

Behavior Potential

What is it and what is right method for including in potential studies?

Jim Kapsis

Senior Director – US Market Development and Strategy

September 24, 2013



Behavior potential

Importance of potential studies

- Studies commissioned by utilities or PUCs, carried out by consulting firms to quantify:
 - **T** **Technical potential** – estimated EE savings without considering economics or customer behavior
 - **E** **Economic potential** – cost-effective sub-set of technical potential
 - **A** **Achievable potential** – reasonable savings during next cycle

Why is behavioral efficiency omitted from most studies?

- Studies are not done annually
- There is no accepted, standard way to calculate behavior potential
- However, some potential studies are beginning to include behavior savings

Methodology – Technical Potential



Data sources used

- Residential footprint sizes from EIA Forms 861 and 176
- Household ineligibility rate of 10% taken from existing Opower deployments
- Control group sizing of 10,000 households taken from Brattle Protocol

Technical Potential – UtilityCo Residential Footprint

Technical Potential

(90% of Entire Footprint less Control Group)

Control Group

(10K Households)

Ineligible Households

(10% of Residential Footprint)

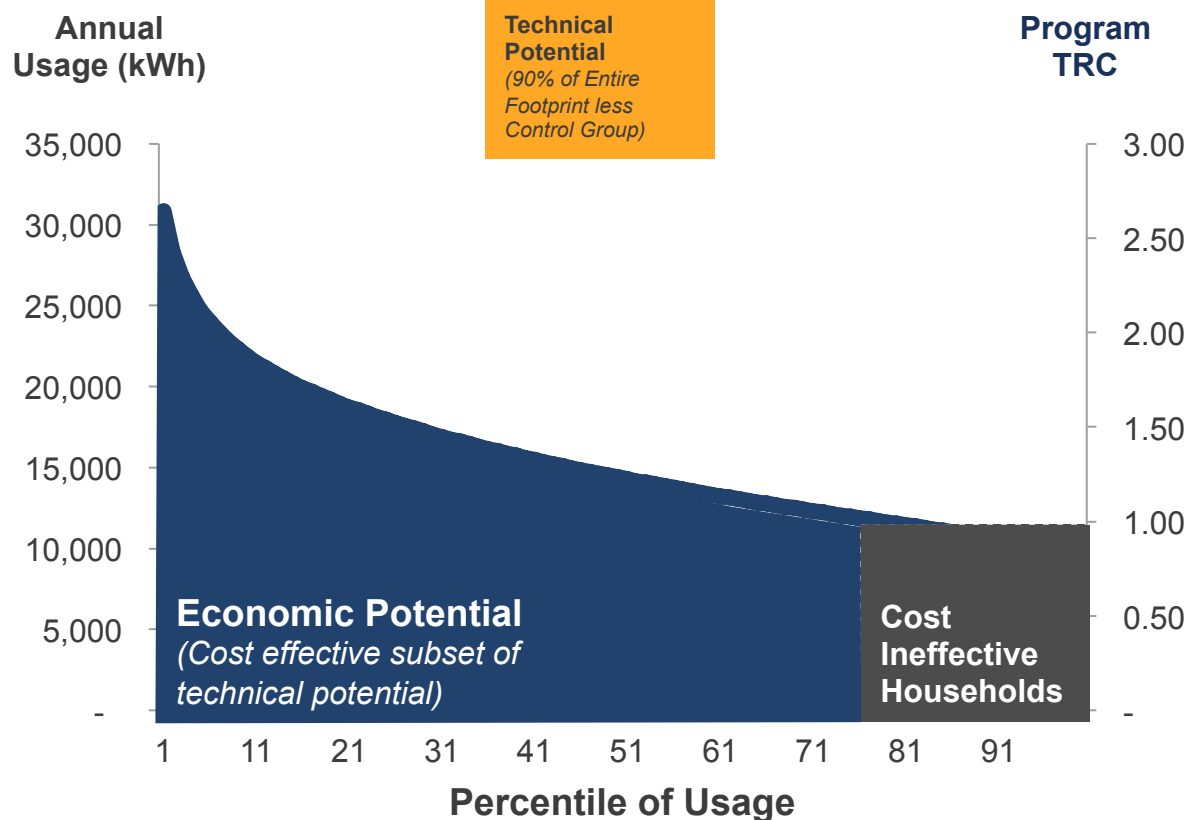
Methodology – Economic Potential



Data sources used

- Average usage data from EIA Forms 861 and 176
- Usage distributions from 80+ Opower partner utilities and 55 MM households
- 4,500 program-months of measured savings per household, verified by 25 third-party reports, informing Opower's forecast model
- Avoided cost calculators providing by Synape, E3, and DSMore

Economic Potential – UtilityCo Residential Footprint

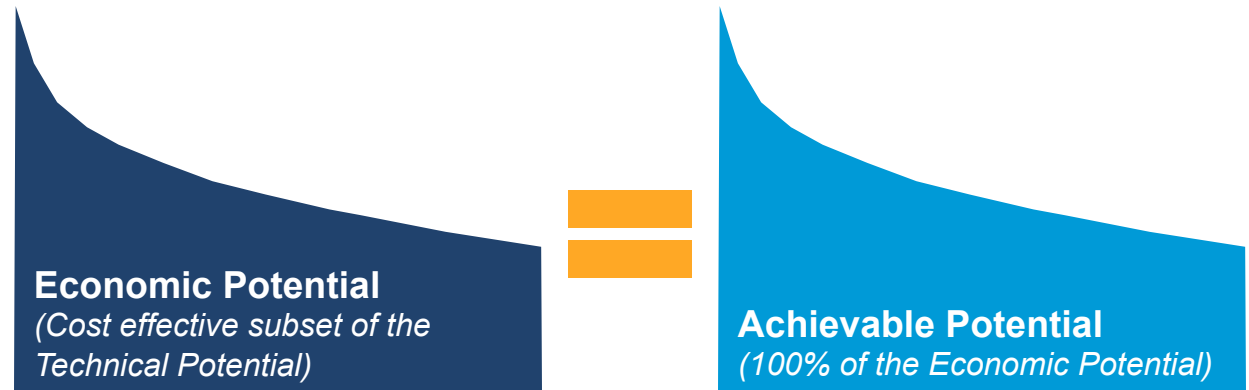


Methodology – Achievable Potential



- Achievable potential is generally defined as reasonable subset of economic potential
- Most programs rely on opt-in adoption, extending the duration of market transformation
- Opt-out behavior programs allow full scale rollouts to happen immediately

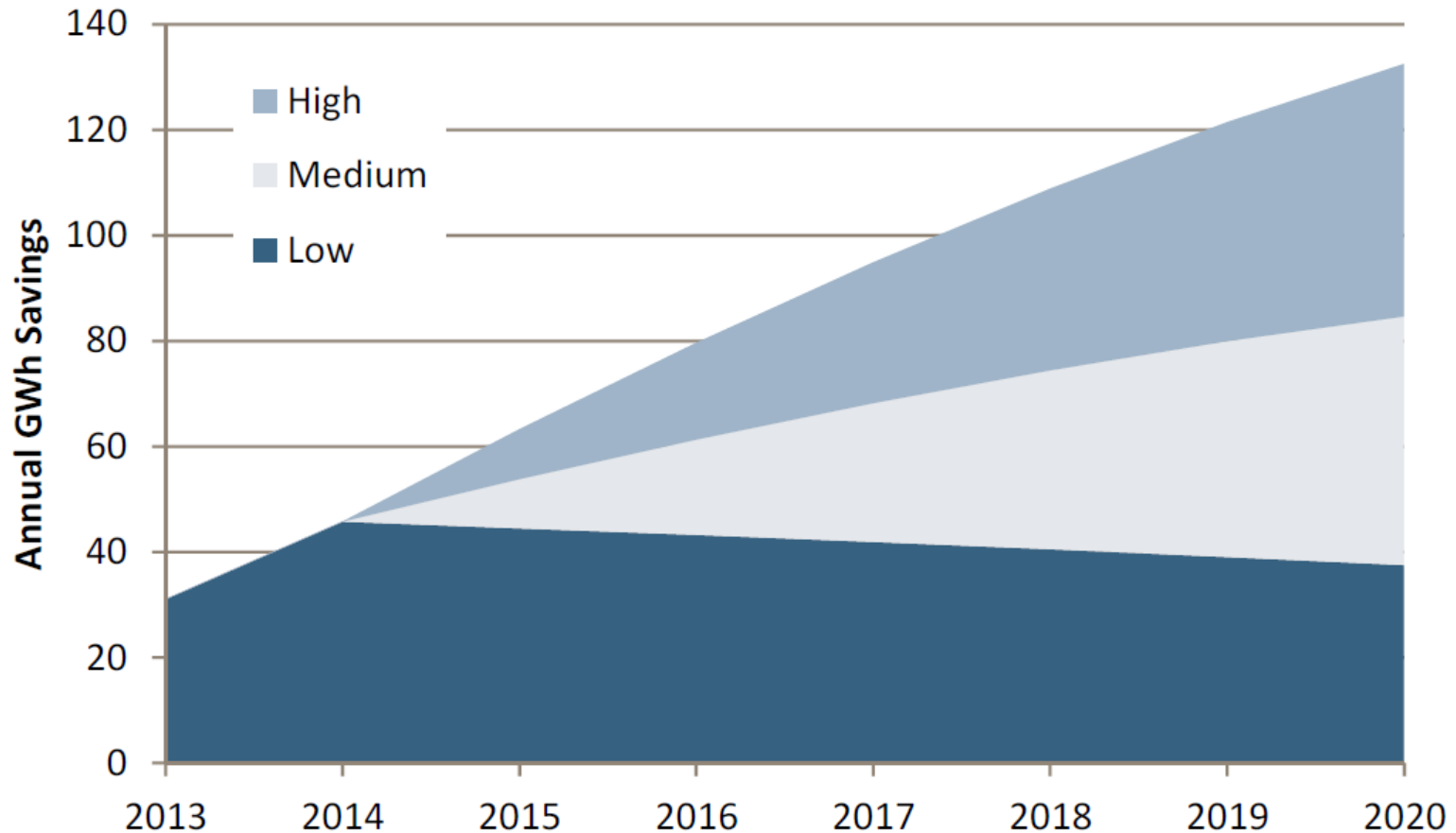
Achievable Potential – UtilityCo Residential Footprint



Support – KEMA Study for Xcel CO Estimates 80-135 GWh's by 2020

Behavior Potential – XCEL Colorado

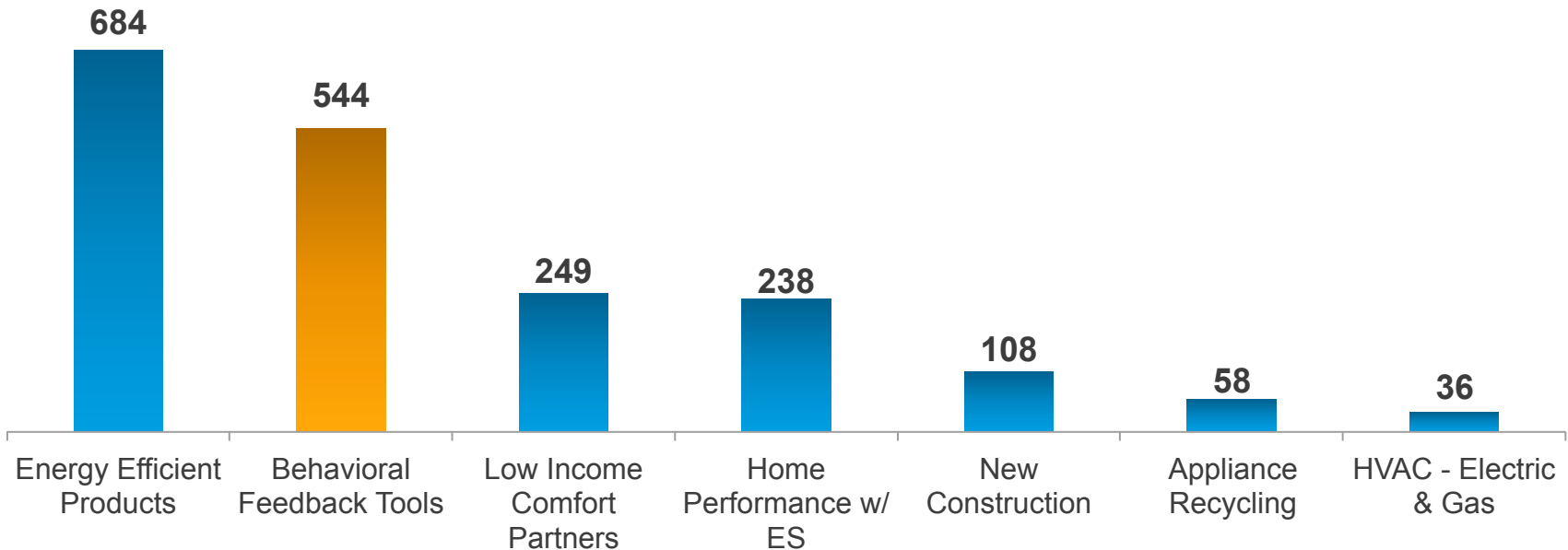
Filed with CO PSC on June 2, 2013



Support – EnerNOC Study for New Jersey Estimates 544 GWh's by 2017

Behavior Potential – New Jersey – July 2013

Net incremental electric savings (GWh, 2014-2017)

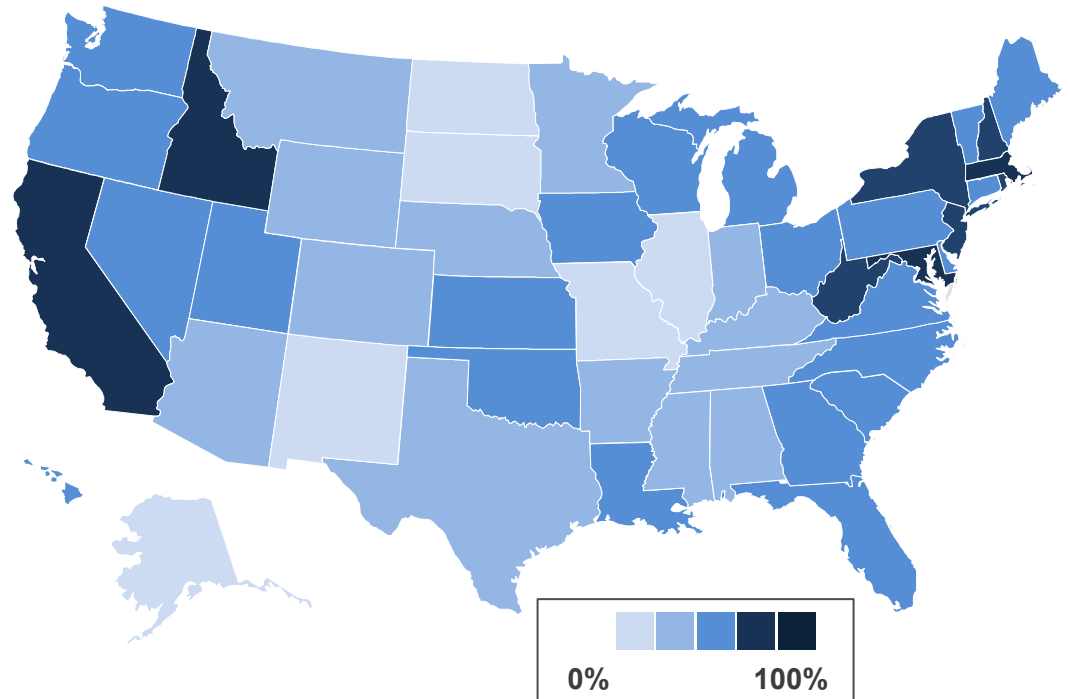


Behavioral efficiency can reach 79 MM households and save 19 TWh's

Potential by the numbers

- » **292** utilities
- » **79 MM** cost effective households
(out of 110 MM total households)
- » **19 TWh** in annual energy savings
(vs. 22 TWh in annual savings for all residential programs in 2011)
- » **3,200 MW** in peak capacity savings

Map of potential by state

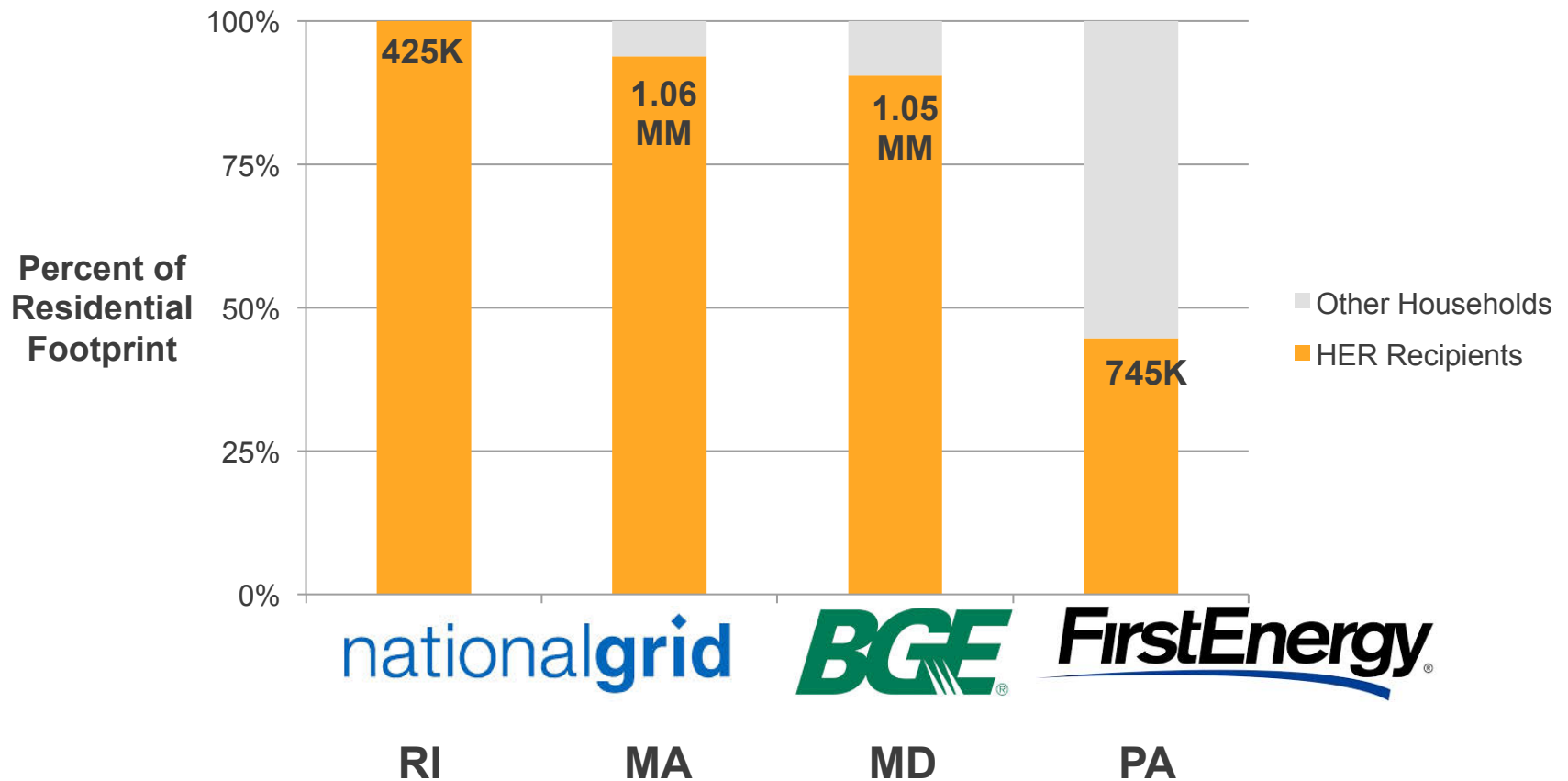


Source: Opower; ACEEE

Opower is nearing potential with several utilities in a number of states

Behavior Potential

Current and remaining households by utility

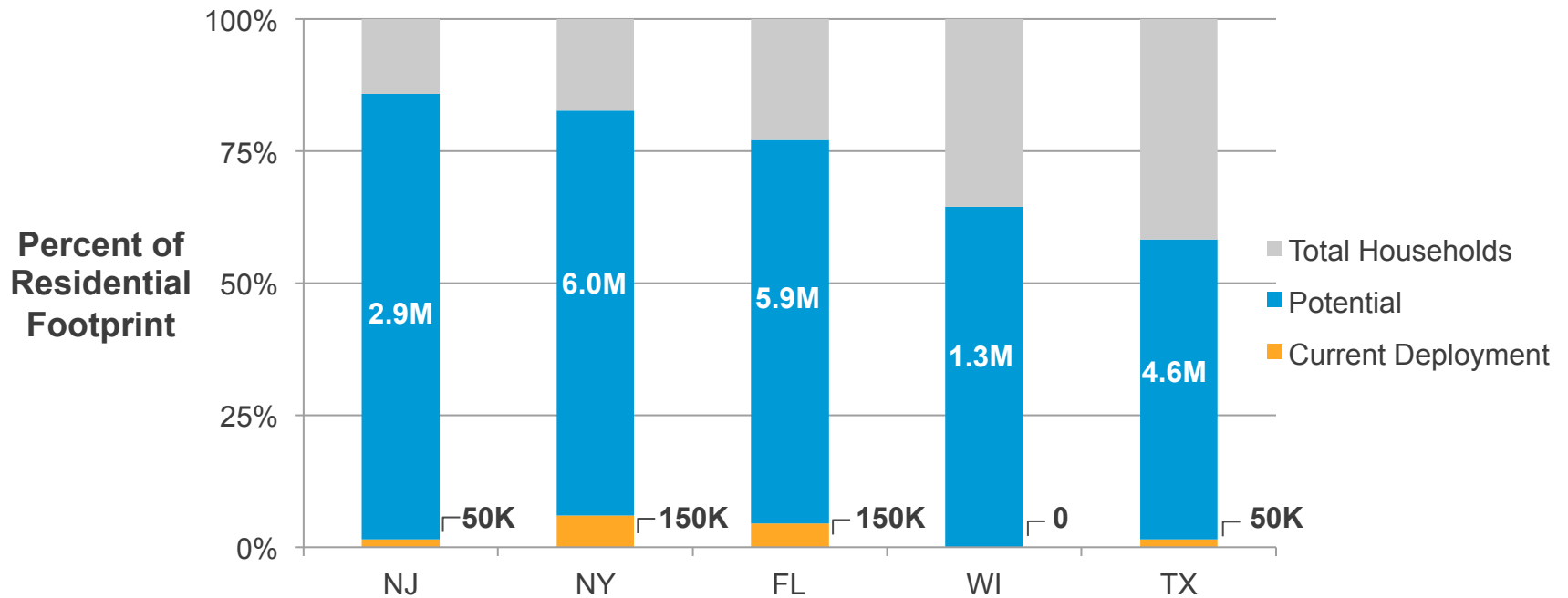


Other states are leaving significant savings on the table

Behavior Potential

Current, potential, and total households by state

Achievable annual GWh savings	546	1,109	1,623	291	1,464	➔ 5 TWh



Next steps

- » **October** – Behavior Potential White Paper
- » **October 30th** – Behavior Potential Webinar
- » For more information on Behavior Potential, please contact:

jim.kapsis@opower.com

nathan.srinivas@opower.com