

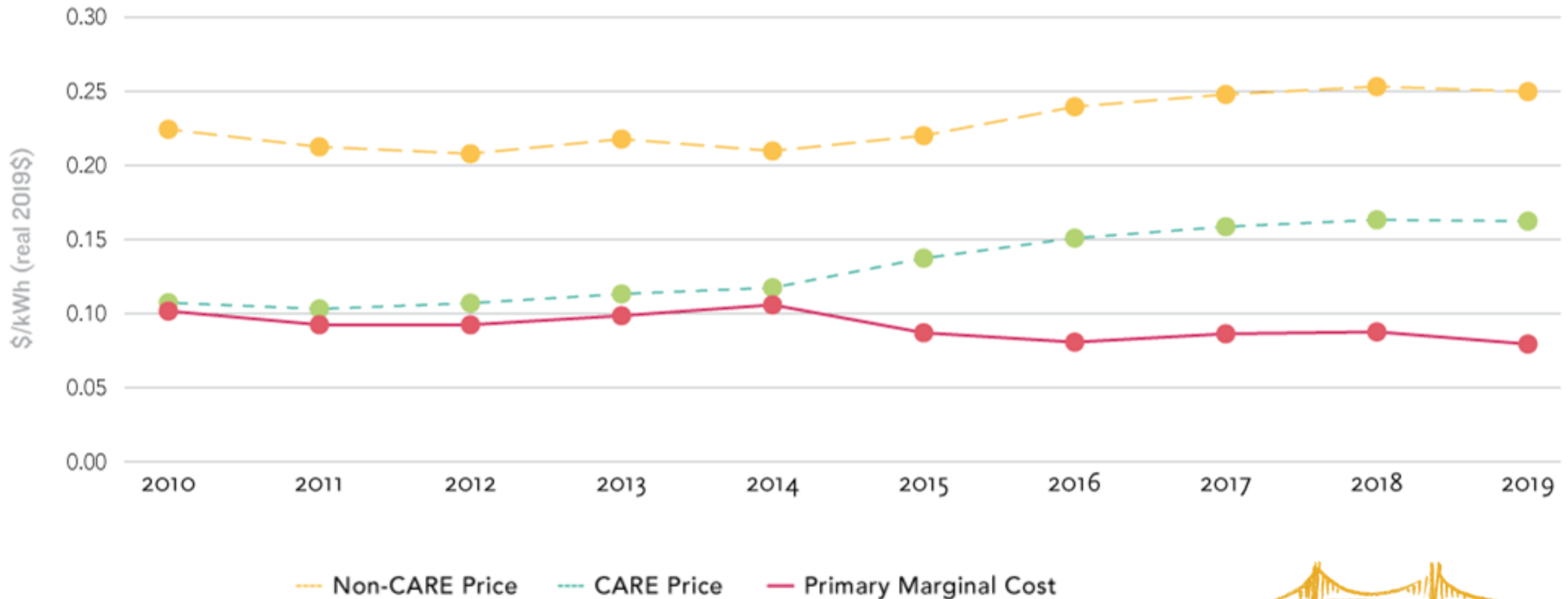
# Ensuring Affordability for California's Electricity Customers

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# California's residential electricity prices are too high

Residential Retail Electricity Prices (CARE and non-CARE) Versus Marginal Social Cost (PG&E Territory)



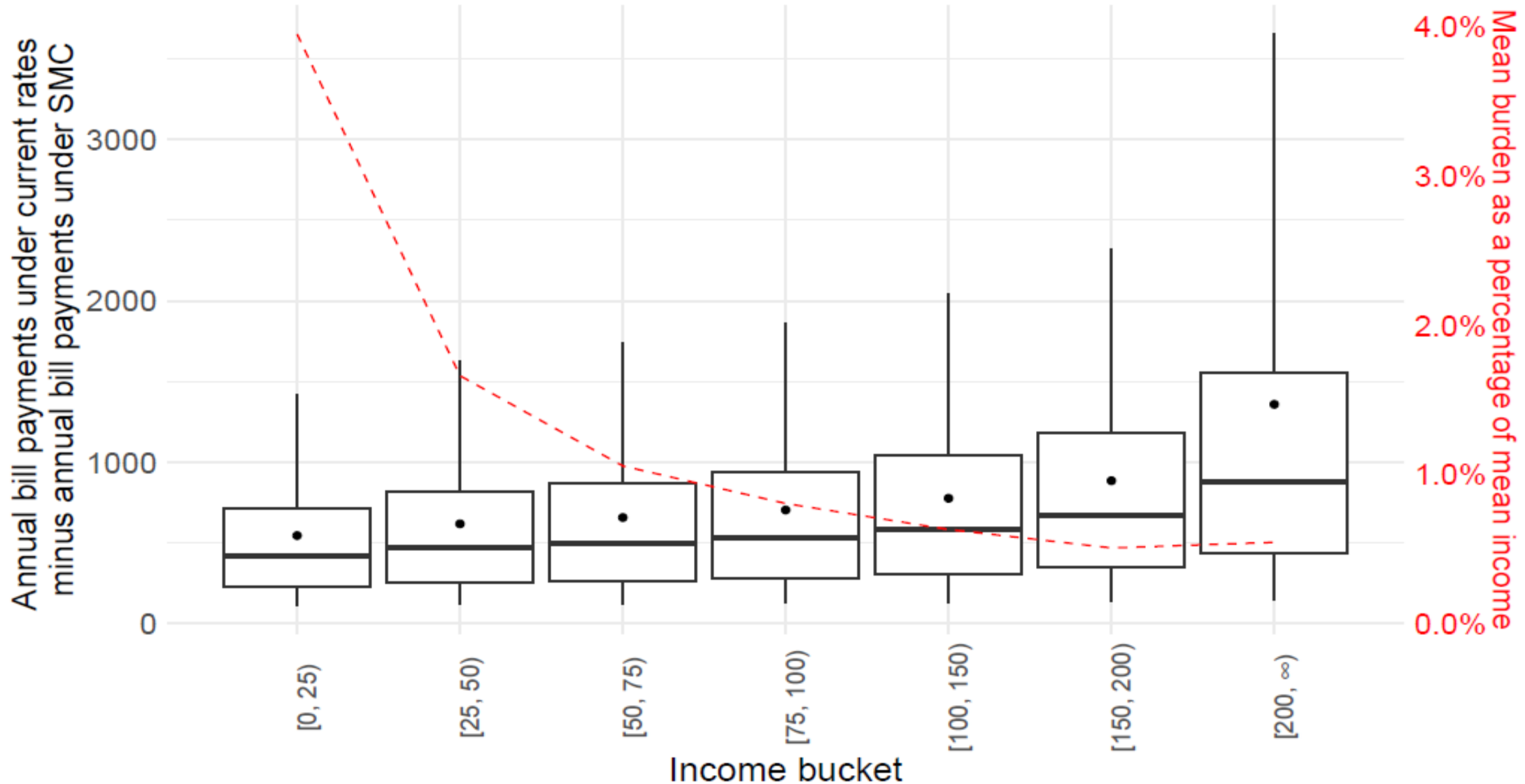
# New work extends our previous aggregate analysis

- We use detailed billing data to capture the full distribution of household-level bill impacts under the current retail price regime.
- We develop a new approach to estimating household-level income to provide a clearer picture of how the cost burden is distributed along the income dimension.
- We analyze an income-based fixed charge that is designed to improve efficiency and address mounting concerns about affordability/equity.

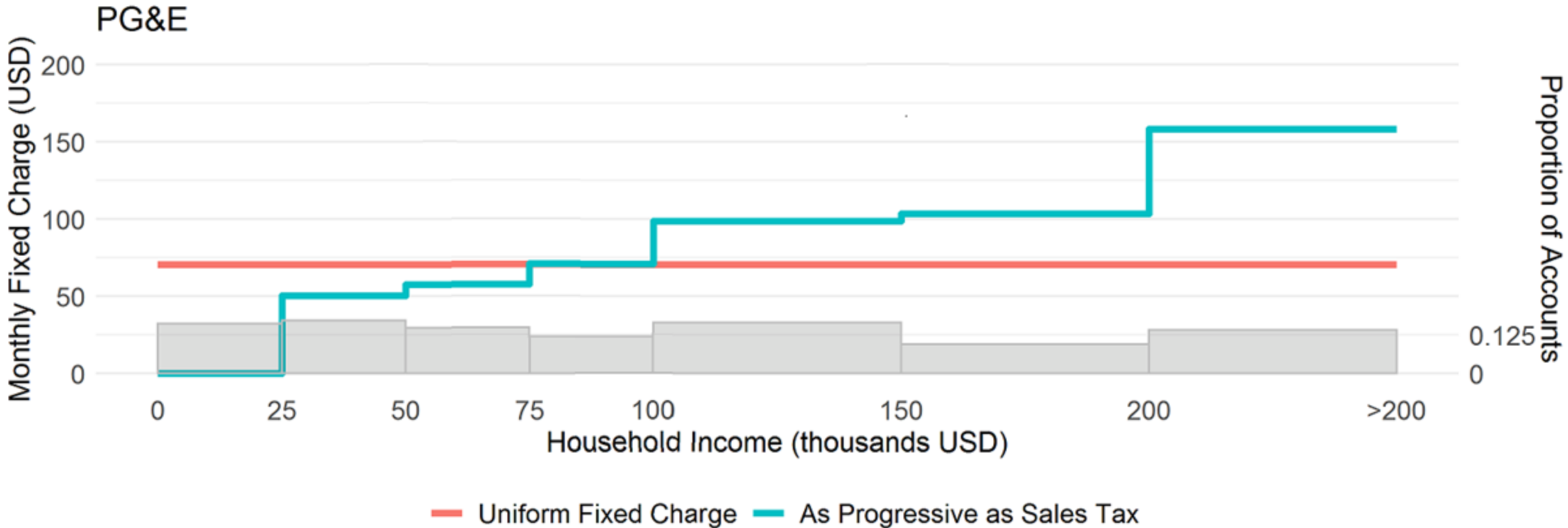
# Household-level cost recovery burden

- We observe monthly bills and monthly consumption for ~11 M California households (2017-present).
- We calculate household-level “cost recovery burden” as the annual expenditures in excess of what a household would pay if the retail price was set efficiently to reflect the social marginal cost (SMC).
- Lacking hourly data, we allocate monthly consumption across hours according to typical patterns of residential consumption.

# How does this cost burden vary with income?



# A more equitable (and more efficient) retail rate structure...



Note: Each scheme depicted recovers the same amount of revenue. The gray histogram shows the proportion of accounts in each of the seven pricing tiers in each service territory. Household distribution by income from the American Community Survey. Rates are the author's calculations based on cost recovery gap estimated in this study using proportional fees across septiles.



# Income-based fixed charges (IBFC)

- To implement an IBFC, IOUs would need credible information about household income.
- Other agencies already have this income information:
  - The Franchise Tax Board has the best available data at individual level
  - US Census has income information at the neighborhood level.
- Our report describes how IOUs might collect income information themselves or leverage existing data sources.
- We identify strengths and weaknesses of each alternative.

# Key challenges to implementation

- Challenging for IOUs to measure income without state help
  - Customers will have an incentive to misrepresent income if not verified
  - Misrepresentation likely to be worse than under CARE
  - Large paperwork burden/privacy concerns if IOUs require documentation
- Using neighborhood characteristics is lower cost, but has problems:
  - Census data reveal large income variation within smallest units provided by Census (i.e. census block groups)
  - Economic theory and data suggest that landlords/current owners would gain much of the benefit, not tenants
- Middle ground with limited information coordination seems most appealing

***Reminder: Using state revenue to recover costs avoids all these implementation challenges and can easily create a progressive rate***



# One possible model to implement an IBFC



- **Objective:** facilitate reliable information sharing while also minimizing burden to IOUs and FTB, and preserving customer choice/privacy.
- One example process: customers have three choices
  - Accept default rate (e.g., maximum)
  - Verify their income on their own
  - Opt-in to allow IOU to query FTB regarding income category
- For those who opt-in, the state shares *categorical* information with IOU
- Customers have a right to dispute

# An alternative proposal: Minimum Bills?

- Minimum Bill requires payment of certain amount per month regardless of level of consumption
- Electricity is free to the customer up to the minimum bill amount
- Additional contribution to revenue requirement would be the difference between minimum bill amount and the amount due under the tariff
- Based on 2019 PG&E data:
  - \$30/month minimum bill (\$1/day) would raise \$0.1b per year
  - \$60/month minimum bill (\$2/day) would raise \$0.5b per year

# Conclusion

- California retail electricity rates are high because we use them to pay for many things that are not incremental costs of providing electricity
  - Actual avoidable cost of electricity supply is  $\frac{1}{3}$  to  $\frac{1}{2}$  of retail price
- This amounts to a tax on electricity consumption which is extremely regressive relative to other taxation alternatives (e.g. sales tax).
- Alternative approaches to paying for these expenses
  - state budget - obvious economic choice for many programs
  - income-based fixed charge - possibly could help cover system fixed costs in less regressive and more efficient structure
  - minimum bill - minimum bills suggested would raise little revenue and would likely be regressive

# Thank you

## Comments encouraged!

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