

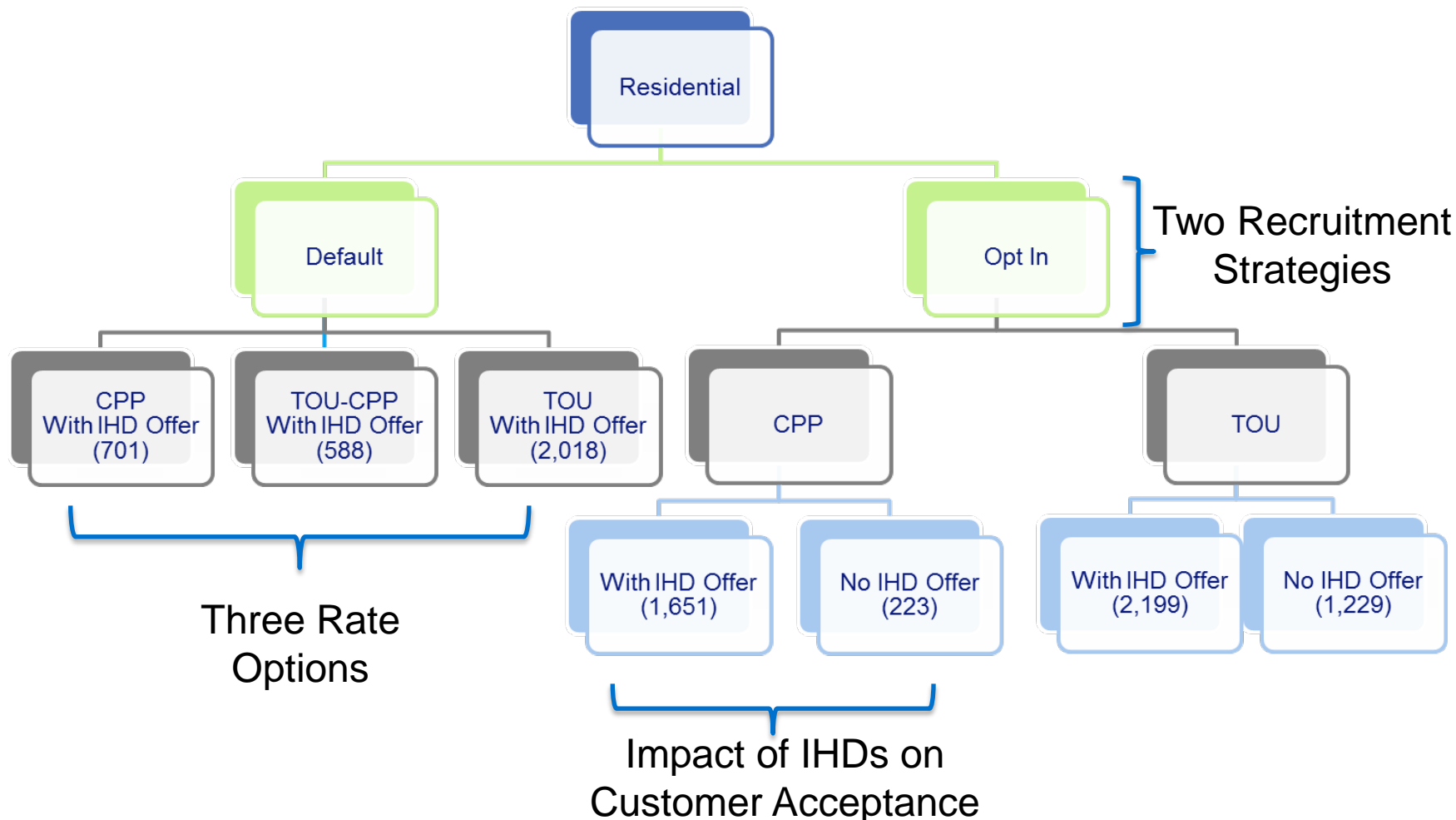
# On the REV Agenda: The Role of Residential Time-variant Pricing

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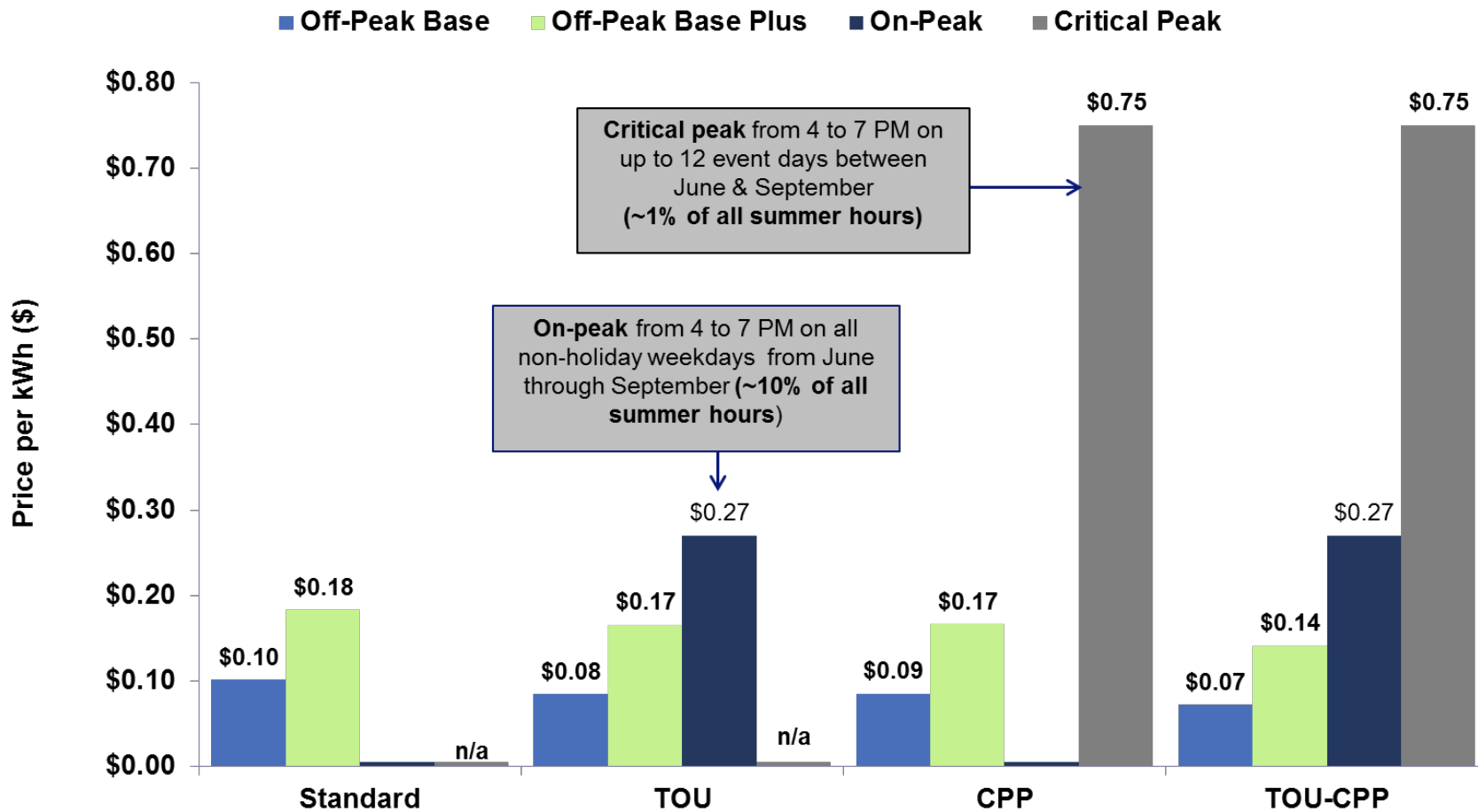


- **One of 11 Consumer Behavior Studies funded in part by the Department of Energy's Smart Grid Investment Grants**
- **One of the largest pricing pilots ever done in the industry**
- **Multiple pricing options and enrollment methods examined through rigorous adherence to sound principles of experimental design, including recruit and delay RCT for opt-in test cells and randomized encouragement design for default**
- **Customer acceptance, attrition and impacts tracked over two summers**
- **Significant market research done on naming and messaging for pricing plans (which likely led to high acceptance rates)**
- **Interval meters in place for at least one year prior to enrollment**
- **Two detailed reports available through DOE's SGIG website [https://www.smartgrid.gov/recovery\\_act/consumer\\_behavior\\_studies](https://www.smartgrid.gov/recovery_act/consumer_behavior_studies)**



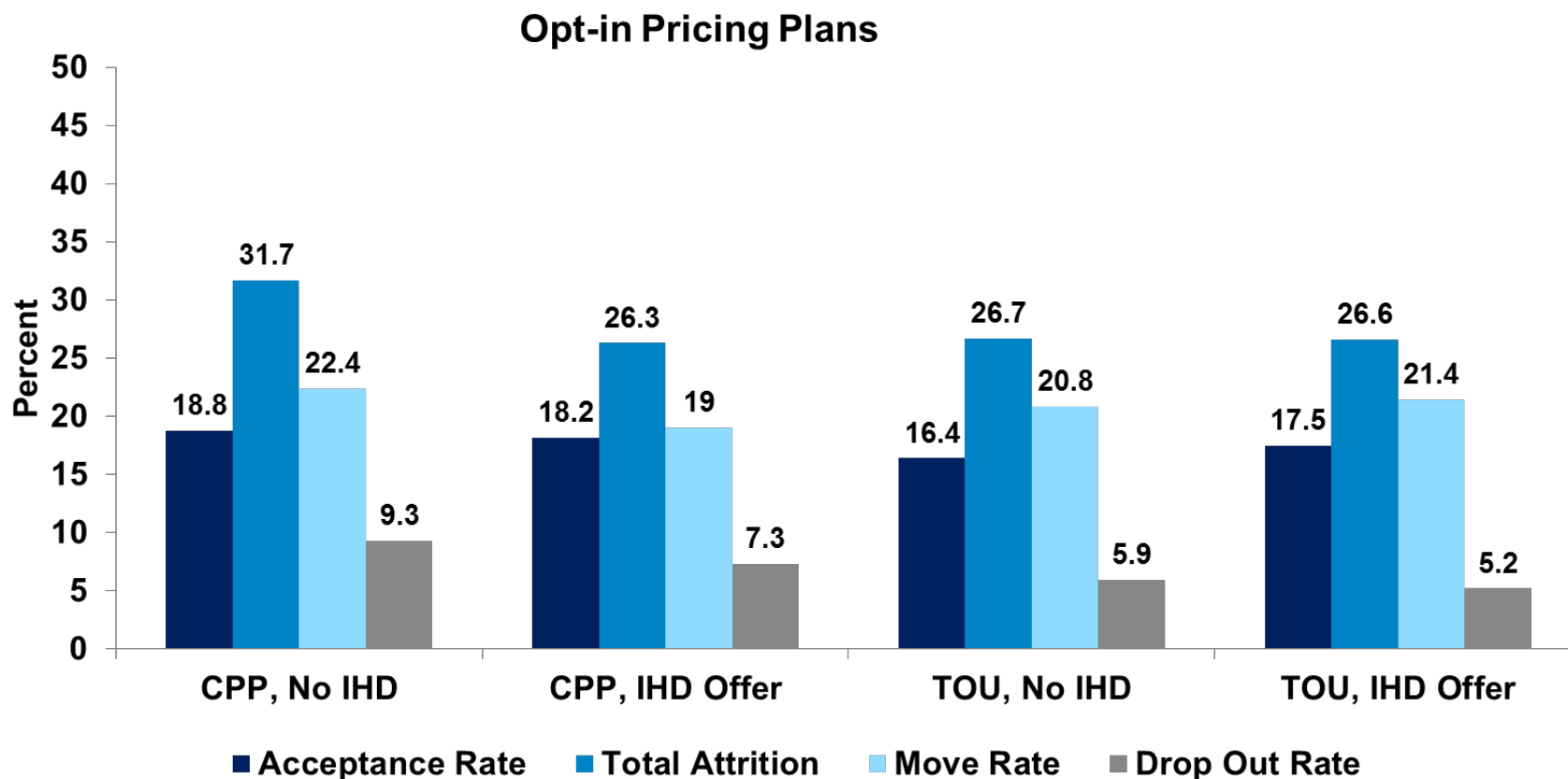
Total enrollment including deferred groups = 12,027; Total # of customers receiving offers (including deferred groups) = 53,798; Total # of customers in SPO including controls = 99,661

# Three pricing plans were tested in the SPO



Enrollment rates for OPT-IN plans were between 15% and 20% and drop out rates after enrollment were between 5% and 10%

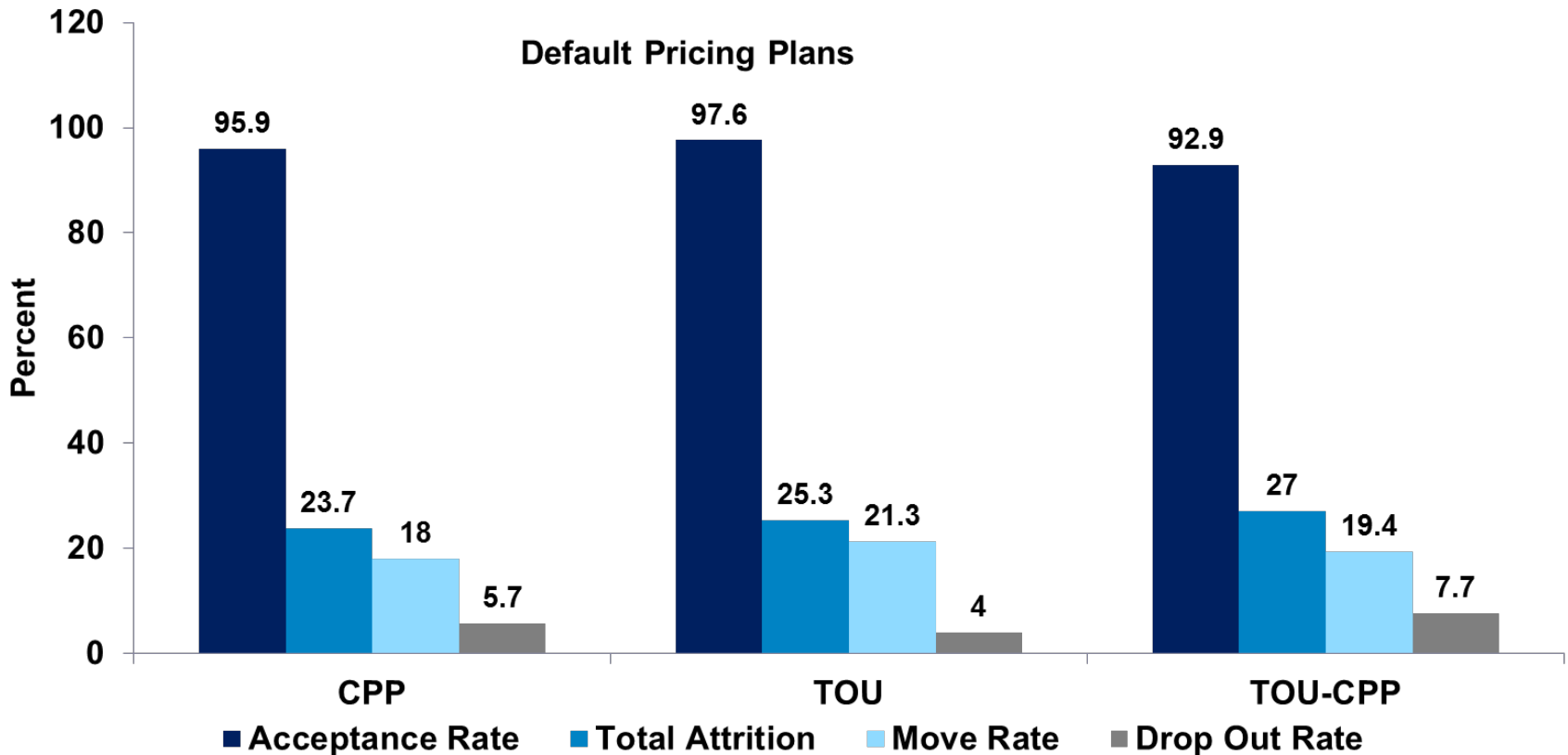
Offer of IHD did not impact customer acceptance rate for any pricing plans



# Drop out rates for DEFAULT customers were very low, both before and after the enrollment date

Only 2% to 7% of default customers opted-out out before enrollment and only 4% to 8% dropped out over 2 year period

Roughly 25% of survey respondents said they weren't aware they had been defaulted and roughly another 25% didn't know they could opt-out





# How did SMUD achieve such high acceptance rates for opt-in enrollment?

- **Were they lucky or were they good? – a bit of both**
- **Extensive market research to develop marketing & education materials**
- **Obtained input from more than 2,000 customers through 25 focus groups and four surveys**
- **Came up with great names for pricing plans that conveyed value to consumers**
- **Have a great reputation with their customers – If SMUD offers something, customers are more inclined to think it's good for them than at many utilities**
- **Well educated, engaged population**
- **Same campaign might not be as effective elsewhere**



**Off-Peak  
Discount  
Plan**

.....  
Manage your summer  
energy use and save money  
99 percent of the time!  
.....

Powering forward.  
Together.



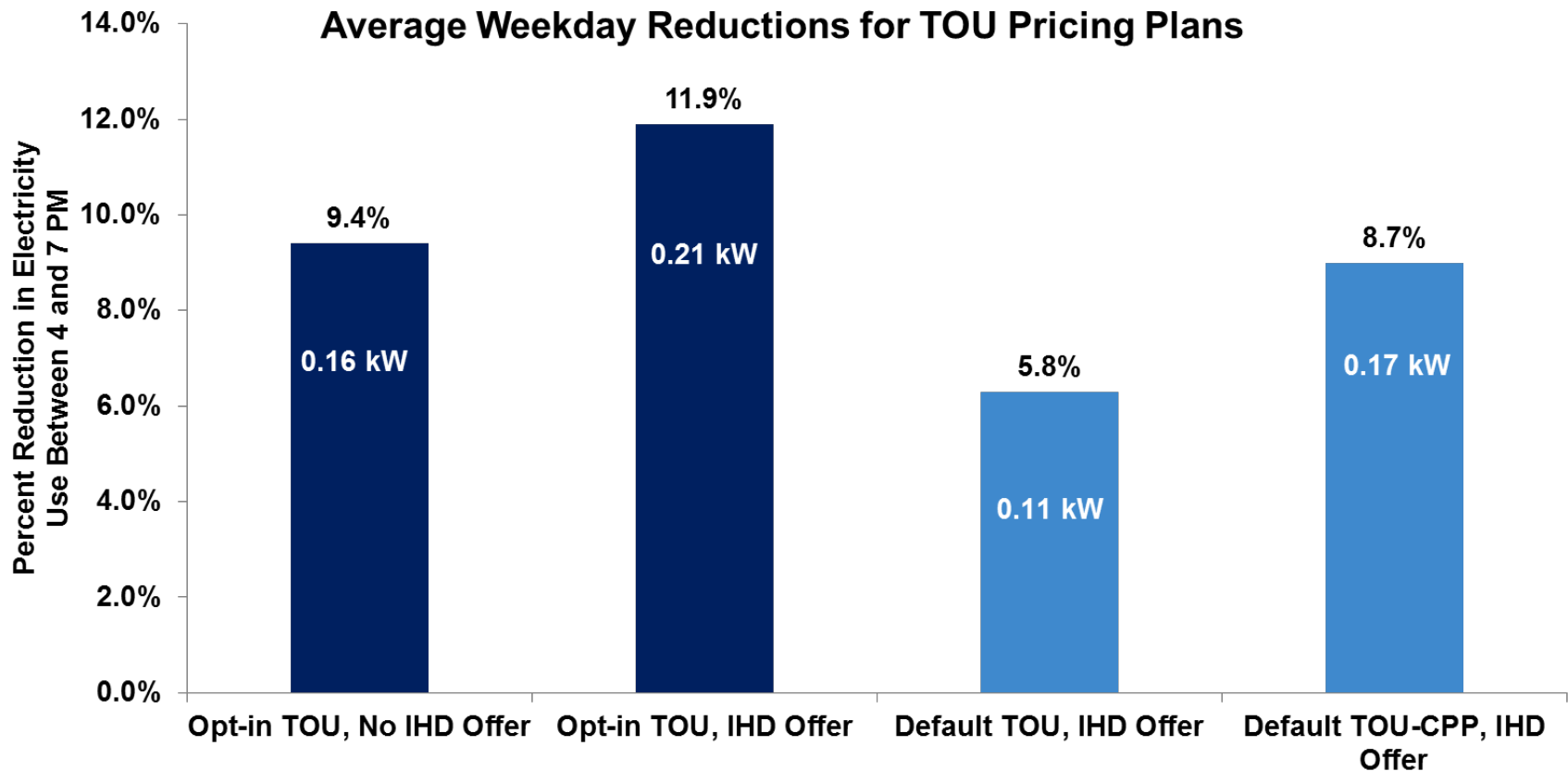
**Summer  
Weekday  
Value Plan**

.....  
Manage your summer energy use.  
Reward yourself and the  
environment too!  
.....

Powering forward.  
Together.

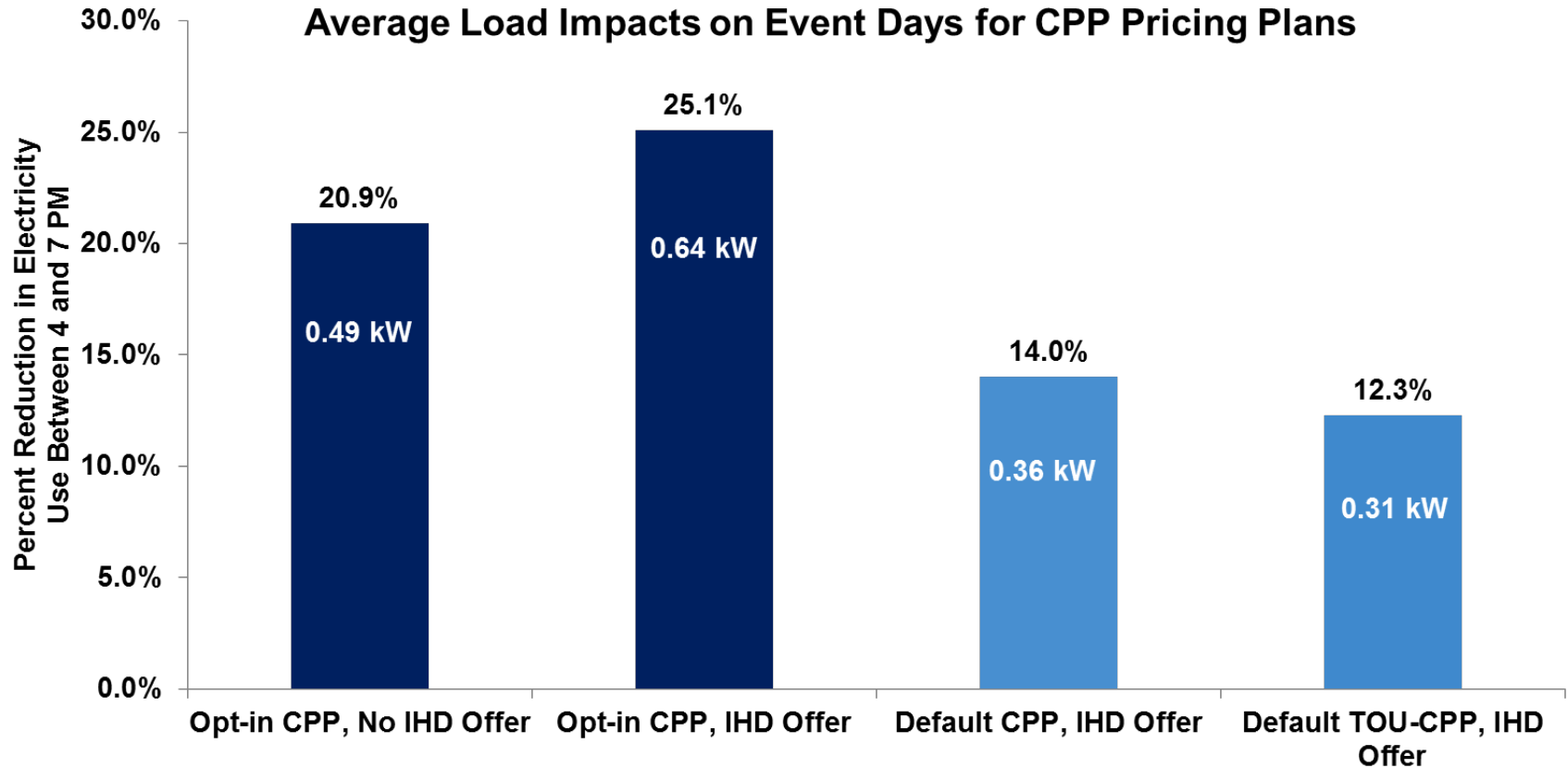


# Average load impacts across the two summers were significant for both opt-in and default TOU pricing plans



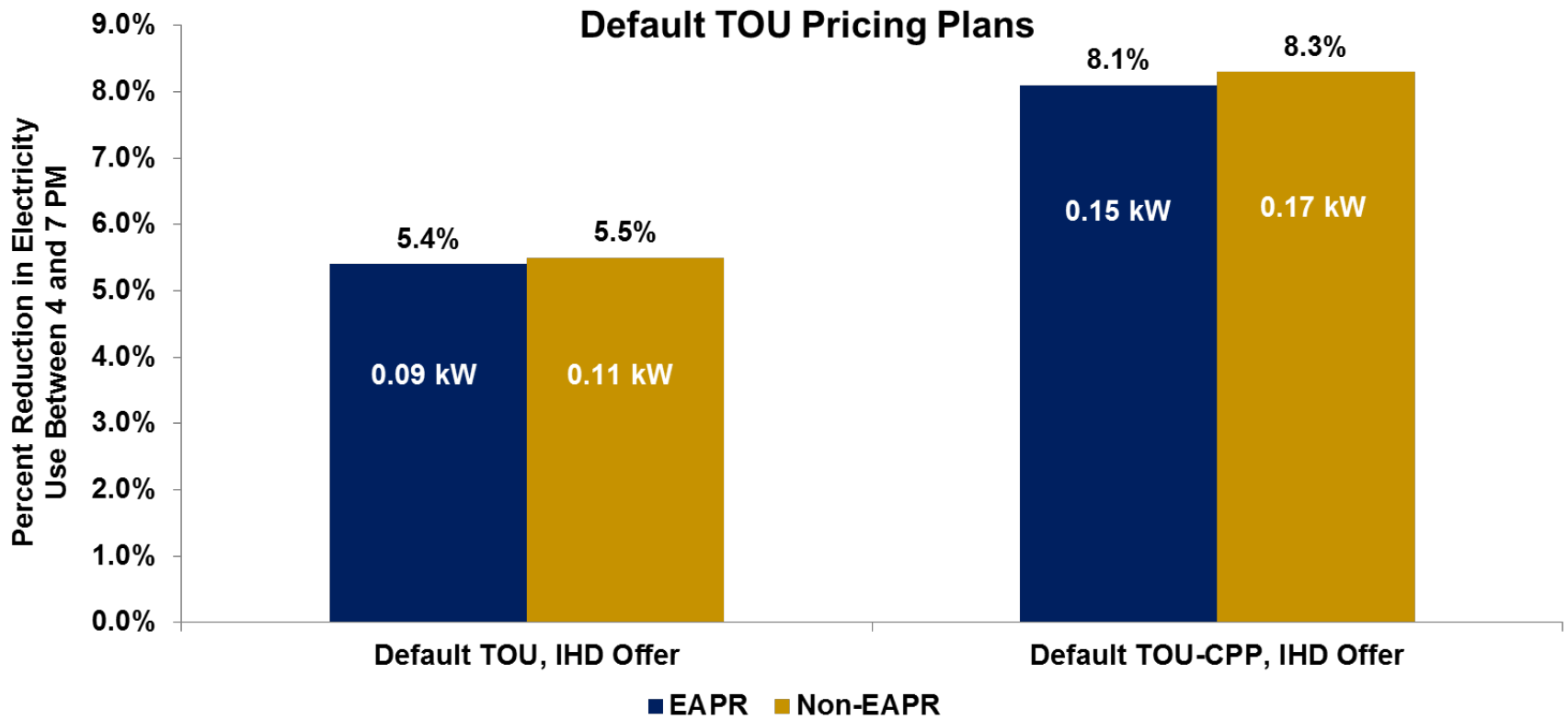


# Average load impacts for CPP plans were higher than for TOU plans



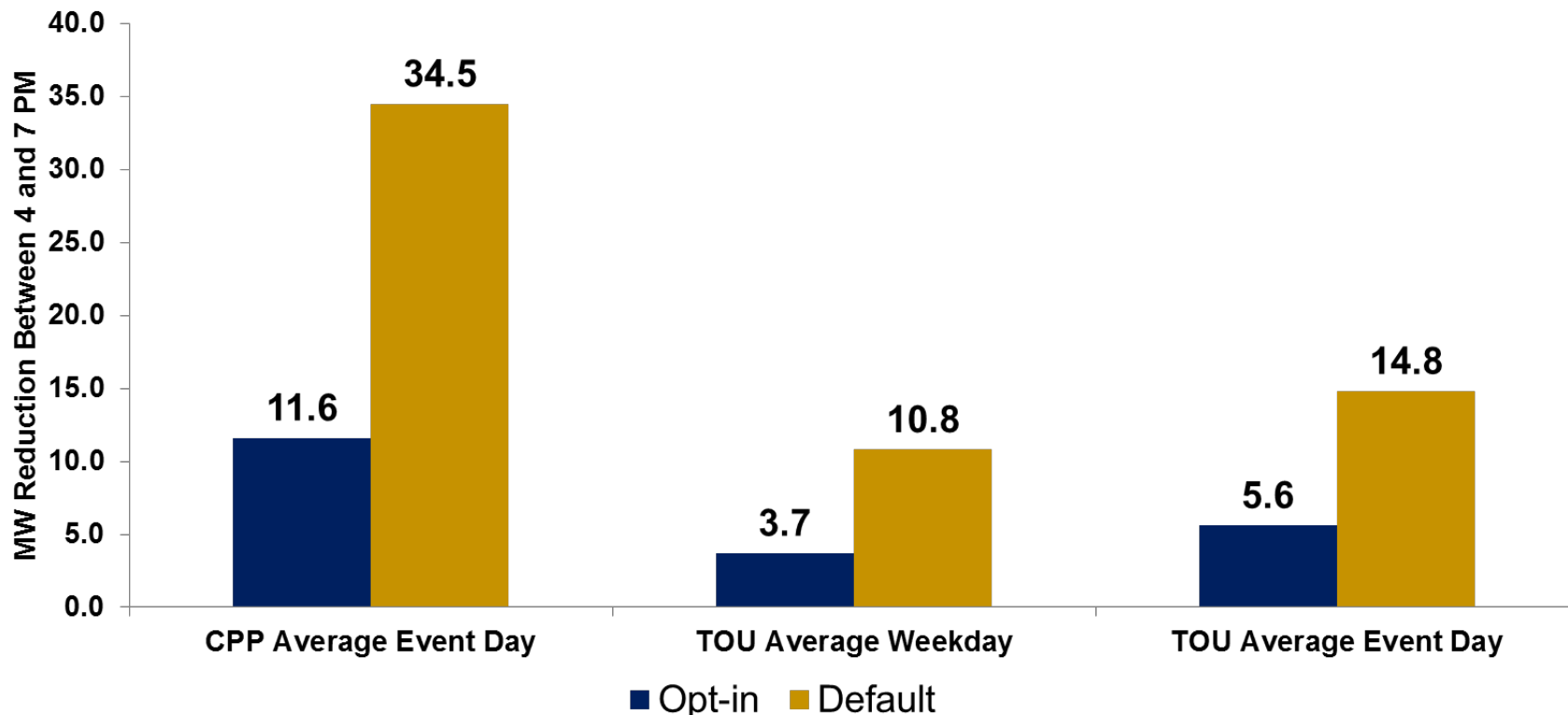
# Low income (EAPR) customers had the same price responsiveness as non-low income consumers

EAPR customers had higher enrollment rates for opt-in offers and lower opt-out rates for default offers than non-EAPR customers



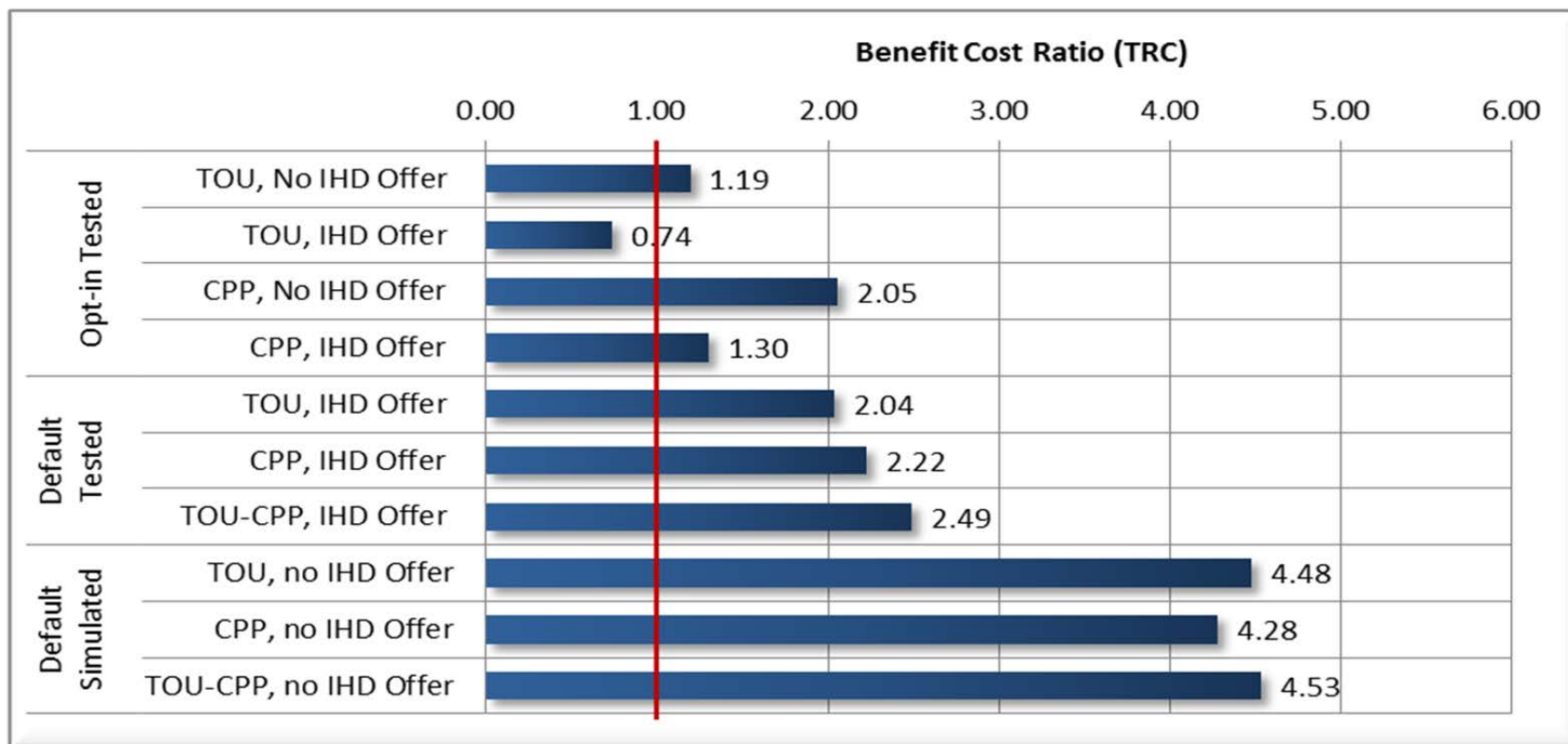
# Combining enrollment rates and average impacts for each pricing plan, default enrollment produces much larger aggregate impacts

Using SMUD's SPO enrollment and load impacts, if rates were offered to 100,000 customers, default enrollment would produce aggregate load impacts 3 times larger than opt-in enrollment

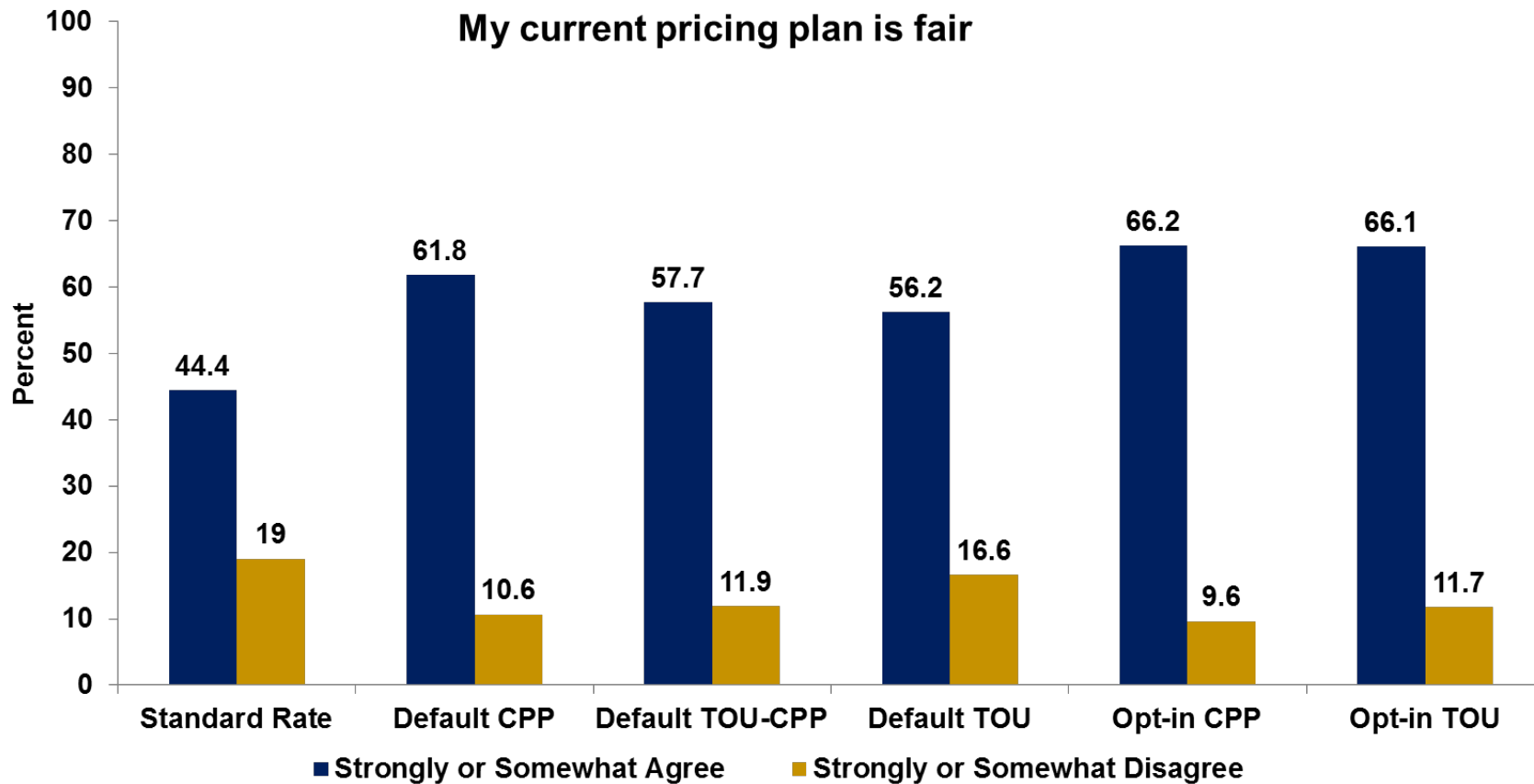


# Default enrollment, especially without IHDs, is much more cost effective than opt-in enrollment

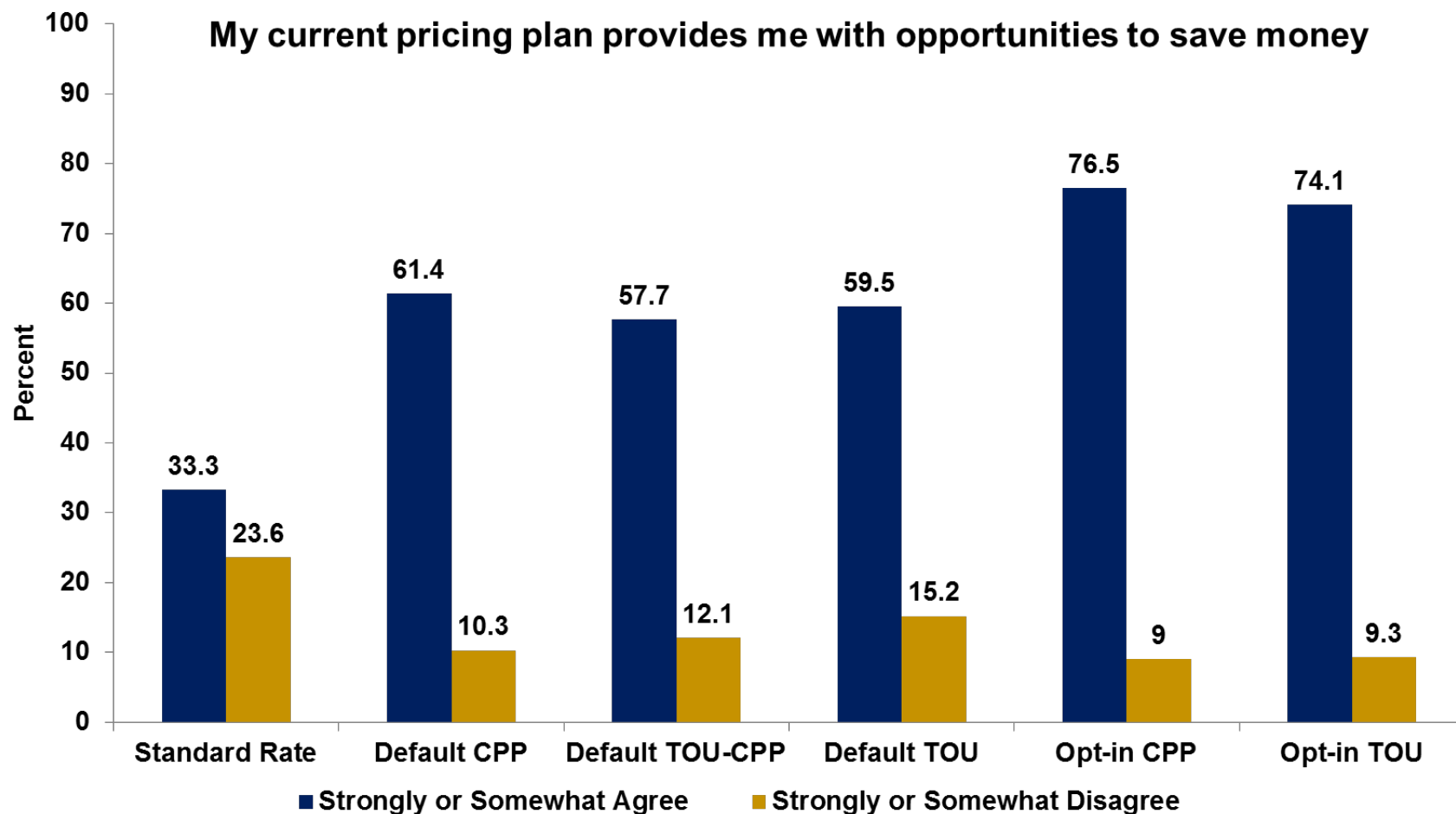
The cost effectiveness analysis assumes the pricing plans were rolled out to all SMUD residential customers – the first 7 options simulate pricing plans tested in the pilot – the last 3 represent default options that do not include the offer of an IHD



Customers on the standard rate are less likely to think their pricing plan is fair than customers on any of the time based pricing plans



# Customers on the standard rate are much less likely to think their pricing plan provides them with opportunities to save money

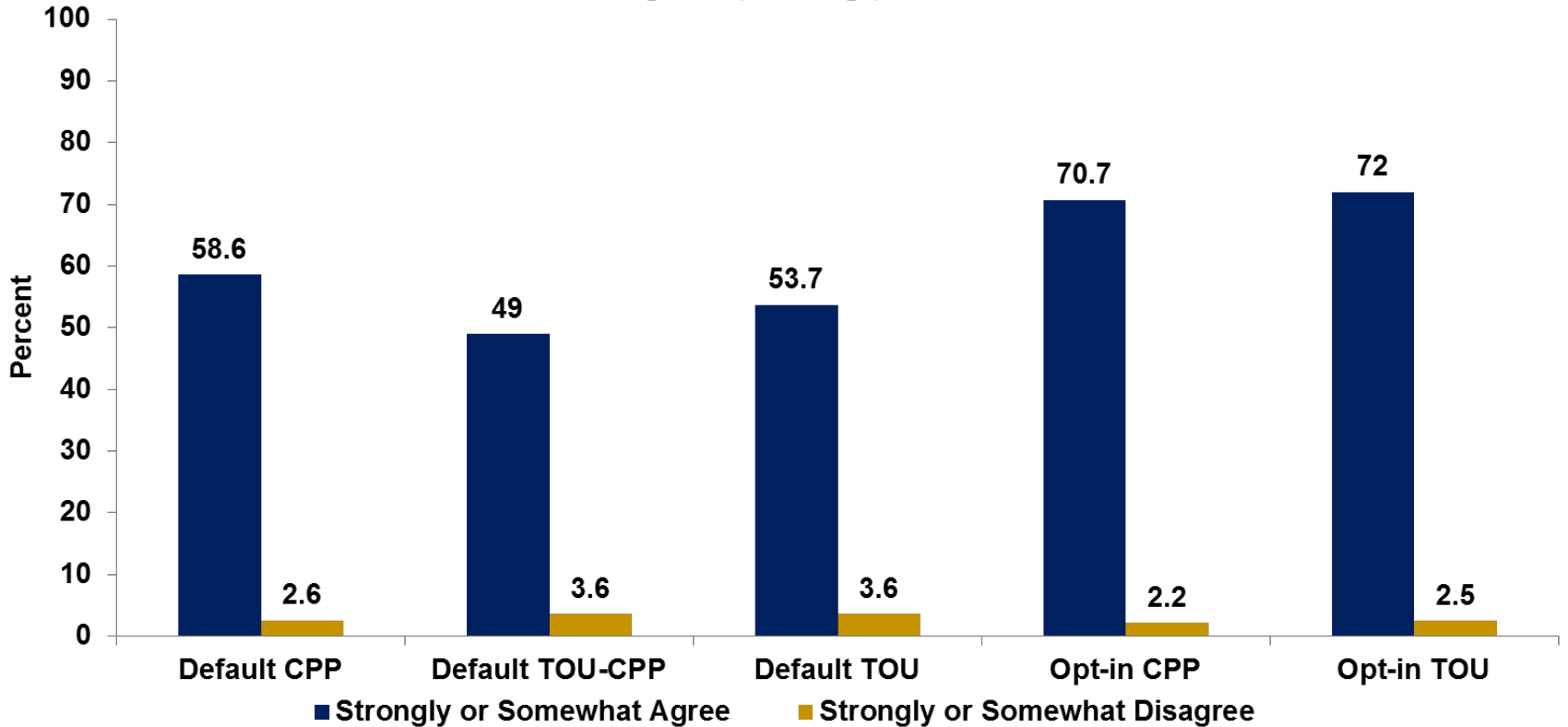




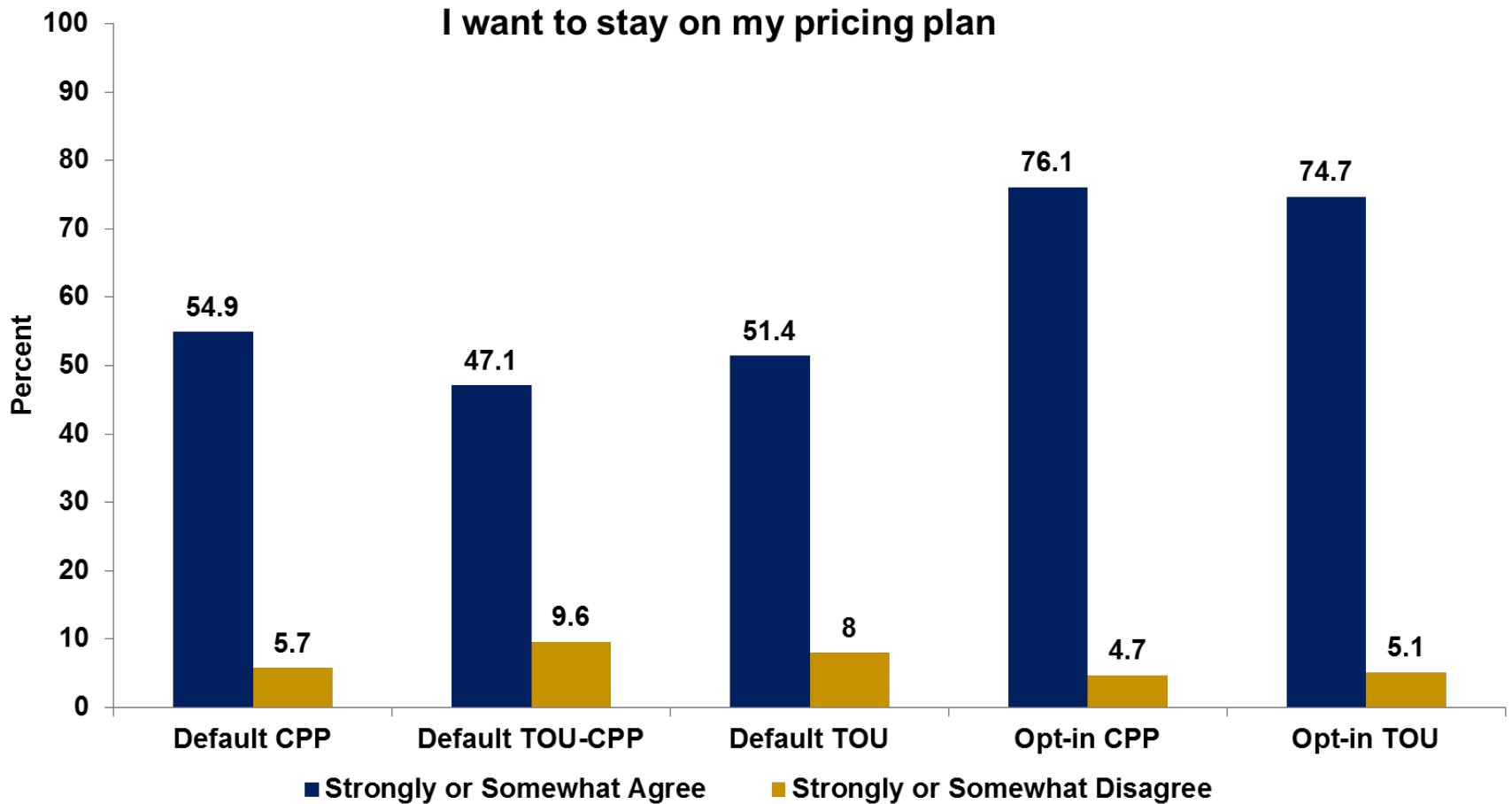
# Roughly half of default customers and more than 70% of opt-in customers think SMUD should offer their plan to all customers

Almost no one feels somewhat or strongly that the plan should not be offered to others

**SMUD should be offering the pricing plan I am on to all customers**



# Three quarters of opt-in customers and roughly half of default customers indicate they would like to stay on their pricing plan



- **Residential customers (including low income customers) can and will respond to time varying rates, even without enabling technology**
- **The offer of an IHD did not increase enrollment and IHDs did not materially change demand response**
- **It's possible to implement default pricing without creating significant dissatisfaction among customers**
- **Enrollment under default marketing was between four and five times larger than under opt-in marketing**
- **Based on the results of the SPO, if SMUD implemented new pricing options using default enrollment, aggregate impacts would be roughly twice as big on high demand days than if SMUD implemented opt-in enrollment, in spite of a very high opt-in rate by industry standards**
- **It's possible to implement a true RCT (recruit and delay) or use RED methods without creating significant customer dissatisfaction**

# Q&A Discussion

All