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EPIC Strategic Goals Workshop



Overview



Barriers to reaching 2045
carbon free goal



Market failures



The role of RD&D and the
EPIC Program



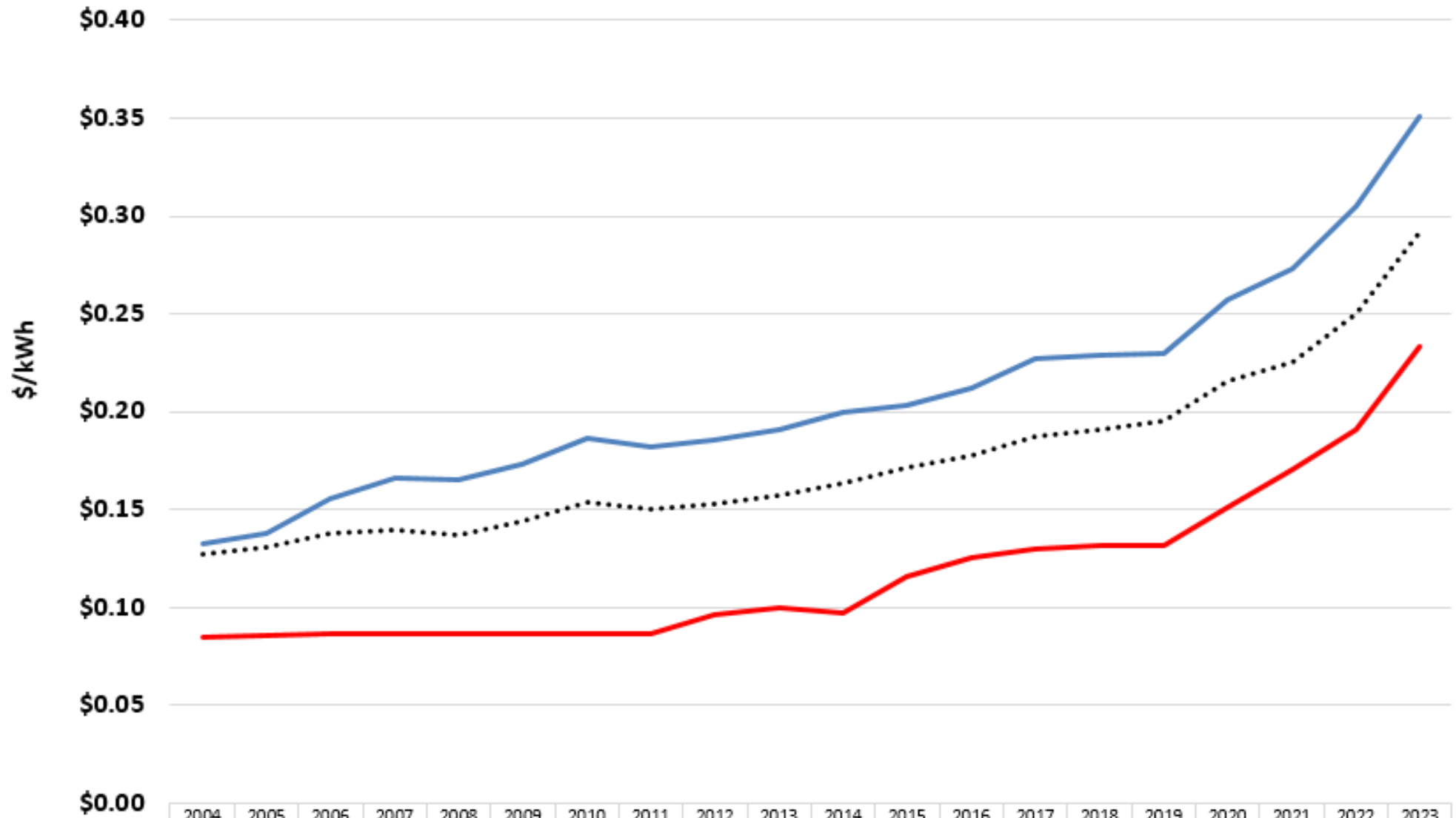
Barrier to Climate Goals: Affordability Crisis

- Rate Increases stop electric adoption
- Middle income customers can not make ends meet
 - Income is too high to receive CARE or FERA, but below the Self Sufficiency Standard
- Electric heat pumps cost more than gas systems now!

Changes in value

	Since 2006	Since 2013	Since 2017	Since 2019	Since 2020	Since 2022
	125%	84%	54%	53%	36%	15%
	65%	64%	83%	457%	1140%	58%
	120%	64%	38%	31%	18%	-3%
	426%	253%	117%	89%	31%	10%
	109%	77%	45%	33%	21%	25%
	170%	133%	79%	77%	54%	22%
	38%	250%	-911%	-269%	-309%	-4157%
	-53%	-749%	9%	-1%	74%	-60%
	427%	253%	117%	89%	31%	10%
	369%	79%	45%	33%	21%	25%

PG&E Bundled Residential Retail rates

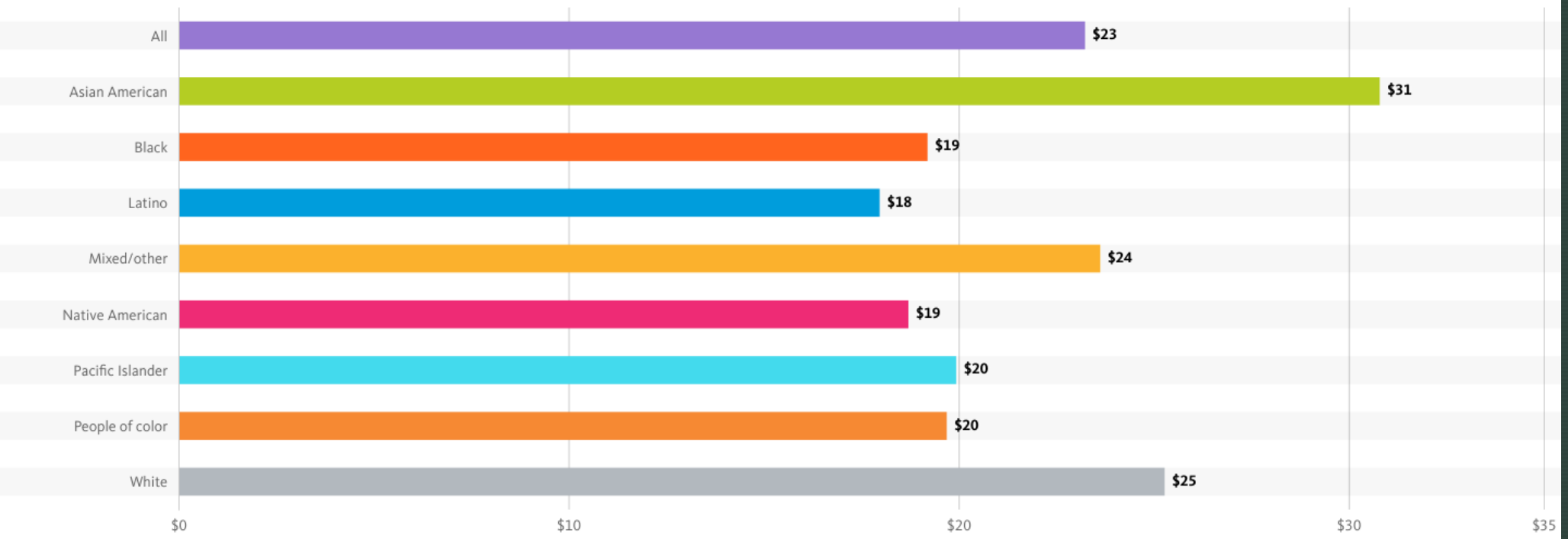


	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Residential (non-CARE)	\$0.132	\$0.138	\$0.156	\$0.167	\$0.165	\$0.173	\$0.187	\$0.182	\$0.186	\$0.191	\$0.199	\$0.203	\$0.212	\$0.227	\$0.228	\$0.230	\$0.257	\$0.273	\$0.305	\$0.351
Residential (CARE)	\$0.085	\$0.086	\$0.086	\$0.086	\$0.087	\$0.087	\$0.087	\$0.087	\$0.096	\$0.100	\$0.097	\$0.115	\$0.126	\$0.130	\$0.131	\$0.132	\$0.151	\$0.171	\$0.191	\$0.233
System Avg	\$0.127	\$0.131	\$0.138	\$0.140	\$0.137	\$0.144	\$0.154	\$0.151	\$0.153	\$0.157	\$0.163	\$0.172	\$0.178	\$0.188	\$0.191	\$0.196	\$0.215	\$0.226	\$0.250	\$0.292

Wages: Median United States

Median hourly wage by race/ethnicity: United States; **Age Group:** 25 to 64; **Year:** 2020

SELECT BREAKDOWN ▾ **FILTERS:** **AGE GROUP** ▾ **YEAR** ▾  ▾  ▾ 



WHAT IT SHOWS **WHY IT MATTERS** **TOUR**

Data source: IPUMS USA | National Equity Atlas

Barriers to Climate Goals: Affordability Crisis



Justifying gas
infrastructure

More costs
passed to the
consumer
Blending can
be dangerous



Hydrogen is not a truly
clean fuel

Market Failures



EV Charging Stations

Located where the company thinks will be most profitable

No access to conveniently located charging station deters people from adopting EVs



Heat Pumps

No major updates to the technology

Role of RD&D and the EPIC Program

- Focus on addressing market failures
 - How can we make locating EV charging stations in low-income neighborhoods, multifamily housing buildings and affordable housing developments a sustainable endeavor?
- Affordability
 - Research smarter technologies and designs that can help save ratepayer money
 - Inexpensive alternatives to current practices
 - Design the dismantling of gas infrastructure without causing harm to ratepayers that can't switch their own appliances

Role of RD&D and the EPIC Program

- Don't reinvent the wheel, just make new tires! Focus on improving existing technologies.
 - Heat pump technology that saves space
 - EV investments v hydrogen development
 - RD&D investments in improving and expanding current tech has a higher success rate (return on the dollar) than RD&D investment into entirely new inventions.

Thank you

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