CHARACTERIZATION OF UTILITY PROGRAM ENROLLMENT BY INCOME AND REGION

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- Equity by geography, income

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From Pacific Gas and Electric, via the Wharton Customer Analytics Initiative:

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Source: *(3)*

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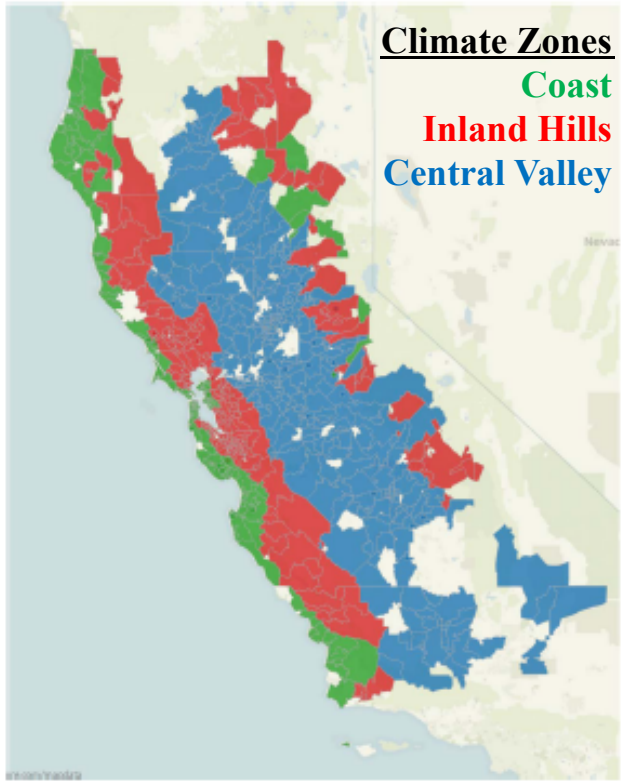
Regions of PG&E



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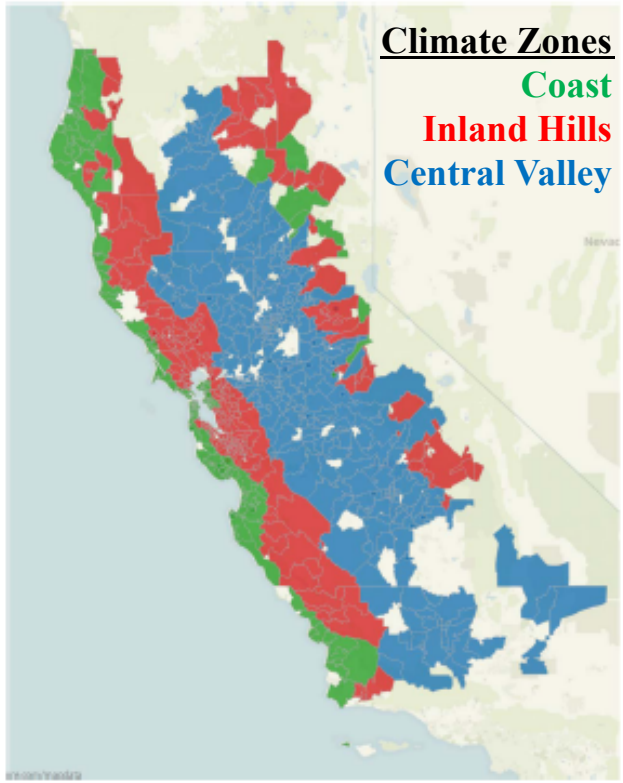

	Coast	Inland Hills	Central Valley
Median income	63,000	79,000	52,000
% with AC	~15%	~60%	~95%
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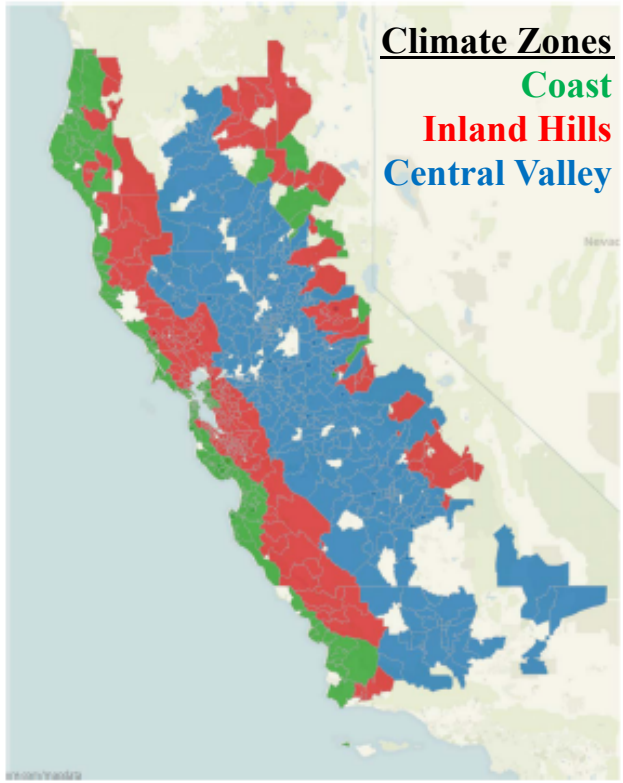

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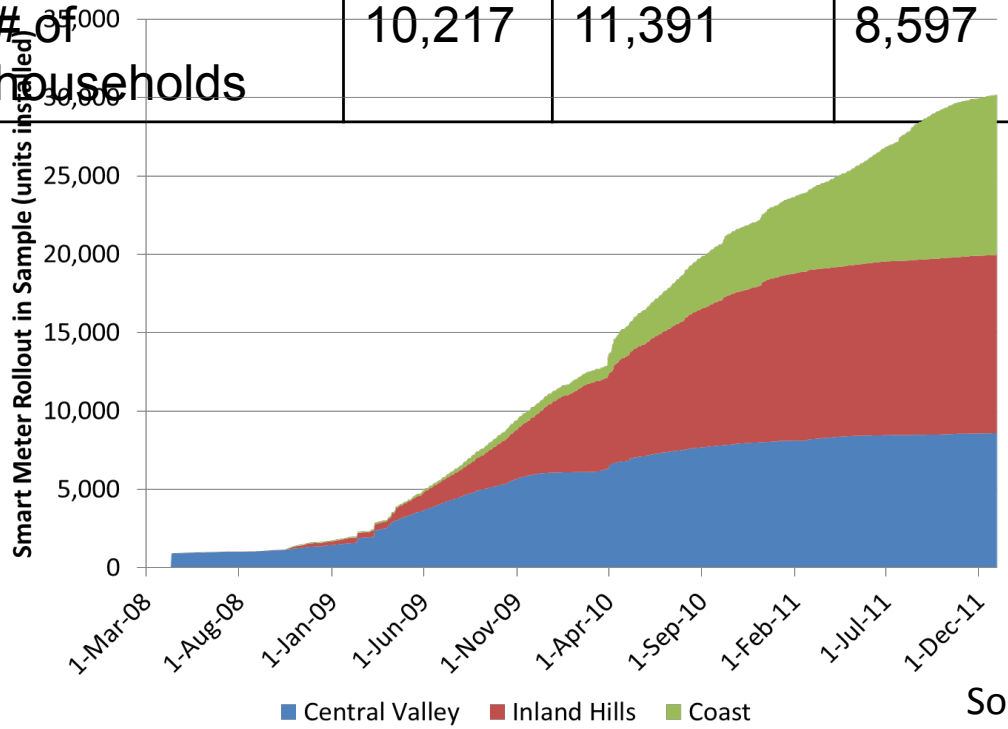

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- Smart AC
  - Direct load control by utility during peak events

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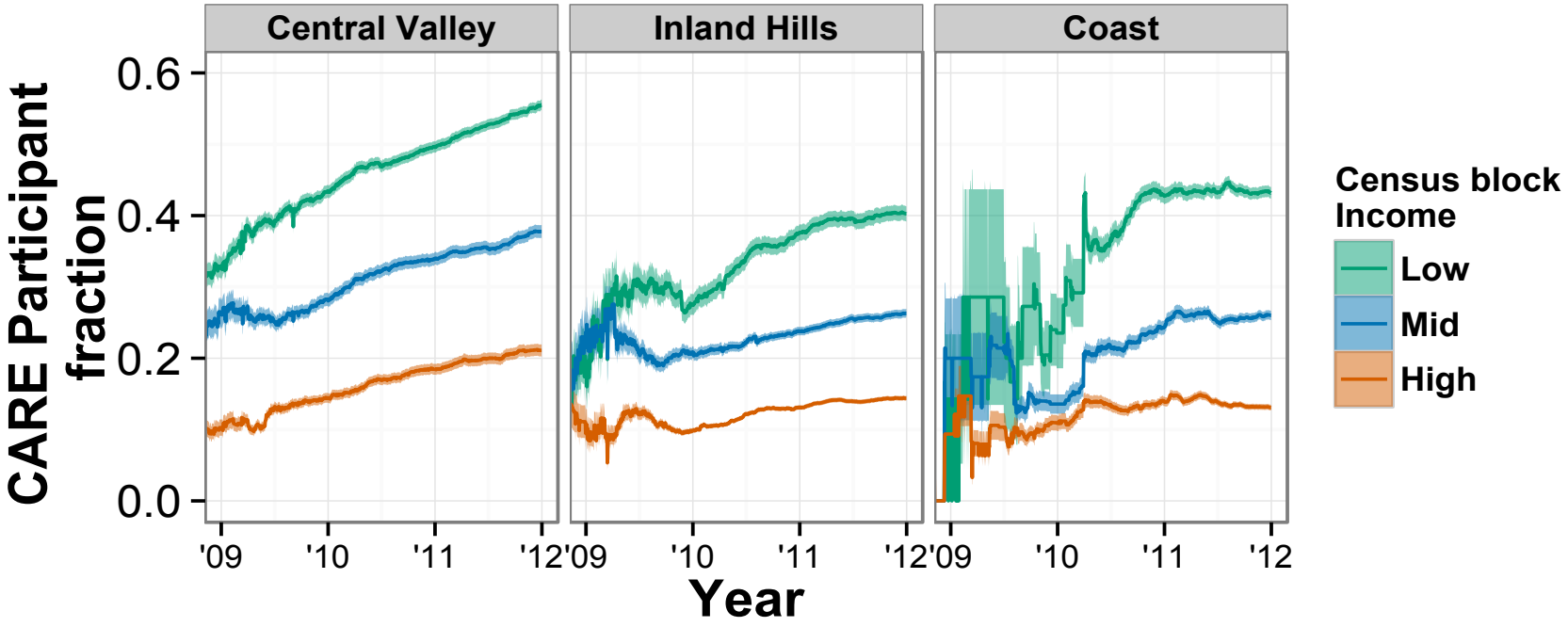
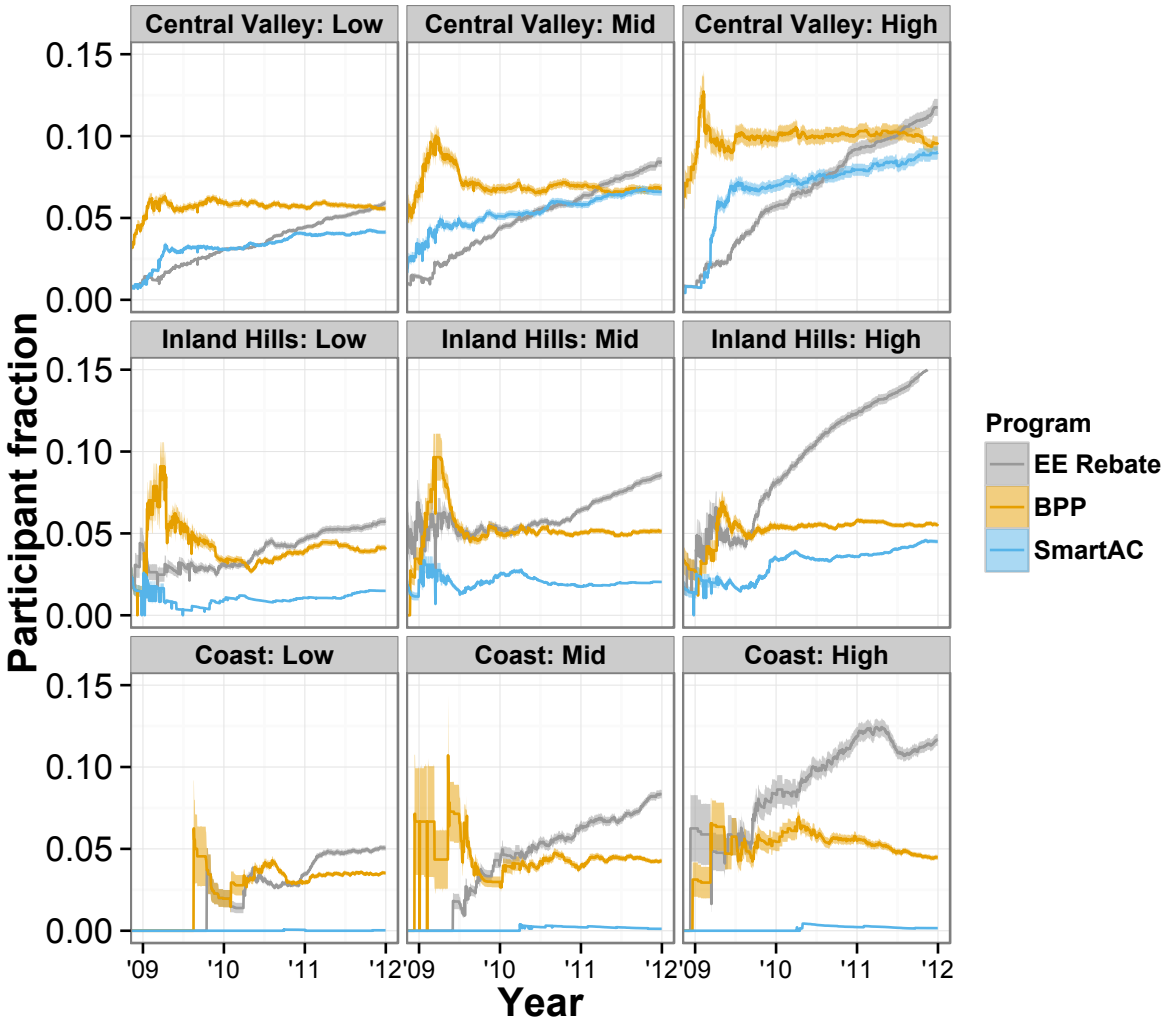
- Household income segments:
  - Low: Below $52,252.33
  - Mid: $52,252.33 - $81,572.00
  - High: Above $81,572.00

LOW-INCOME PROGRAM ENROLLMENT



ENROLLMENT IN EE, ALTERNATE BILLING, DR



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- Bill smoothing is most popular in hot Central Valley
  - Under-subscribed among lower-income households?
- Air conditioner demand response grew rapidly in the Central Valley, particularly in higher-income areas
  - Good sign for utilities considering similar measures

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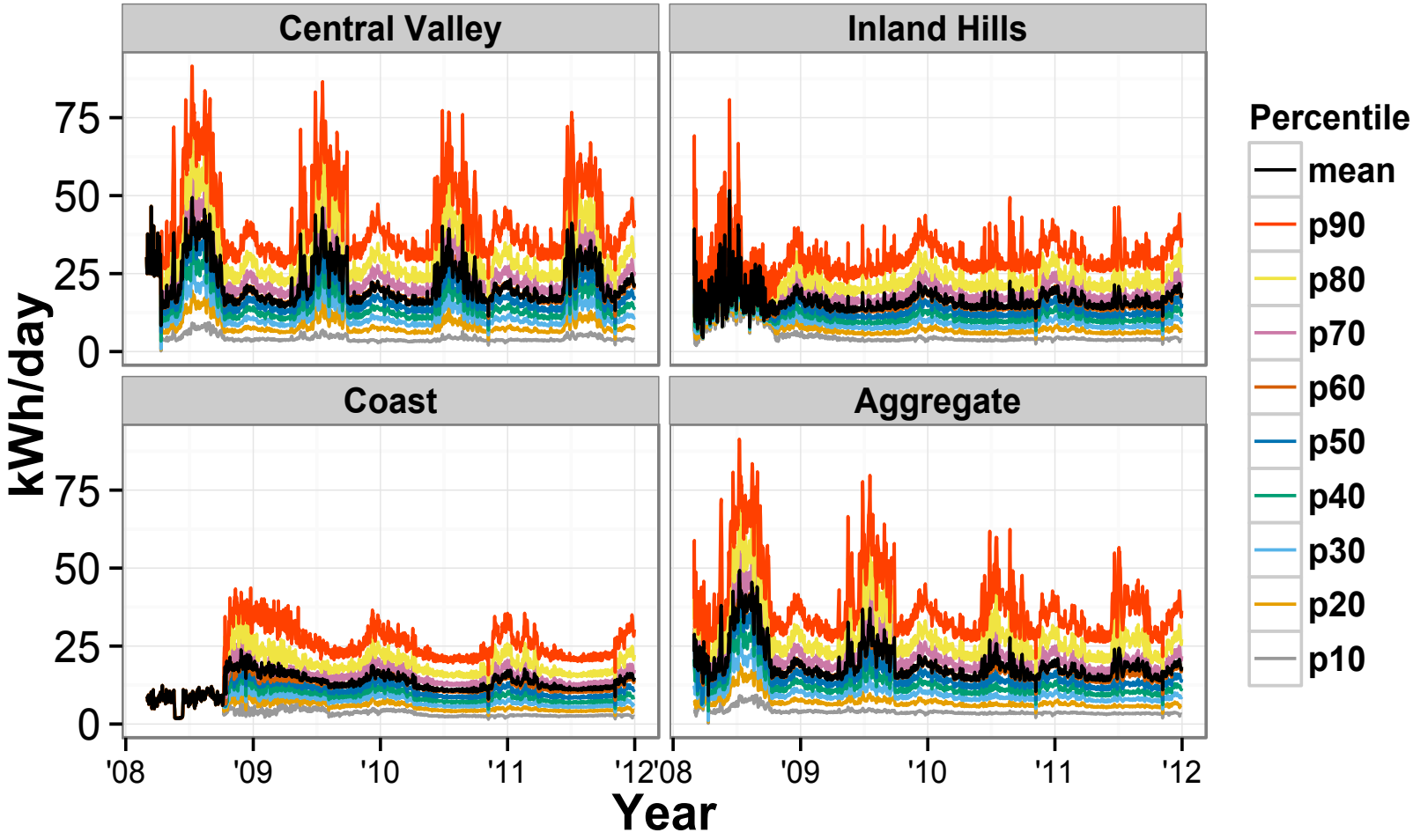
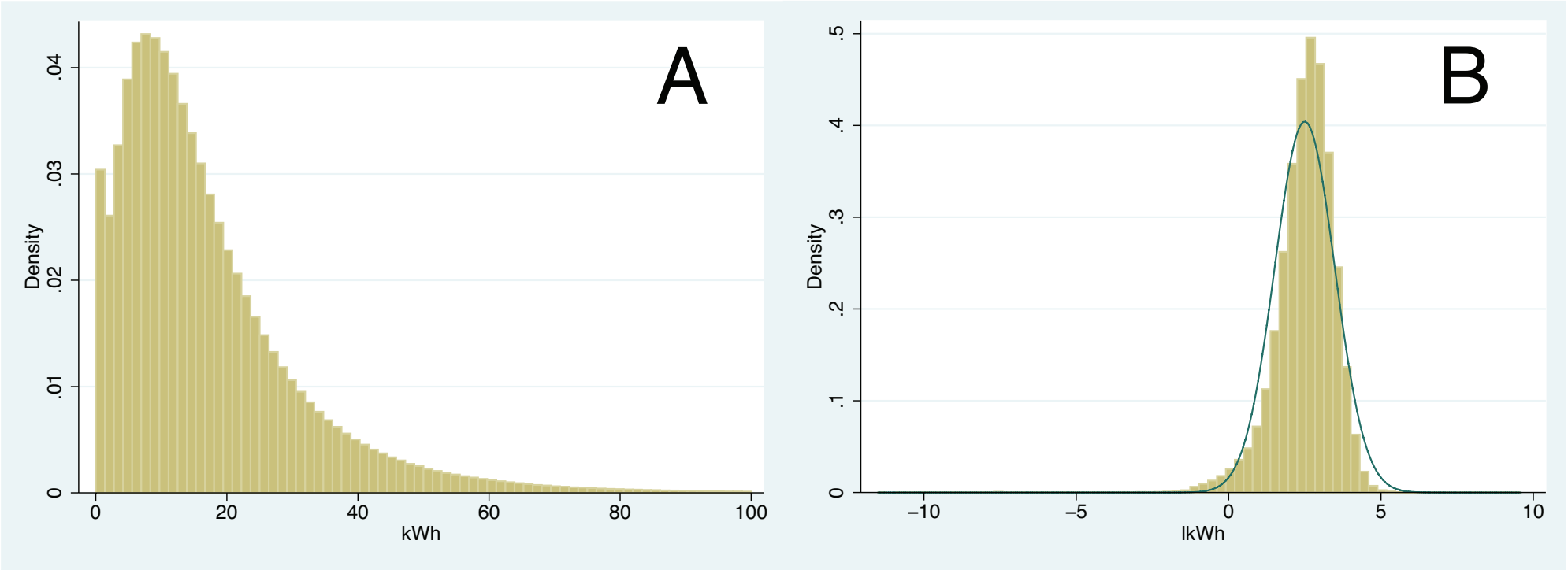
ELECTRICITY CONSUMPTION OVER TIME



LOW-INCOME ENERGY SUBSIDIES

- Numerous federal and state programs provide energy assistance to low-income households
- California Alternative Rates for Energy (CARE)
- Established in 1989, expanded greatly during 2001 energy crisis
- Directly subsidizes electricity and gas prices for households within 200% of the poverty line
  - Aims to improve access to energy services
  - 5.3M eligible households in CA, 1.6M in Pacific Gas & Electric (PG&E) in 2012
  - State mandates 90% uptake
- CA average savings: $29/mo for electricity (33%), $6/mo for gas
  - PG&E: $40/mo for electricity (42%), $7/mo for gas (20%)
- Funded by public purpose customer charge
  - CA approved $4B for 2012-2014
  - In 2012, PG&E spent $710M on CARE

Evergreen Economics 2013

HOUSEHOLD ELECTRICITY CONSUMPTION IS ROUGHLY LOGNORMAL