening climatic conditions.

At the same time, many of the goods available through commissaries are of little and sometimes fleeting utility. Water bottles must be constantly replenished; they represent only a temporary mode of cooling. Fans offer a longer-term solution—they can be constantly re-used, at least until they break—

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50. Nicholas Shapiro & Bharat Jayram Venkat, *California Will Finally Have Indoor Heat Standards for Workplaces — With a Cruel Exception*, L.A. TIMES (Jul. 8, 2024); Cal. Dep't of Indus. Rel., *Indoor Heat Illness Prevention in Correctional and Detention Facilities*, https://www.dir.ca.gov/dosh/doshreg/heat-illness-corrections/ (last visited May 29, 2026).

51. Jeane Kuang, *Complaints about California's hellishly hot prison cells have been mounting for years*, CALMATTERS (Sept. 5, 2025).

52. When engaging in strenuous labor, bodies meet increased energy demands by heightening production and breakdown of adenosine triphosphate—reactions which produce heat as a byproduct. *See* Peter Krustrup, Richard A. Ferguson, Michael Kjaer & Jens Bangsbo, *ATP and heat production in human skeletal muscle during dynamic exercise: higher efficiency of anaerobic than aerobic ATP resynthesis*, J. PHYSIOLOGY (Mar. 21, 2003).

53. Sieh, *supra* note 28, at 159-83.

but under particularly hot conditions, they are likely to recirculate hot air rather than offer real cooling.[54] Hats might provide some protection against direct sunlight but do little to ward off the effects of ambient heat exposure or metabolic heat generation. In the absence of air conditioning, such goods represent important, but inadequate, forms of climate adaptation for those with limited purchasing power and limited agency over their living and working conditions.

Our analysis offers a new means of describing the relationship between heat and incarceration through an economic lens, one that helps us better understand how vulnerability to (and protection from) the heat is premised on the predatory extraction of labor and wealth from incarcerated individuals. The commissary system functions as a highly prohibitive, monopolistic market where low wages, limited paid work hours, and inflated prices contribute to the low purchasing power of incarcerated individuals.

While our analysis indicates the number of laboring hours required for an incarcerated worker to purchase a particular cooling item, we have not addressed the fact that the purchase of a smaller item while a worker is saving up can reset the clock. For example: buying a few bottles of water, or packets of electrolyte mix, might be vital for an incarcerated worker trying to stay cool. But in making these purchases, they postpone—possibly indefinitely—the purchase of a long-term cooling device like a fan. One form of relief is purchased at the expense of another. Moreover, incarcerated consumers also have to choose between cooling items and other basic necessities including food and hygiene products. The result is a partial, deeply constrained, and incomplete climate adaptation strategy—one that is grievously insufficient, particularly in light of the absence of adequate air conditioning.

A helpful parallel can be found in climate-related discussions around energy poverty, a situation in which people have limited access to reliable, affordable energy to meet their basic needs. High temperatures represent one context in which the crisis of energy poverty can become exacerbated: those with air conditioning must often decide between running their air conditioning and putting food on the table. The cost of energy must be weighed against the price of food. To an even greater degree, incarcerated people must make impossible choices about what they need most; they must guess whether the heat they experience will be dangerous or just extremely uncomfortable, and they must decide which purchase will serve them best.

To better understand how incarcerated populations attempt to adapt to climate change under extremely constrained conditions requires greater access to higher quality data. Our analysis is deeply dependent on data generated and shared by CDCR. Yet, we have limited understanding of how it was gathered and whether it is accurate. The culture of secrecy pervading the American carceral system ensures that we remain in the dark about the conditions of work

54. Meade et al., *supra* note 7, at e256-57, e261.

and life within prisons. In the absence of such data, it becomes difficult to accurately characterize the degree of climate-related vulnerability experienced by incarcerated populations. Nevertheless, we believe that our analysis of purchasing power clearly demonstrates that even inadequate climate adaptation strategies—like buying a fan—remain largely out-of-reach for incarcerated workers constrained by low wages and high prices. The real cost of cooling might be measured in labor hours, but the cost of *not* cooling will be measured in lost lives.