

MOMENTUM

SAVINGS





Annual Market Size	
UEC	
WEIGHTED BY	WEIGHTED BY
Baseline Efficiency Mix	Actual Efficiency Mix
=	=
Baseline Consumption	Actual Consumption
=	=
	Total Market Savings
	-
	Program Savings
	=
	Momentum Savings

WHY THESE NUMBERS ARE DRAFT



Incomplete
sales data



Prevalence
of conversions
vs. upgrades



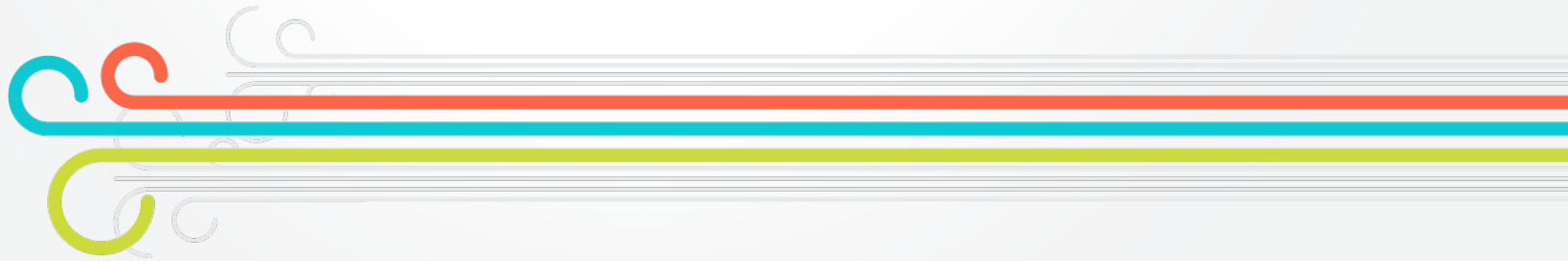
Installation
context by
home type



QUESTION 1

What is the Market?

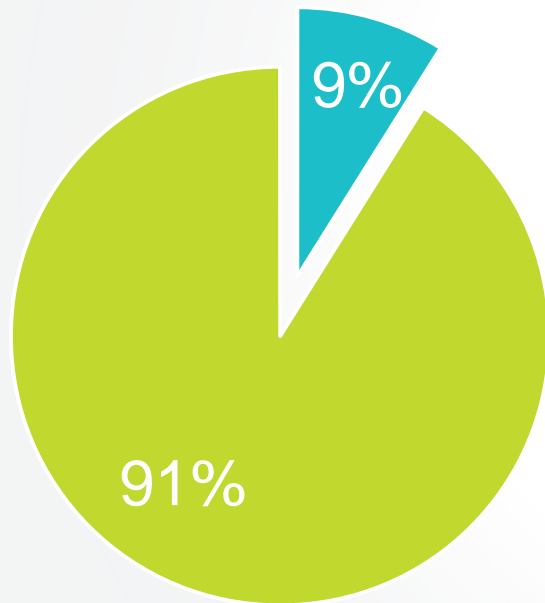
Newly installed ducted air source heat pumps in single family and manufactured homes in the entire four state region.





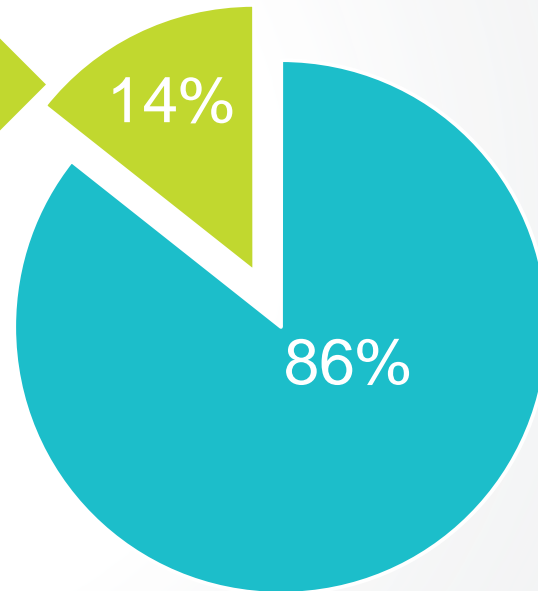
SAVINGS FROM THE UNIT ITSELF (AKA “BOX SAVINGS”) ARE THE FOCUS OF THIS ANALYSIS

ASHP Conversions



Our focus for this analysis

ASHP Upgrades



■ CC&S and Duct Sealing ■ Box Savings



How **BIG** is the Market?

HVAC units sold per year from 2010-2014 using stock turnover model calibrated to AHRI data.

QUESTION 2





FLOW



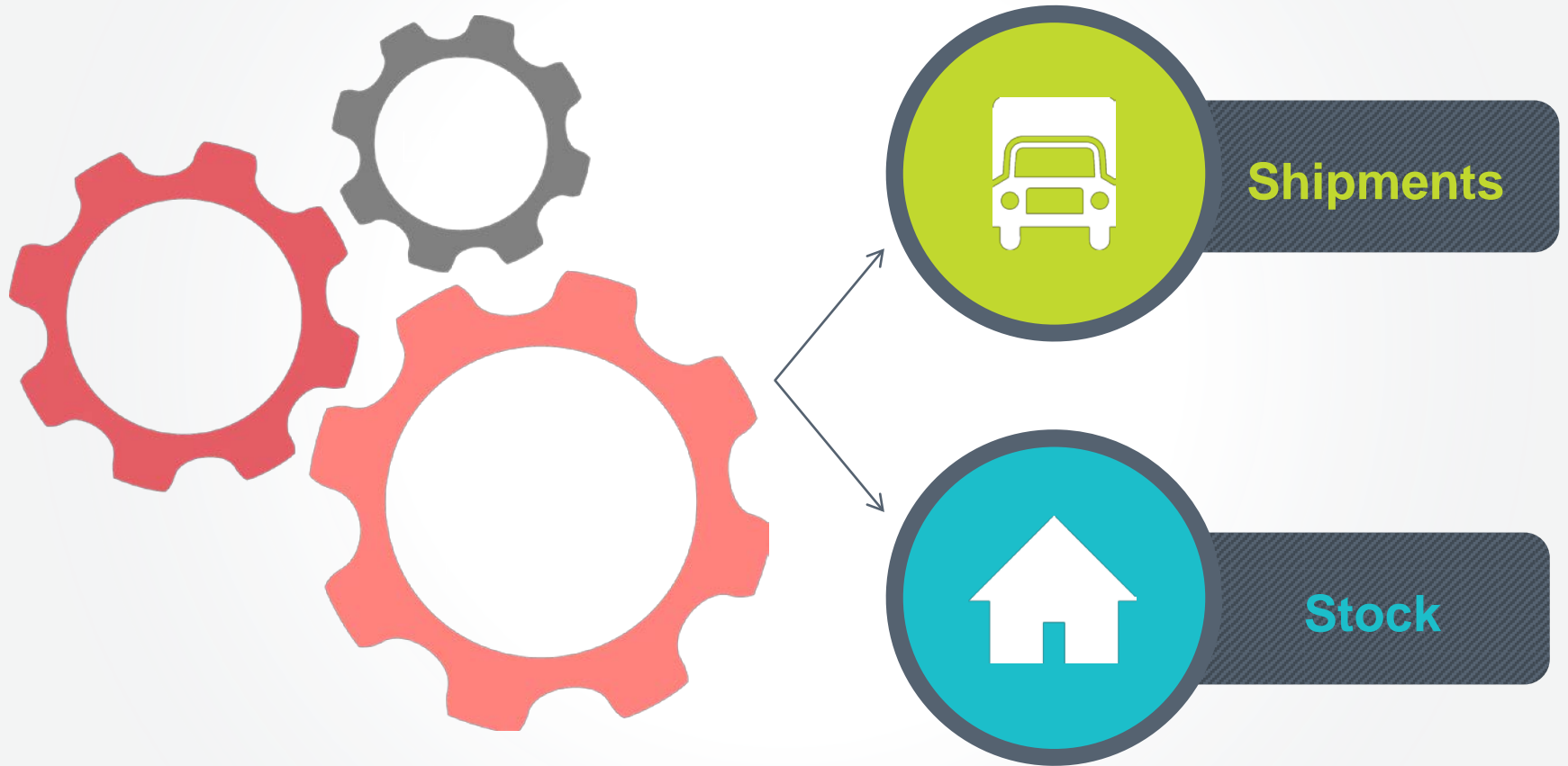
STOCK

The background of the slide is a repeating pattern of teal-colored house icons. Each house icon is a simple silhouette with a triangular roof and a rectangular base with a small notch in the center. The houses are arranged in a grid-like pattern across the entire slide.

INSTALLED STOCK IN 2010

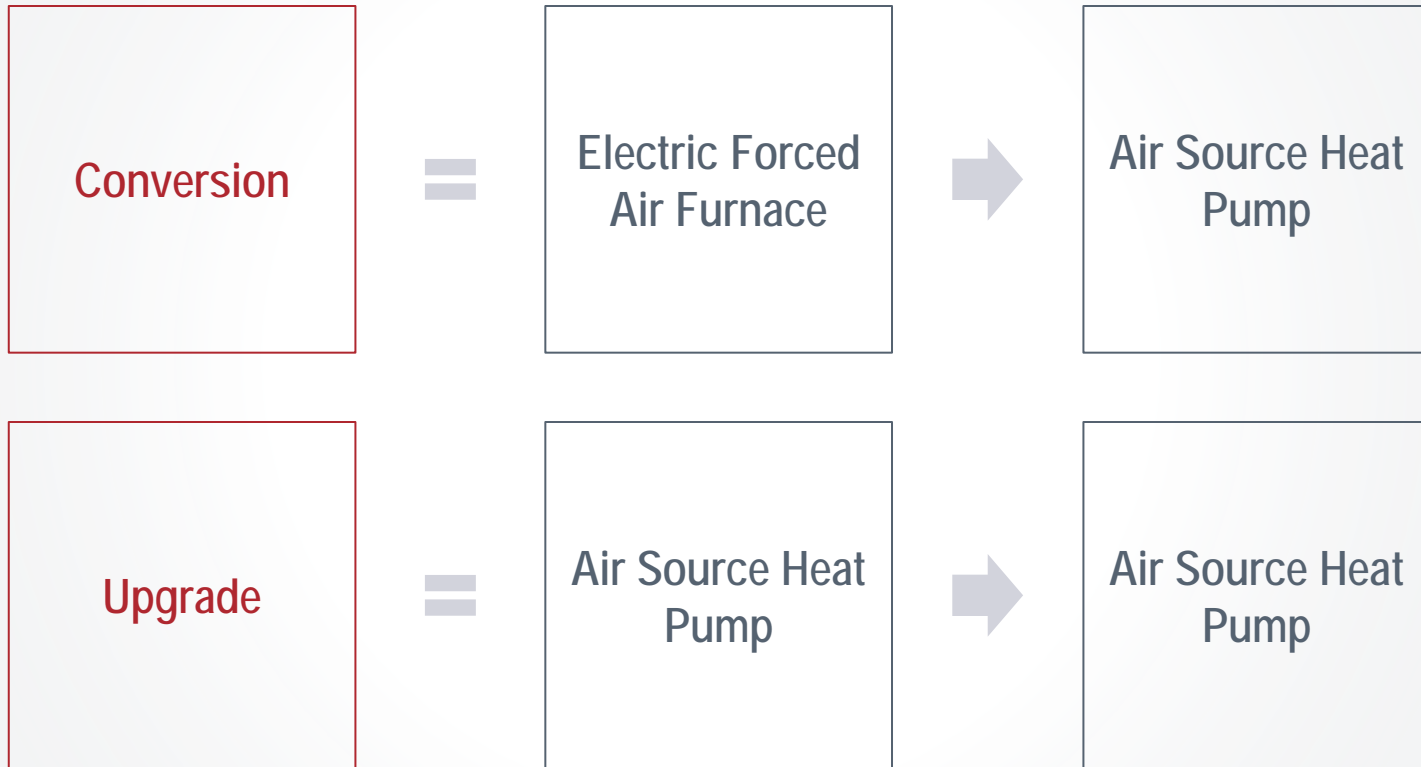


STOCK TURNOVER MODEL OVERVIEW





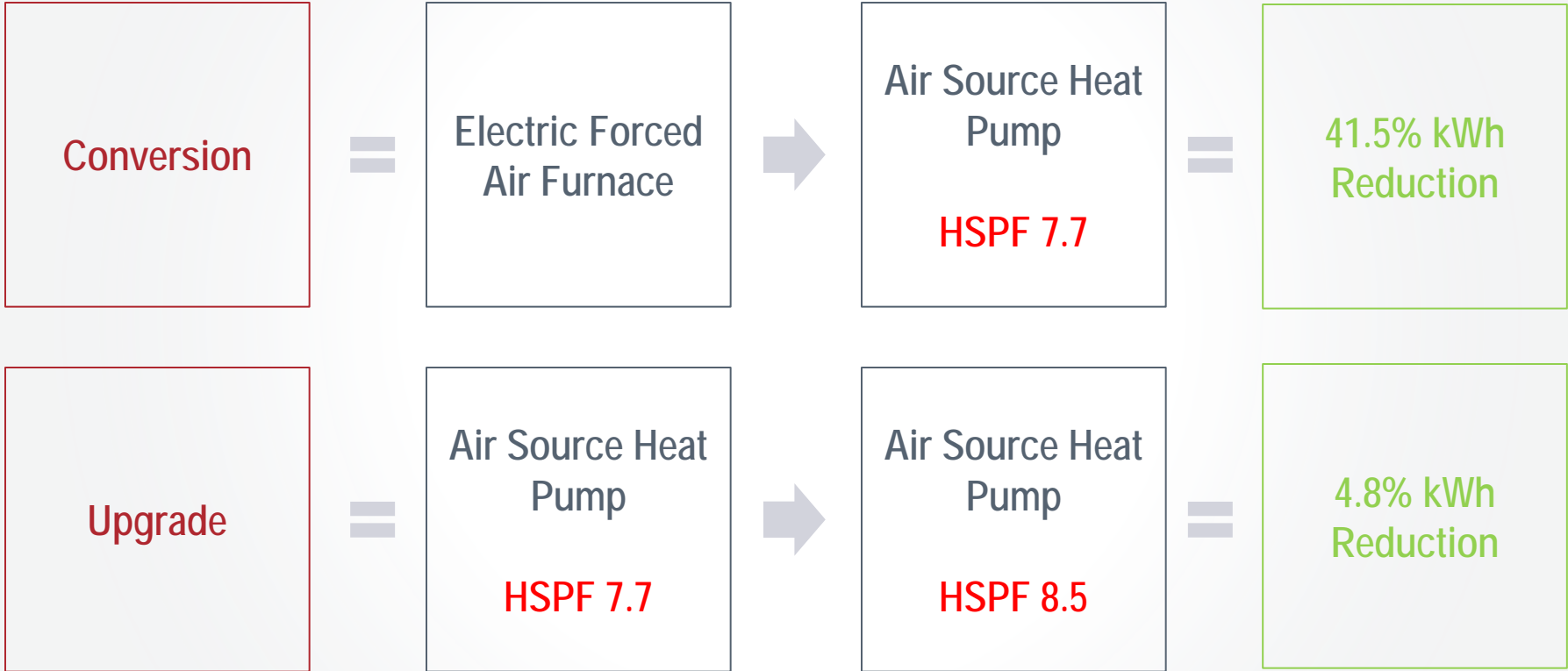
KEY CONCEPT: CONVERSION VS. UPGRADE





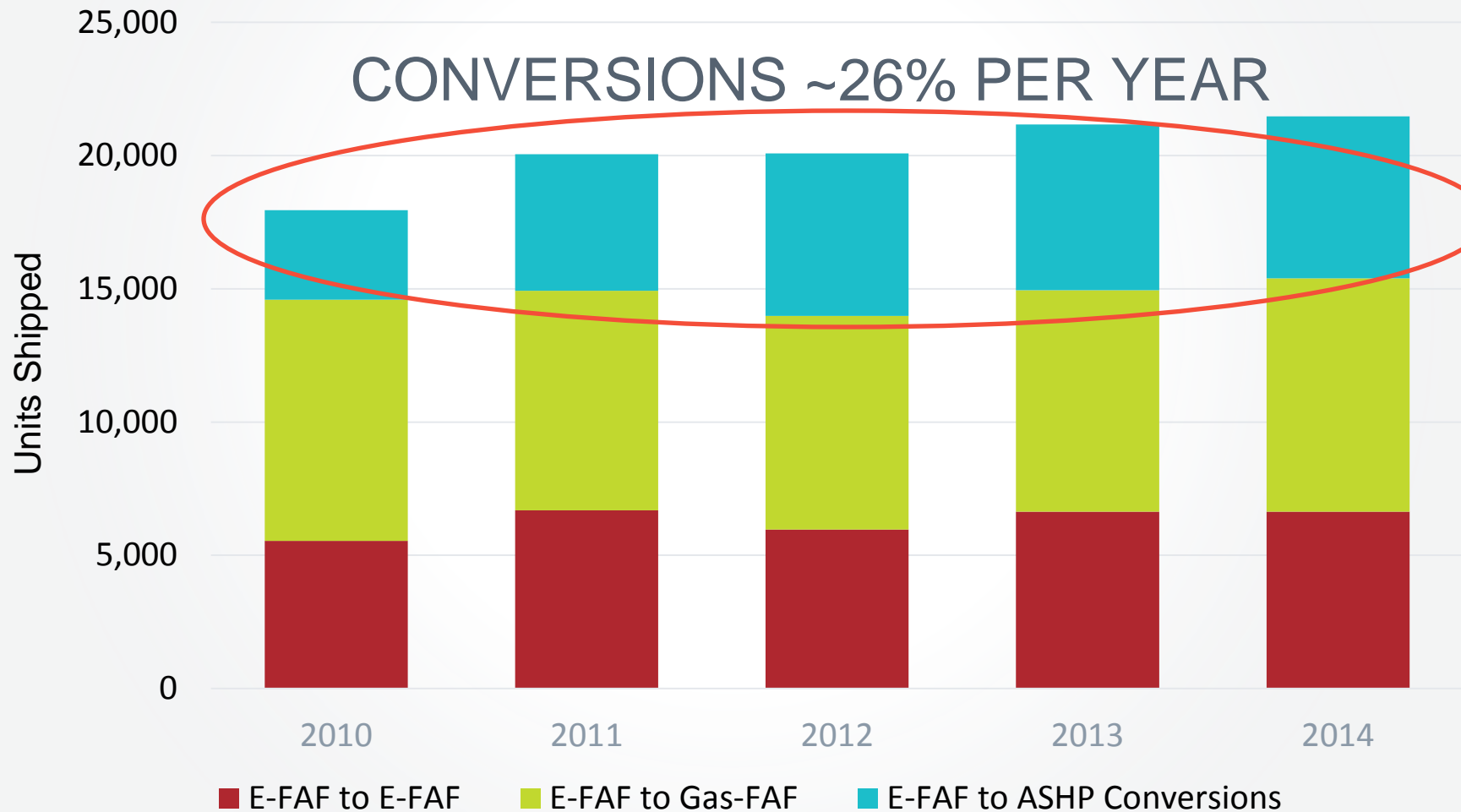
KEY CONCEPT: CONVERSION VS. UPGRADE

CONVERSIONS SAVE MORE

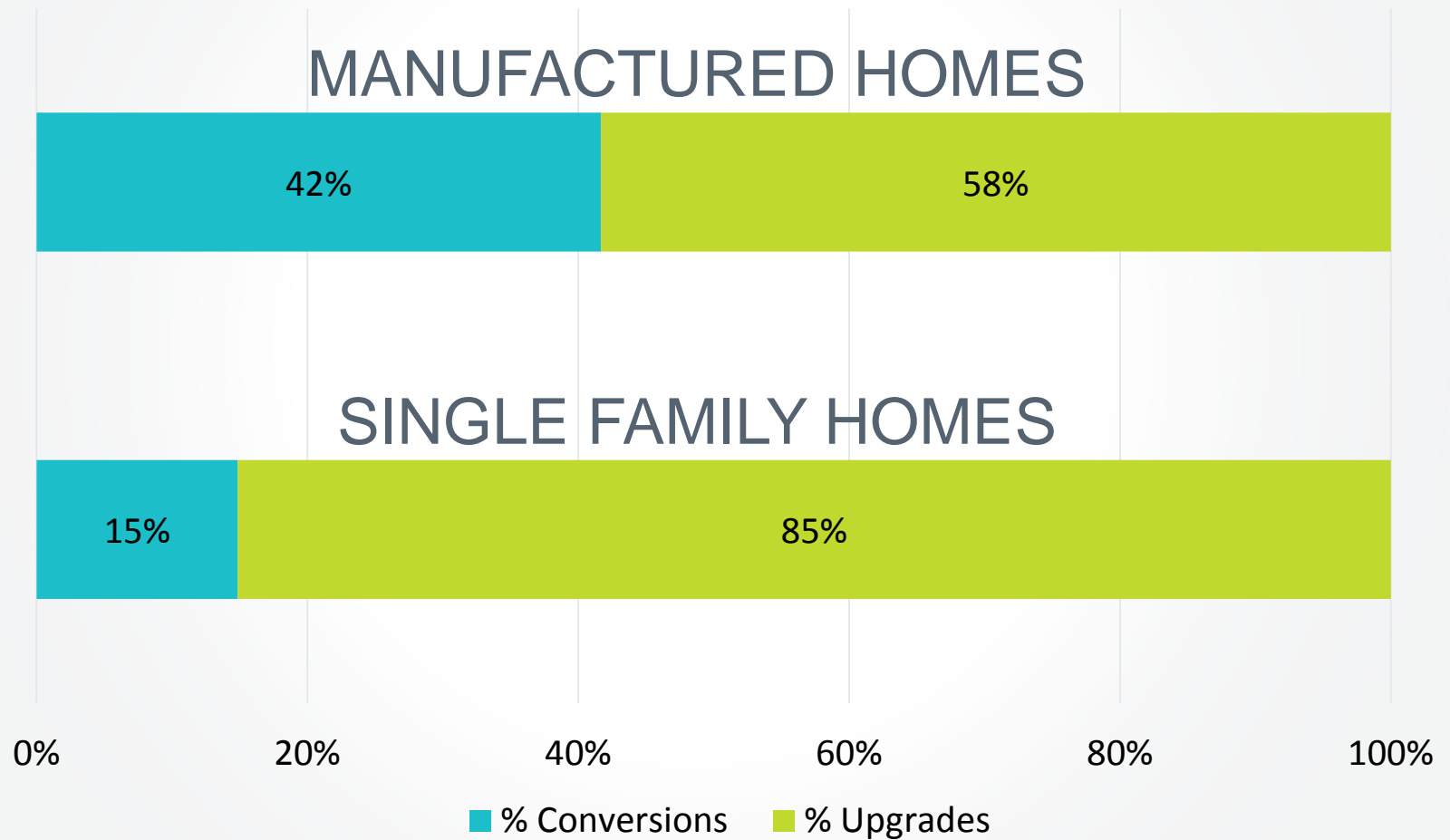




HVAC UNITS REPLACING ELECTRIC FURNACES



THE MAJORITY OF ASHP SALES ARE INSTALLED AS UPGRADES (2014 DATA)





QUESTION 3

What are the total market savings?



TOTAL
MARKET
SAVINGS

=

MARKET
AVERAGE
kWh

-

COUNCIL
BASELINE
kWh

MOMENTUM
SAVINGS

=

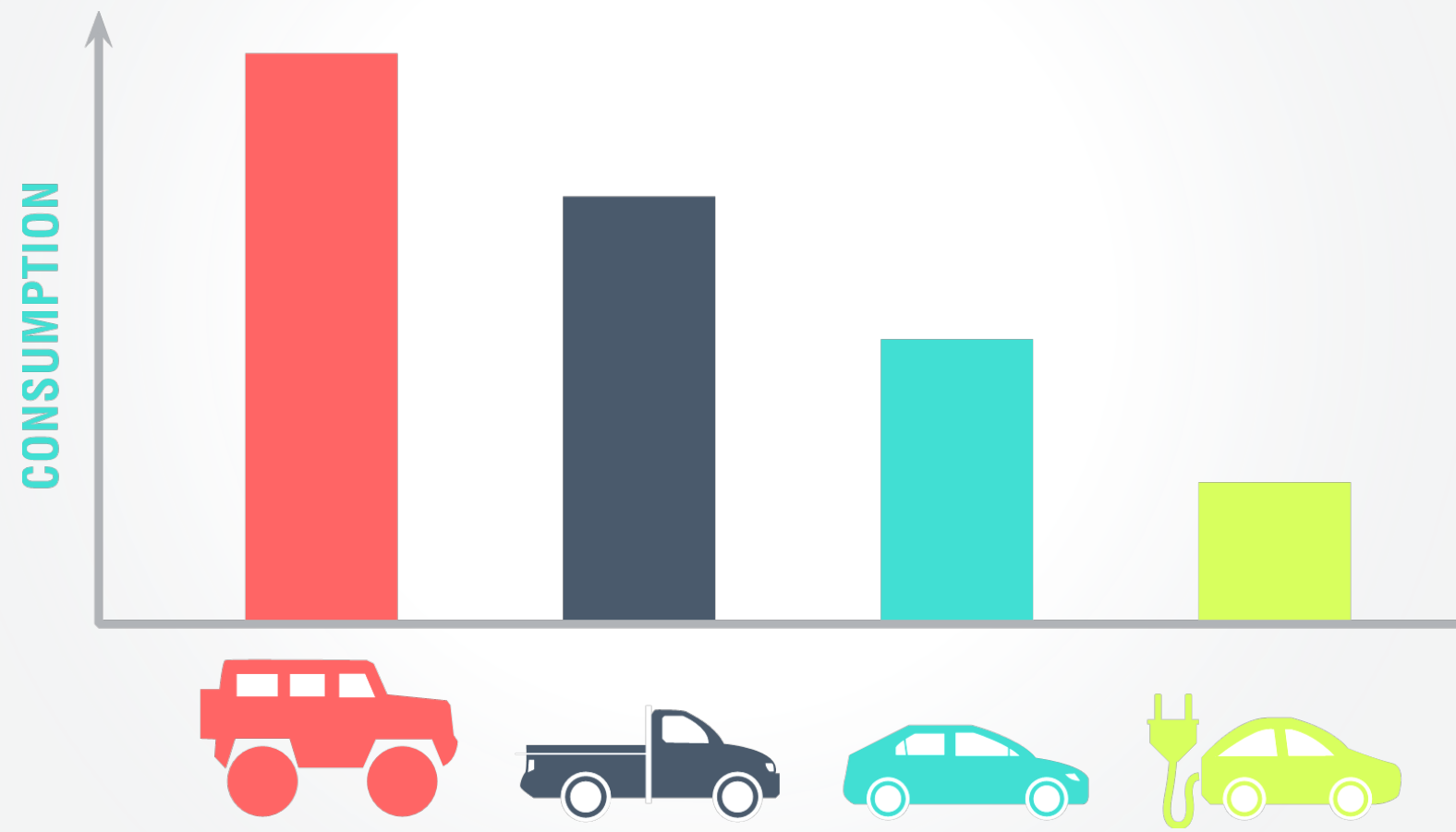
TOTAL
MARKET
SAVINGS

-

PROGRAM
SAVINGS



KEY CONCEPT: UNIT ENERGY CONSUMPTION (UEC)

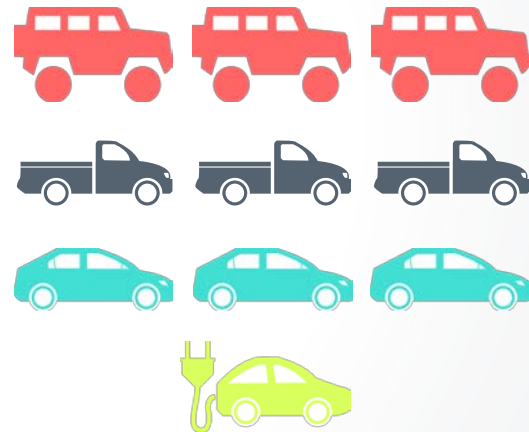




BASELINE EFFICIENCY MIX

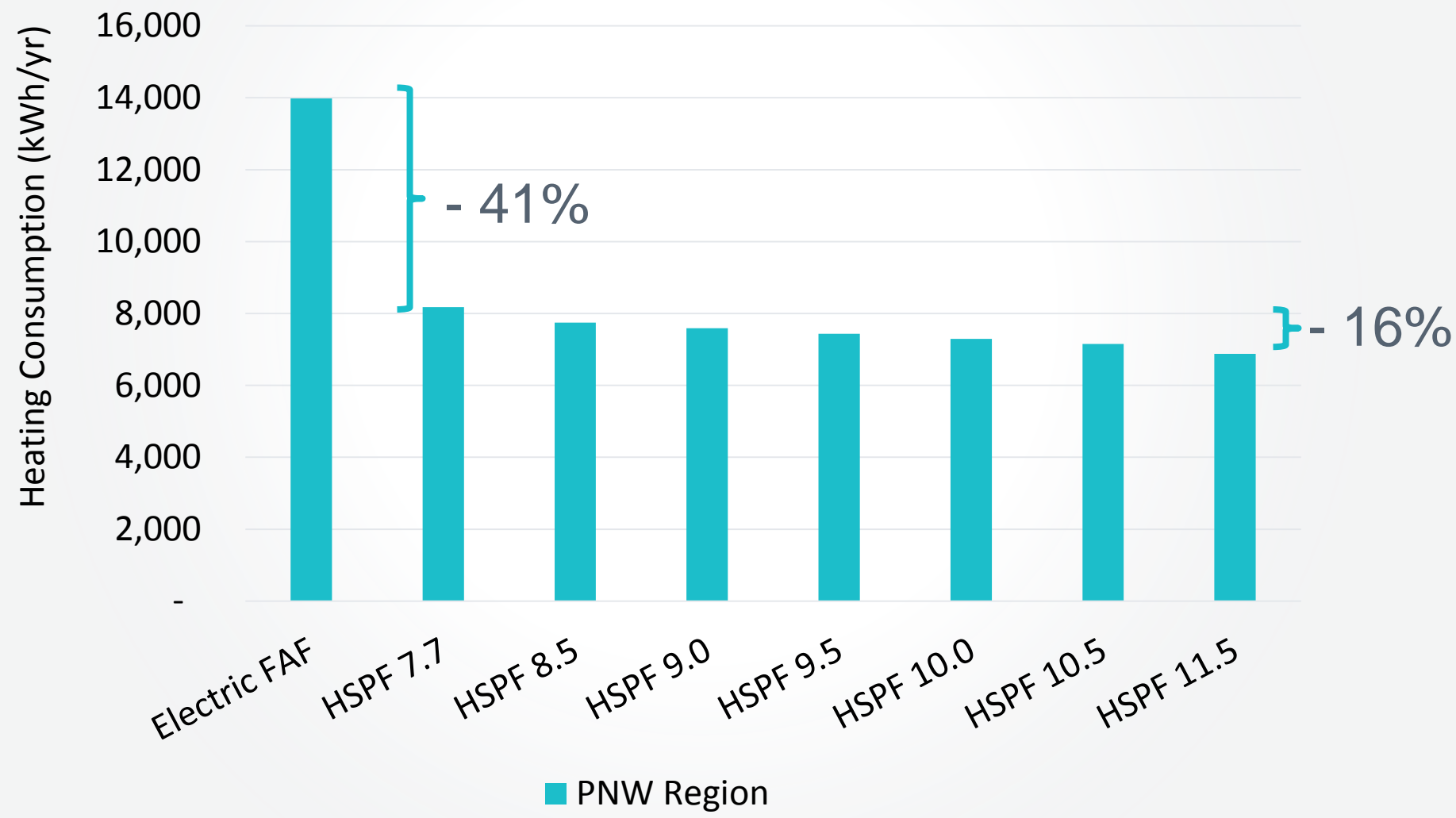


ACTUAL EFFICIENCY MIX





UEC FOR RESIDENTIAL HVAC EQUIPMENT (SINGLE FAMILY)






QUESTION 3a

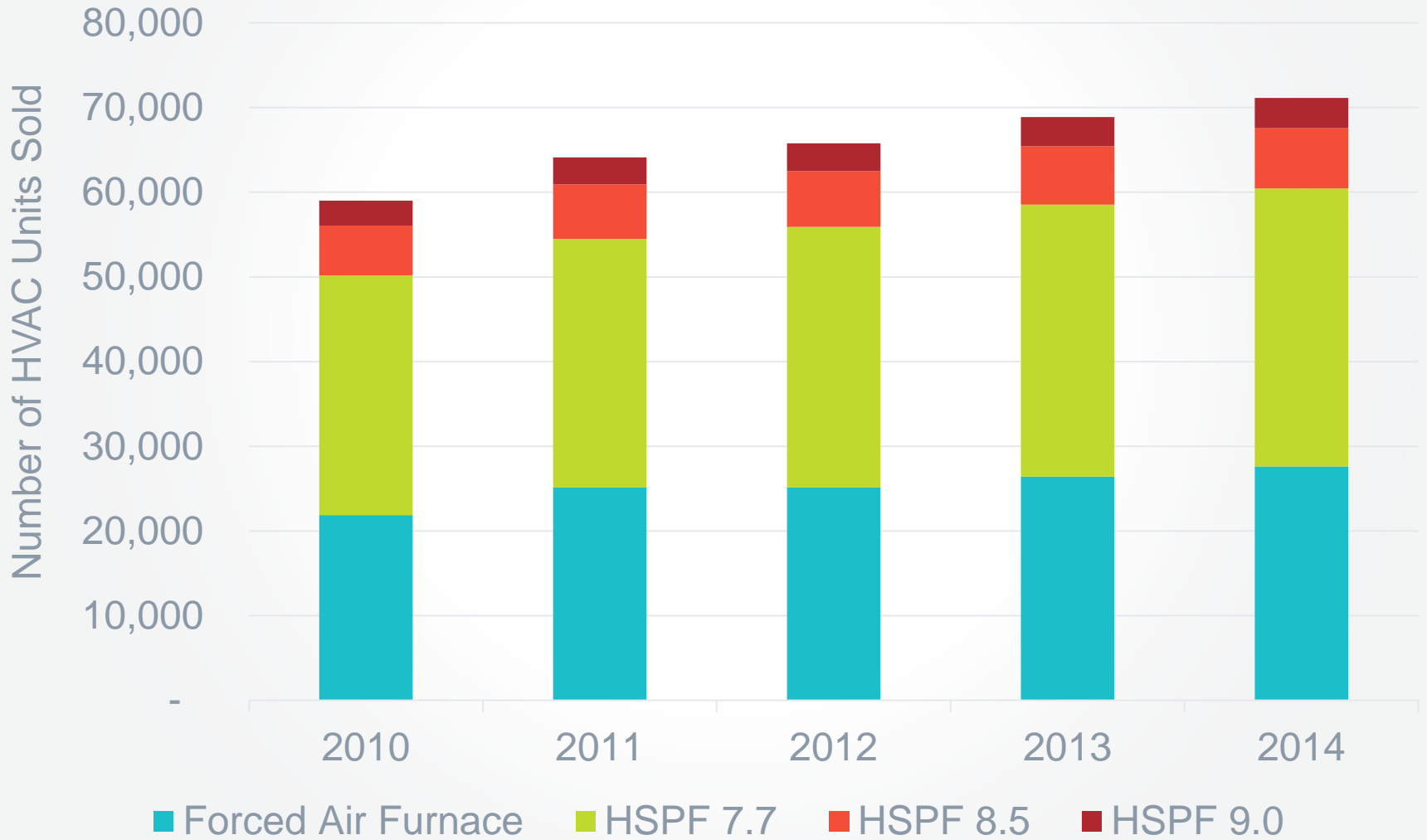
What was the energy use when the Power Plan was written?

Calculated baseline consumption according to **baseline efficiency mix** from the Sixth Plan





TOTAL UNITS SHIPPED BY EFFICIENCY LEVEL – BASE CASE





QUESTION 3b

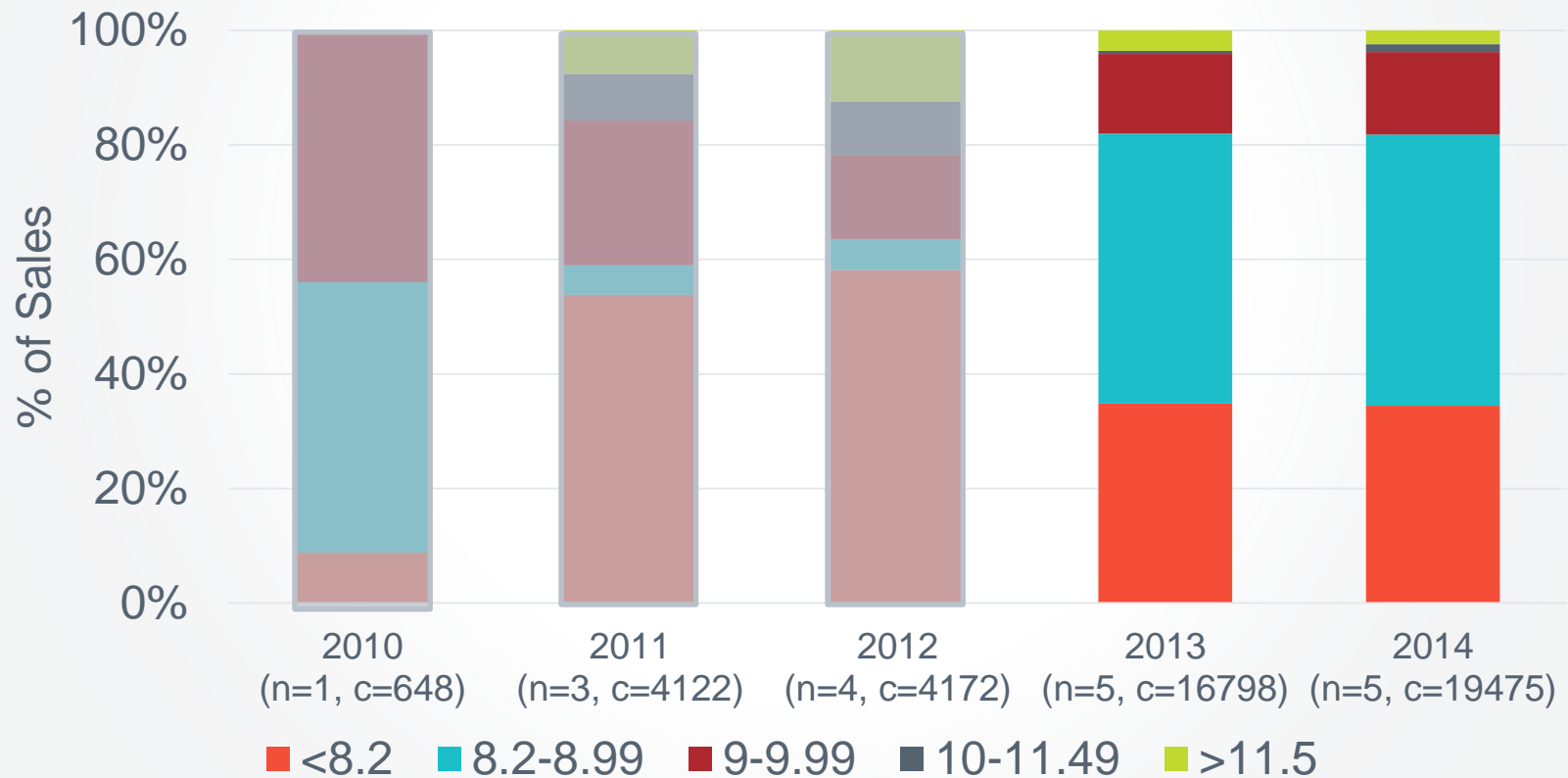
What was the energy use in following years?

Calculated actual consumption using distributor sales data representing roughly half of the market



RESIDENTIAL AIR SOURCE HEAT PUMP SALES BY EFFICIENCY CATEGORY

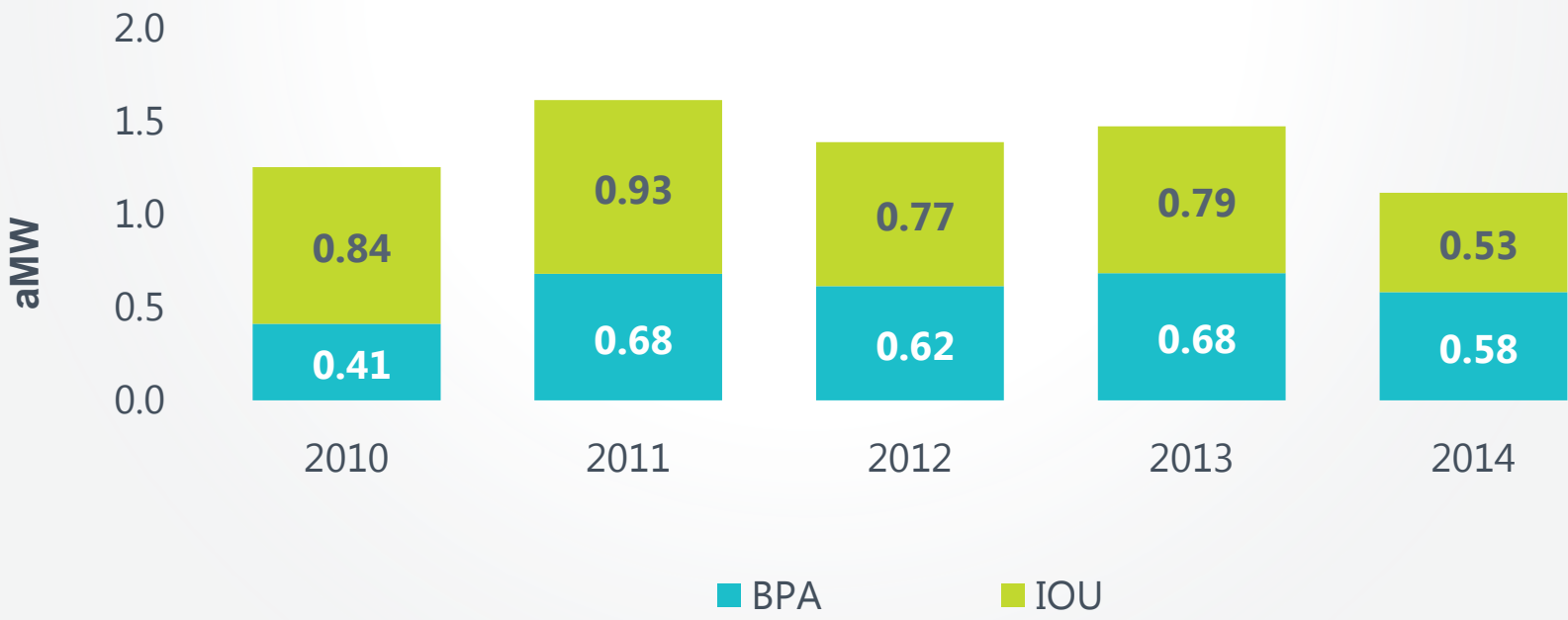
n=number of distributors reporting
c = count of units represented





QUESTION 4

What are the program savings?



CALCULATING

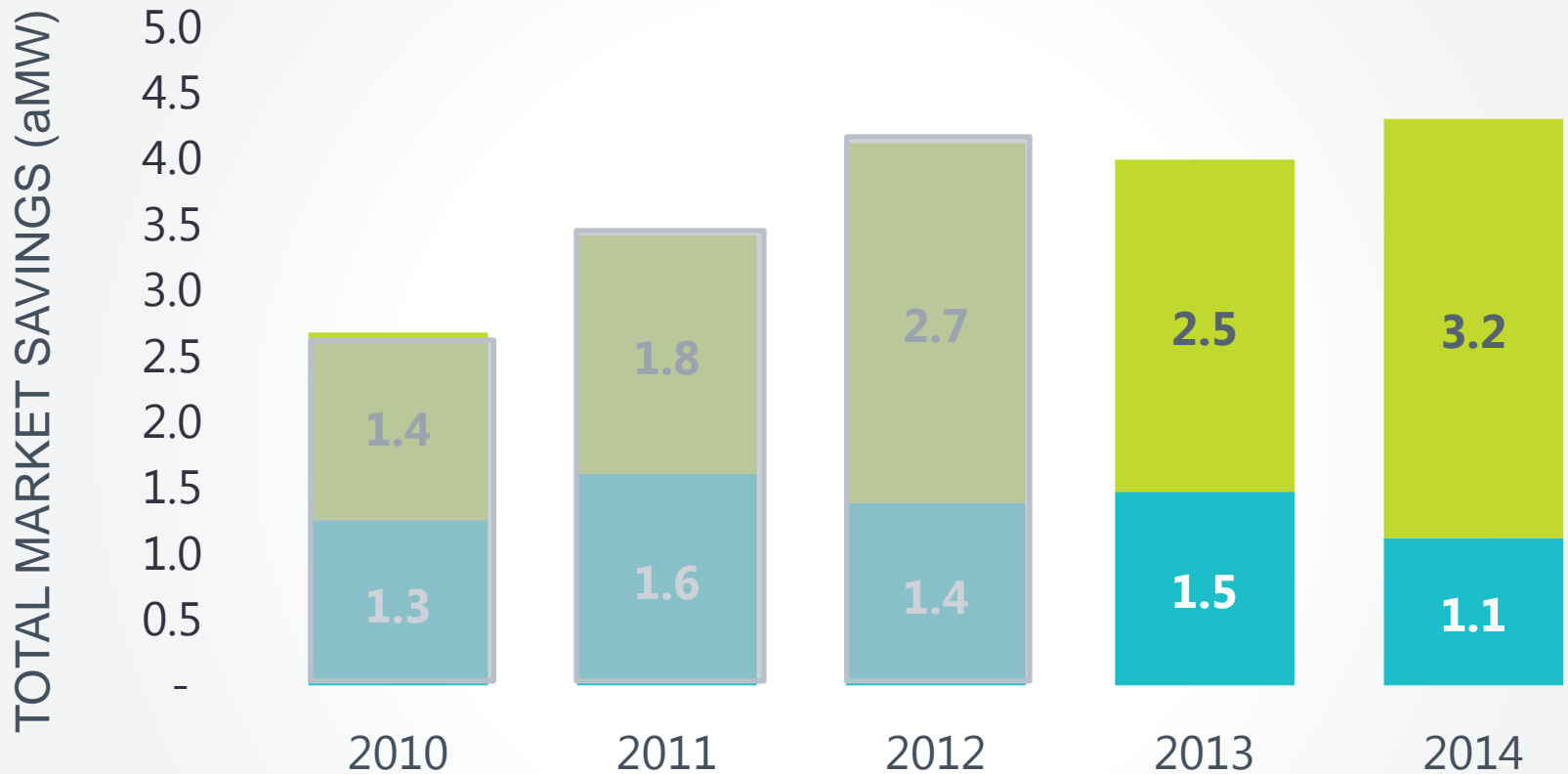
MOMENTUM SAVINGS—

THE RESULTS (DRAFT)





TOTAL MARKET SAVINGS FROM THE RESIDENTIAL ASHP MARKET



■ Program Savings (aMW) ■ Momentum Savings (aMW)

DATA GAPS AND

FUTURE PLANNED

RESEARCH





Enhance
sales data



Understand
prevalence
of conversions
vs. upgrades



Understand
installation
context by
home type