Shining the light on the unmetered

Rory Christian
Director, New York Clean Energy

EDF
ENVIRONMENTAL DEFENSE FUND®

Environmental Defense Fund's Approach

Sound Science

Corporate Partnerships

Market-Based Solutions

Non-Partisan Policy

Agenda

1. Background

2. Methodology & Findings

3. Policy Recommendations

NYS 2030 Goals

40%

Reduction

in GHG emissions from 1990 levels

Reducing greenhouse gas (GHG) emissions from the energy sector—power generation, industry, buildings, and transportation—is critical to protecting the health and welfare of New Yorkers and reaching the longer term goal of decreasing total carbon emissions 80% by 2050.

50%

Generation

of electricity from renewable energy sources

Renewable resources, including solar, wind, hydropower, and biomass, will play a vital role in reducing electricity price volatility and curbing carbon emissions.

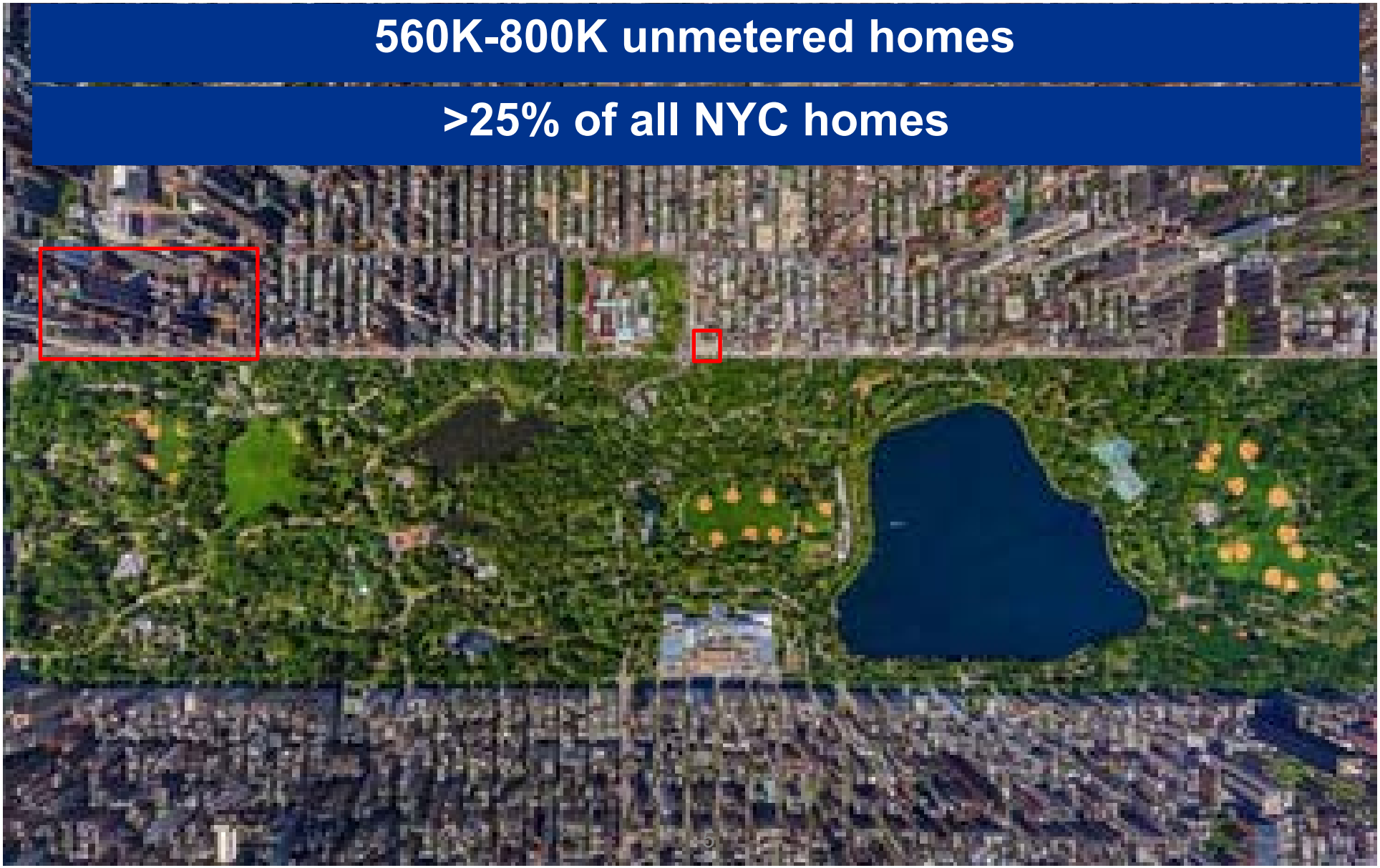
185 TBtu

Savings

in statewide energy efficiency

Energy efficiency results in lower energy bills and is the single most cost effective tool in achieving clean energy objectives. 185 trillion British thermal units in energy efficiency savings in end use energy by 2030

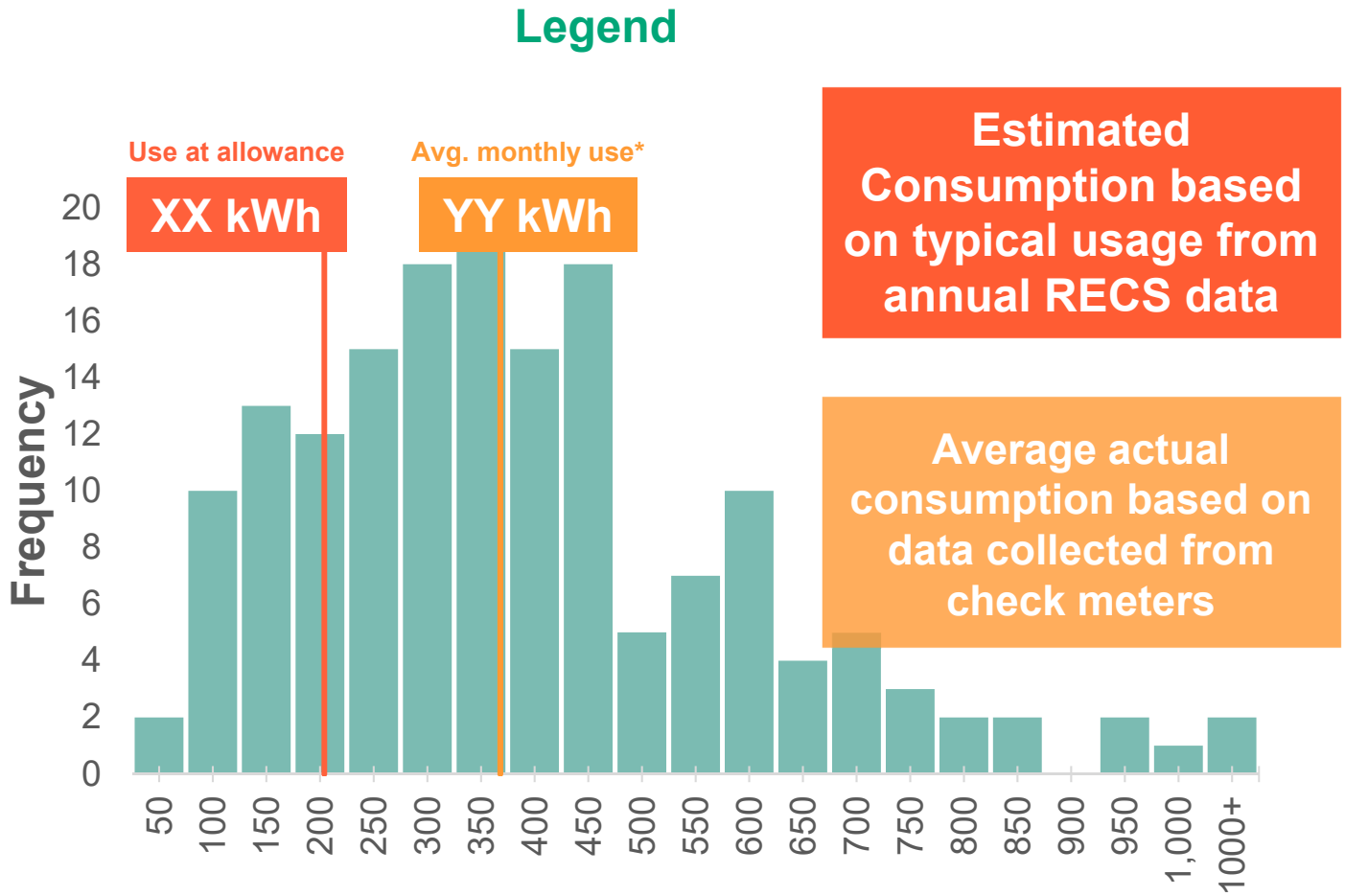
Quantifying The Scope



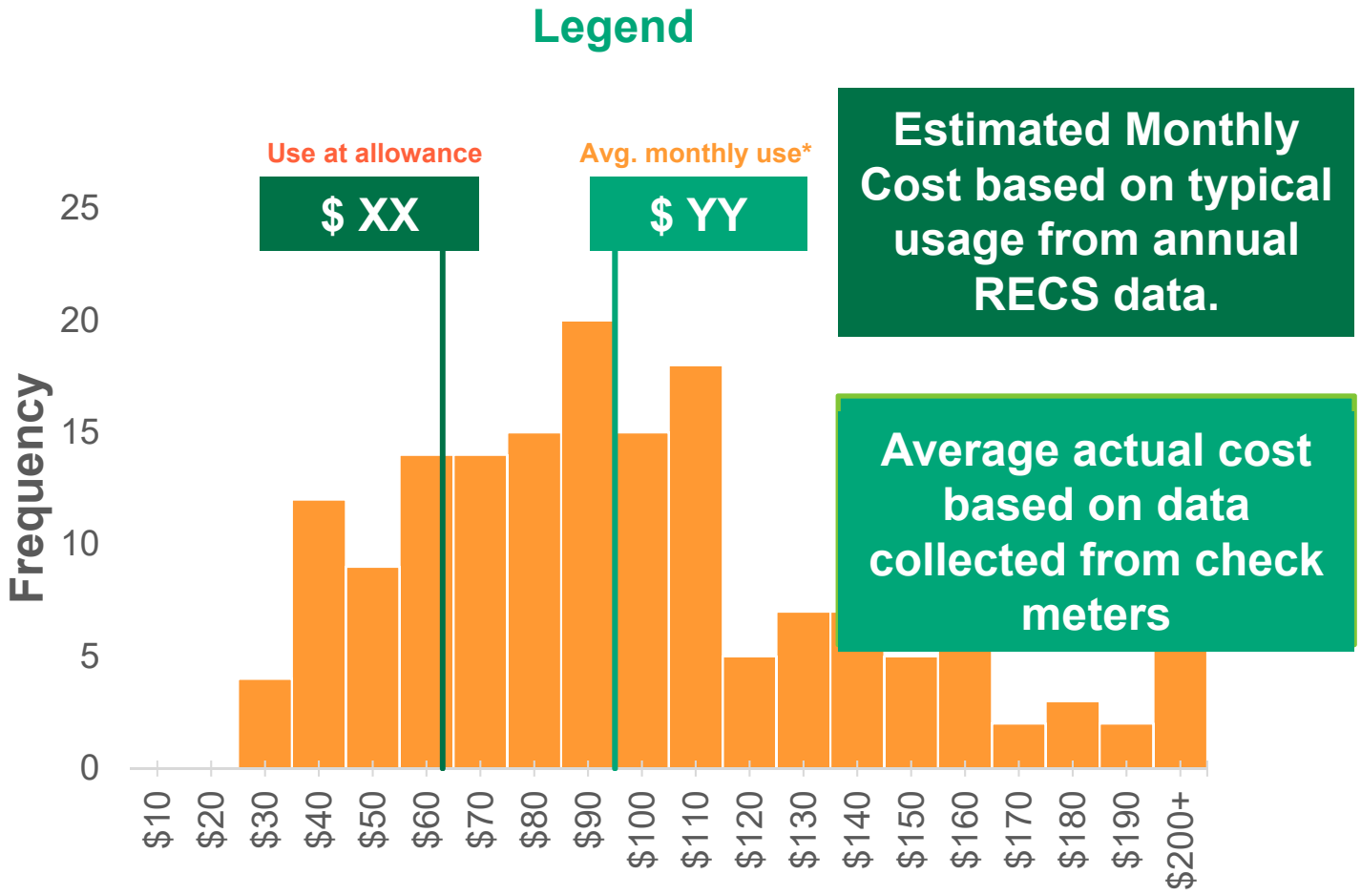
Data & Methodology

- Two years of 15 minute interval data
- 500 apartments – Affordable Housing
- 1, 2, 3 bedroom apartments

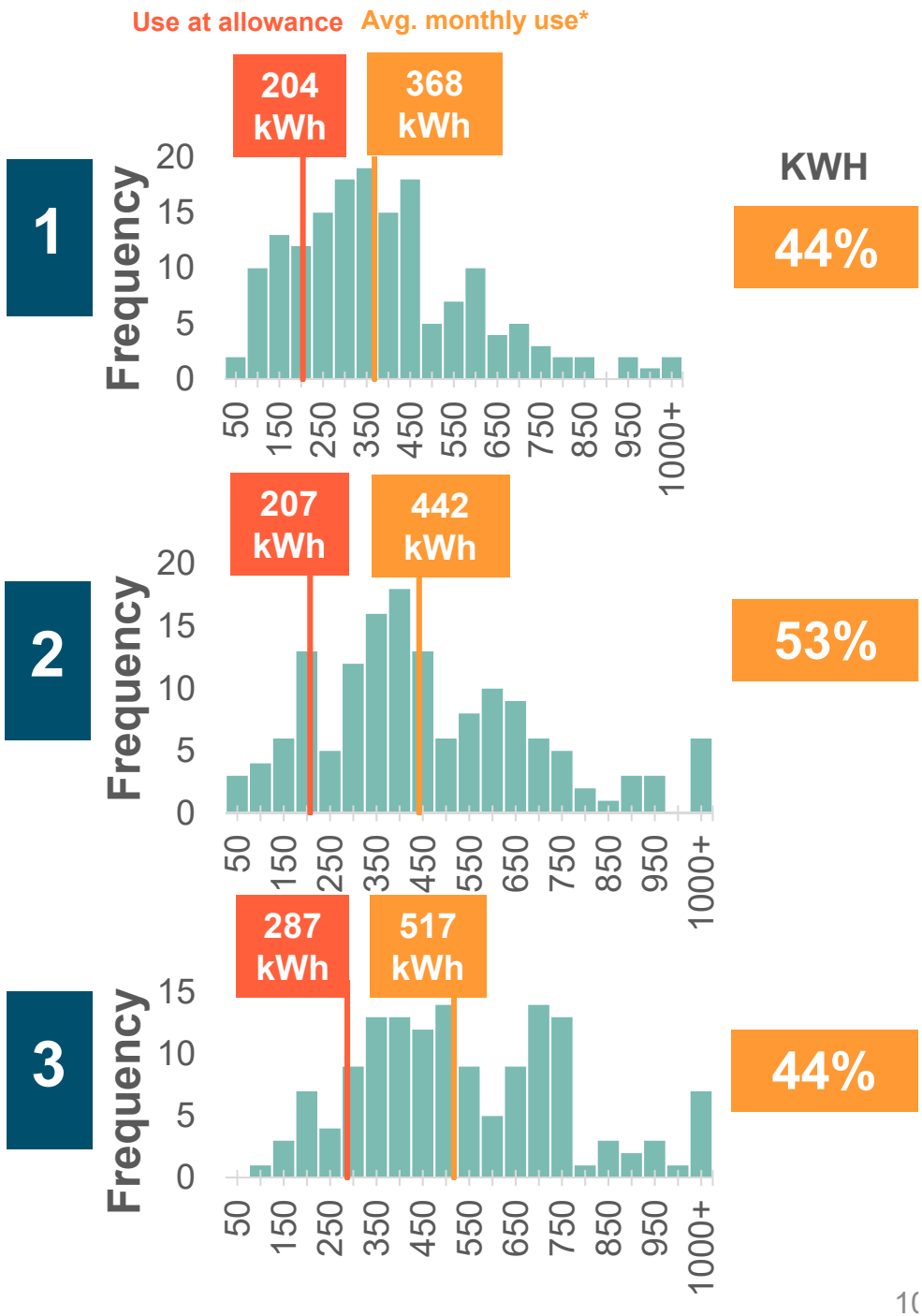
Findings

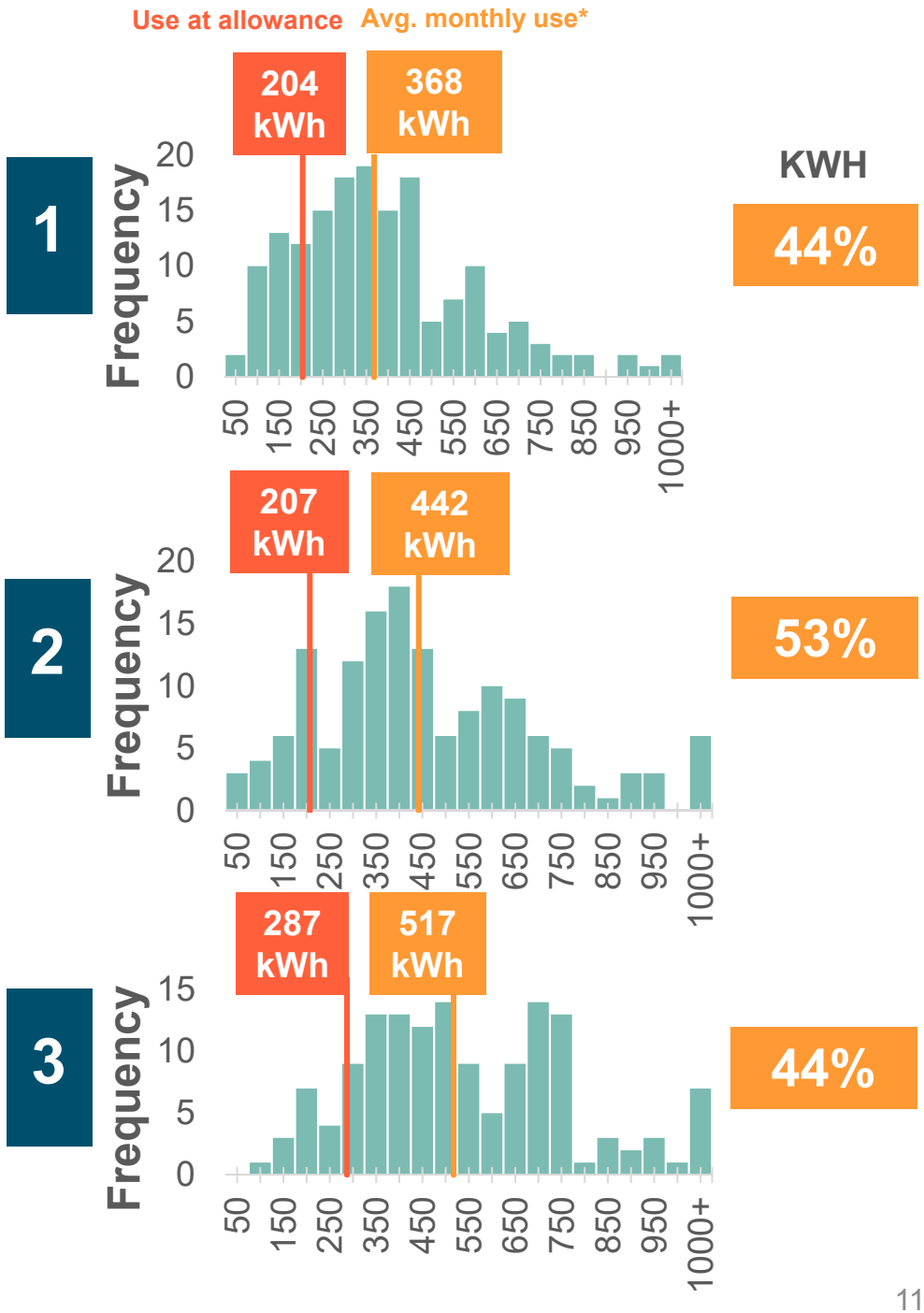

Legend
Use at allowance
XX kWh
Avg. monthly use*
YY kWh
Estimated Consumption based on typical usage from annual RECS data
Average actual consumption based on data collected from check meters
Frequency
0
2
4
6
8
10
12
14
16
18
20
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1,000
1000+

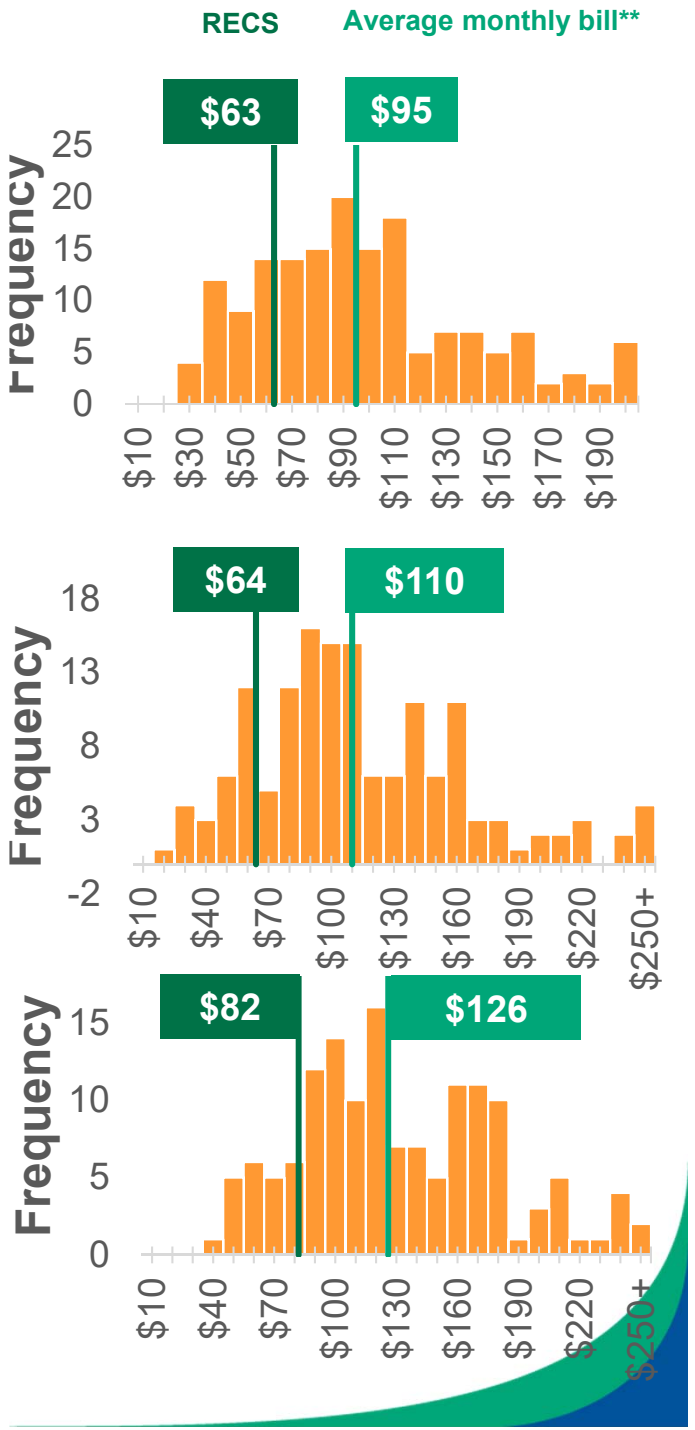
Findings

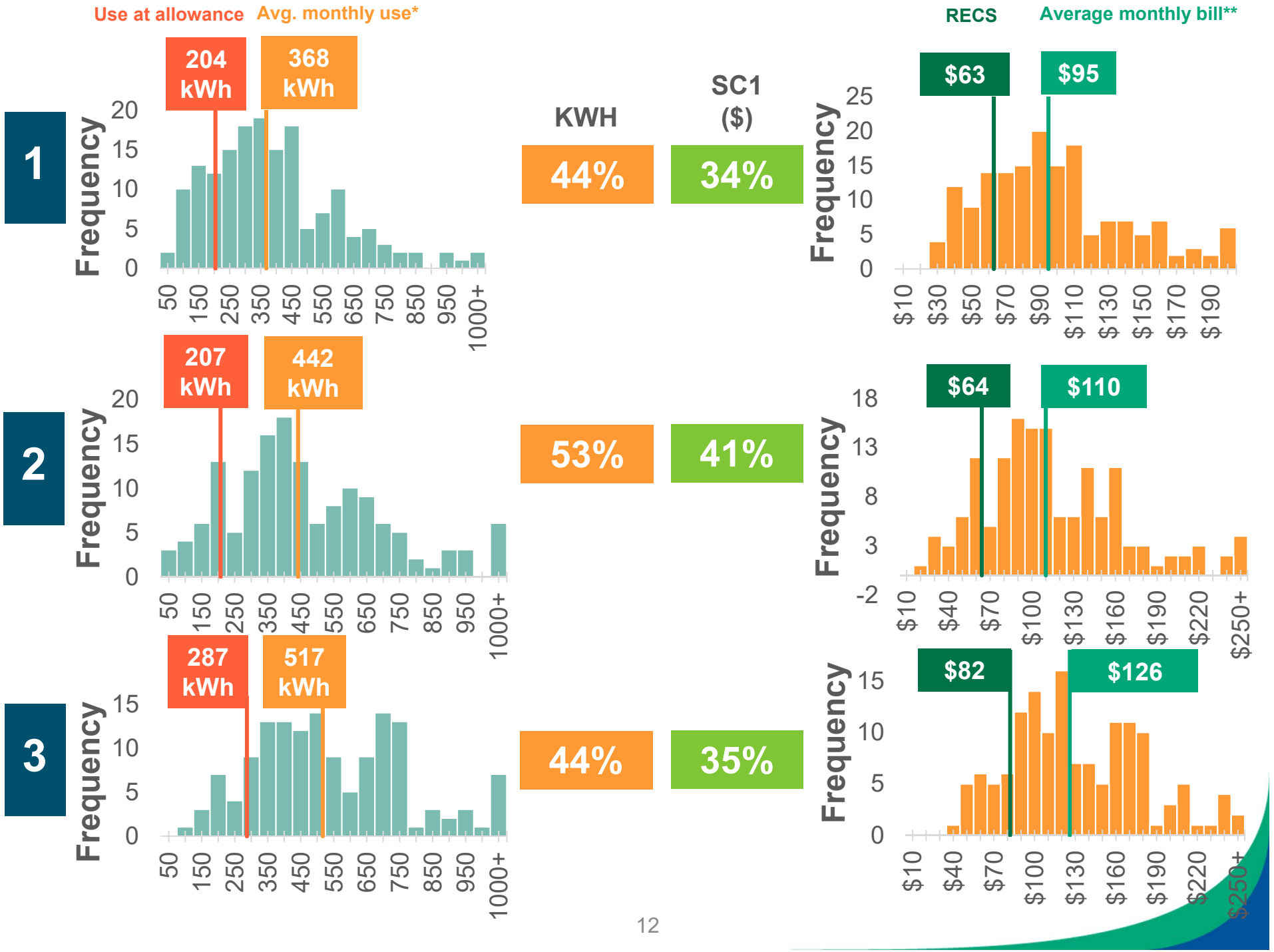

Legend
Use at allowance
$ XX
Avg. monthly use*
$ YY
Estimated Monthly Cost based on typical usage from annual RECS data.
Average actual cost based on data collected from check meters
Frequency
25
20
15
10
5
0
$10
$20
$30
$40
$50
$60
$70
$80
$90
$100
$110
$120
$130
$140
$150
$160
$170
$180
$190
$200+

Use at allowance
Avg. monthly use*
1
204 kWh
368 kWh
Frequency
20
15
10
5
0
50
150
250
350
450
550
650
750
850
950
1000+
2
207 kWh
442 kWh
Frequency
20
15
10
5
0
50
150
250
350
450
550
650
750
850
950
1000+
3
287 kWh
517 kWh
Frequency
15
10
5
0
50
150
250
350
450
550
650
750
850
950
1000+

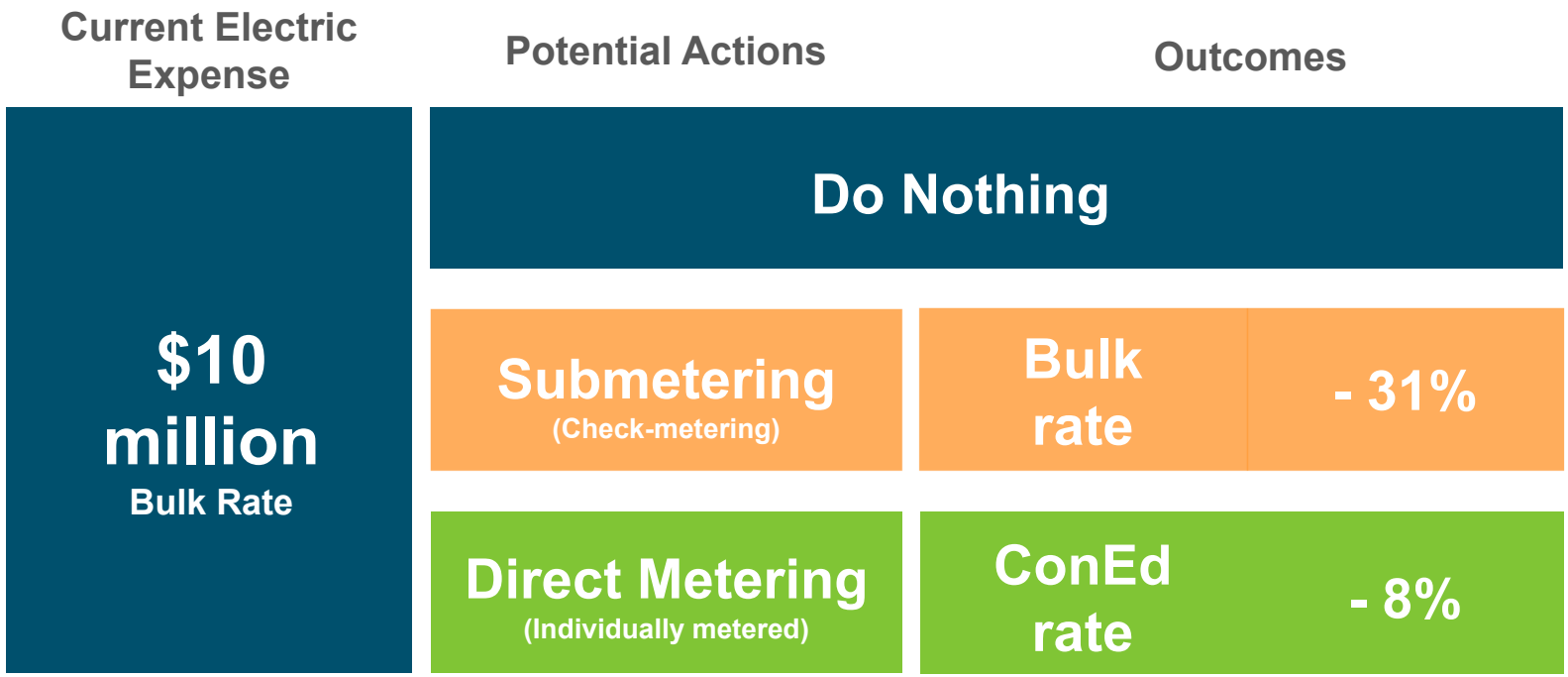

Use at allowance
Avg. monthly use*
1
204 kWh
368 kWh
Frequency
20
15
10
5
0
50
150
250
350
450
550
650
750
850
950
1000+
KWH
44%
2
207 kWh
442 kWh
53%
3
287 kWh
517 kWh
44%


Use at allowance
Avg. monthly use*
1
204 kWh
368 kWh
Frequency
KWH
44%
2
207 kWh
442 kWh
53%
3
287 kWh
517 kWh
44%
50 150 250 350 450 550 650 750 850 950 1000+


RECS
Average monthly bill**
$63
$95
$64
$110
$82
$126
Frequency
$10 $30 $50 $70 $90 $110 $130 $150 $170 $190
$10 $40 $70 $100 $130 $160 $190 $220 $250+


Use at allowance
Avg. monthly use*
RECS
Average monthly bill**
KWH
SC1 ($)
1
204 kWh
368 kWh
$63
$95
44%
34%
2
207 kWh
442 kWh
$64
$110
53%
41%
3
287 kWh
517 kWh
$82
$126
44%
35%
Frequency

Potential Savings



CASE STUDY – PARK CITY ESTATES, QUEENS

SUBMETERING FOR MULTIFAMILY BUILDING

From growing costs to big savings — thanks to submetering

Aubrey C. Phillibert, FirstService Residential Senior Property Manager, Park City Estates, Queens, NY

SNAPSHOT

Background
- 1,049-unit, five-building co-op complex
- Built in 1960 with one master meter for electricity in each building
- All residents paid the same amount for electricity monthly, regardless of usage

Benefits
- 15% savings in maintenance costs
- Residents only pay for the electricity they use
- Electrical issues posing safety risks were found and fixed

Residents of Park City Estates, a co-op in Queens, NY, had a relatively common problem for apartment dwellers: Each of the complex's five buildings were master metered, so it was impossible to bill residents individually. They all paid the same electricity bill, whether or not they were conservative with their energy use.

When FirstService Residential took over management in 2010, the complex had been experiencing double-digit maintenance charge increases for five years. "It was self-managed, and it seemed that the operating expenses were spiraling out of control," said Aubrey Phillibert, the FirstService Residential senior property manager of Park City Estates.

To lower maintenance costs and reduce building-wide energy consumption, Park City Estates owners decided to upgrade to electricity submetering and give residents control over their electricity use. Now, Park City Estates residents only pay for the electricity they actually consume.

Following the submetering conversion and other energy-saving initiatives, the building cut maintenance costs by 15%.

Smooth switch to savings

The superintendent and the installation team put residents' minds at ease, explaining that there would be no damage to their living space—and reminded them of the upside of submetering. "We showed them how to do a back-of-the-envelope calculation of what we could save them," Phillibert says. All of the communication worked. Despite its large scale, Park City Estates' submetering project proceeded smoothly. Residents are also changing their behavior, and finding even more ways to reduce their bills and their impact on the environment.

CASE STUDY – TOWER EAST, MANHATTAN

SUBMETERING FOR MULTIFAMILY BUILDING

Taking ownership of electricity use in a NYC co-op

Tower East, New York, NY

SNAPSHOT

Background
- 31-unit co-op building
- Built in 1960, with one master meter for electricity
- All residents paid the same amount for electricity monthly, regardless of usage

Benefits
- Electrical issues posing safety risks were found and fixed
- Up to 20% reduction in building energy use and cost
- Residents only pay for the electricity they use

All residents of New York City's Tower East co-op paid the same monthly electricity bill, whether or not they were conservative with their energy use. As the price of electricity rose, the building's co-op board decided to take action.

Tower East is a co-op apartment building built in 1960 that rises 34 floors above East 72nd Street between Lexington and Third Avenue in Manhattan. Like other buildings of its era, Tower East had a single electric master meter, so it was impossible to bill residents individually. Tower East residents decided to upgrade to electricity submetering and gain control over their electricity use, which can reduce building-wide energy consumption by up to 20%.

Teamwork leads to success

Resident Manager Adrian Sanchez implemented a two-prong strategy to make the conversion to submetering simple and effective. First, he scheduled a pre-install walk-through with each resident to identify meter location and assess carpentry and plastering needs. Second, he worked with an energy metering expert to ensure the electrical crew could work quickly, in tandem with Sanchez's finishing team.

Communication with residents throughout the project eliminated surprises, and the crews finished the entire building install in only 10 days. "The process was seamless and transparent. Our residents had no evidence that we were even in their apartments, except for the new meter being there," said Sanchez.

Lower bills, added value

Tower East residents now only pay for the electricity they actually consume, which has increased the property's value. Residents are still able to purchase electricity at a bulk rate, which creates additional savings.

Recommendations

- Residential metering in new construction
- Enhanced support for landlords & tenants
- Develop transition plan/guidelines
- Establish EAMs/EE Targets for metering

Thank you

Rory Christian
Director, New York Clean Energy

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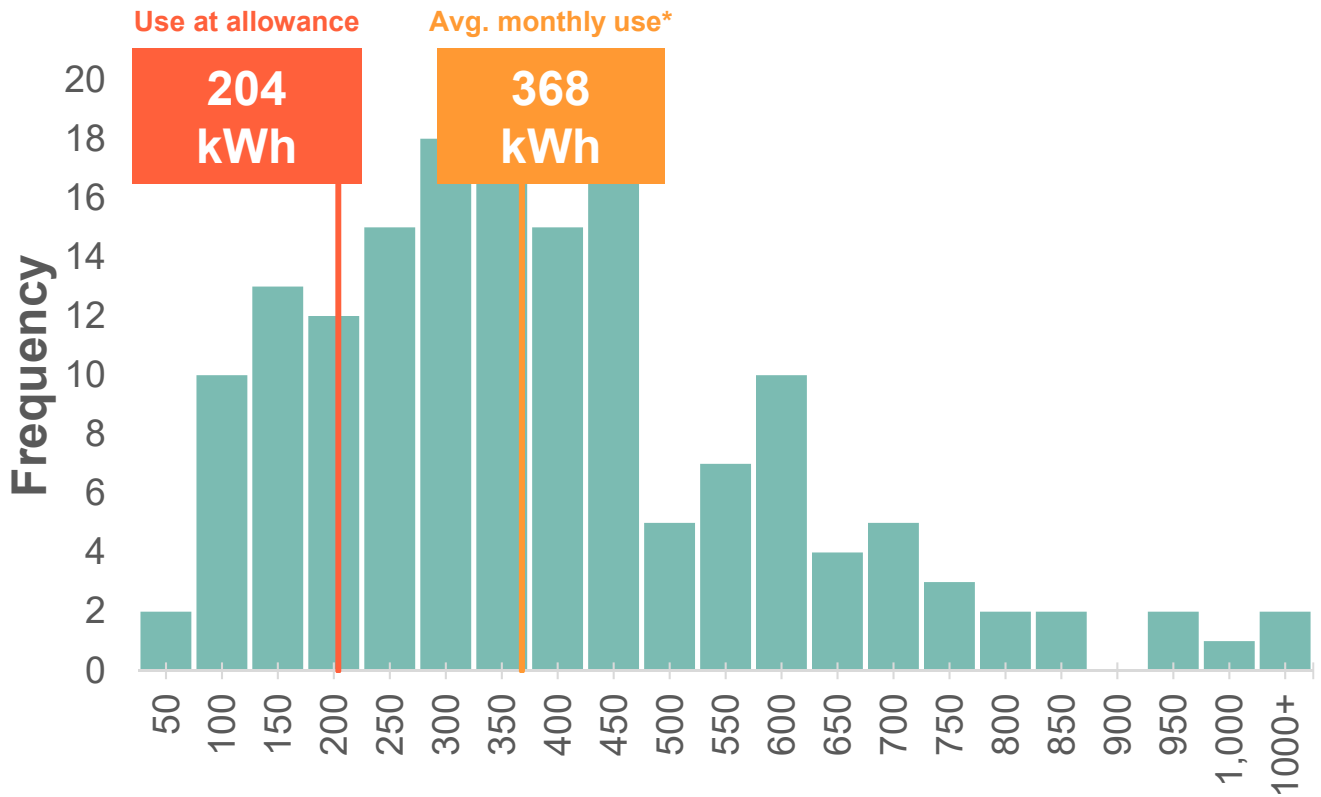
Findings

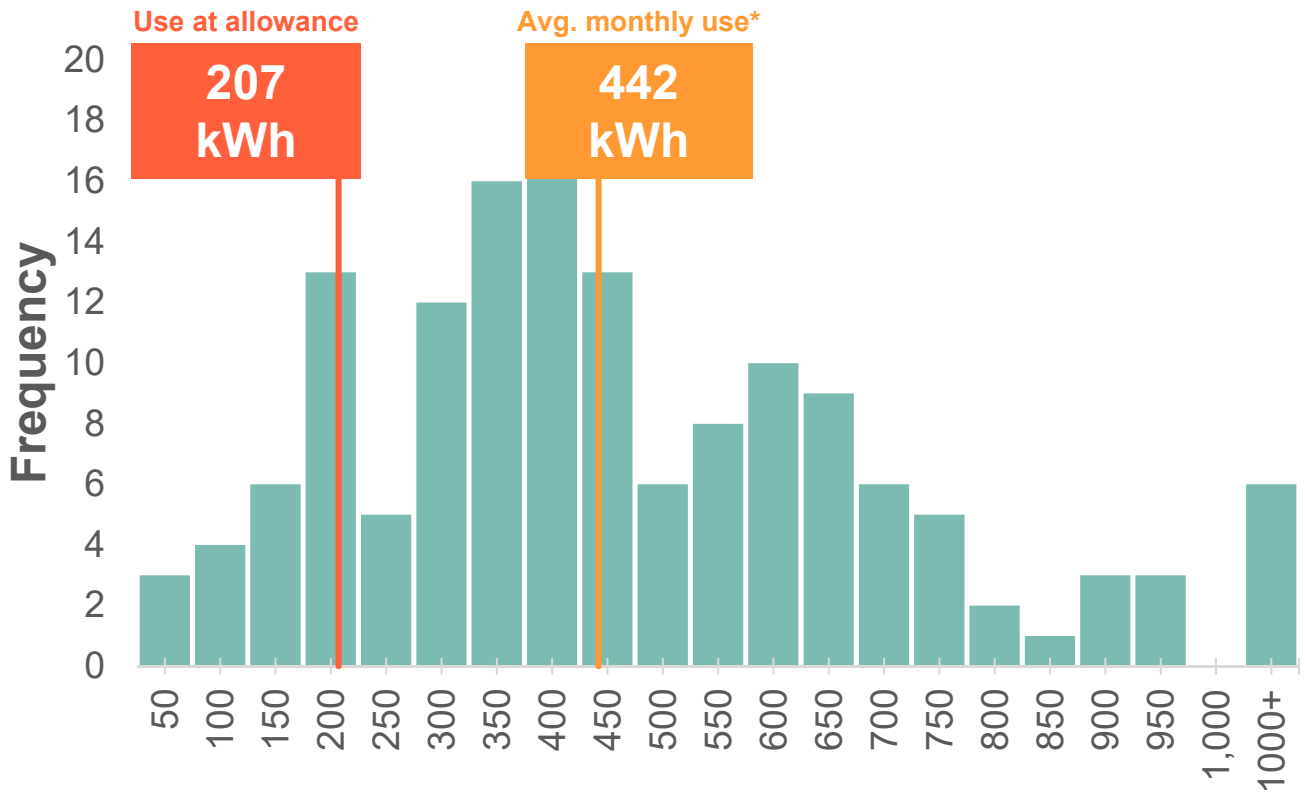
Monthly Use for One-Bedroom Apartments



* Average of 164 apartments

Findings

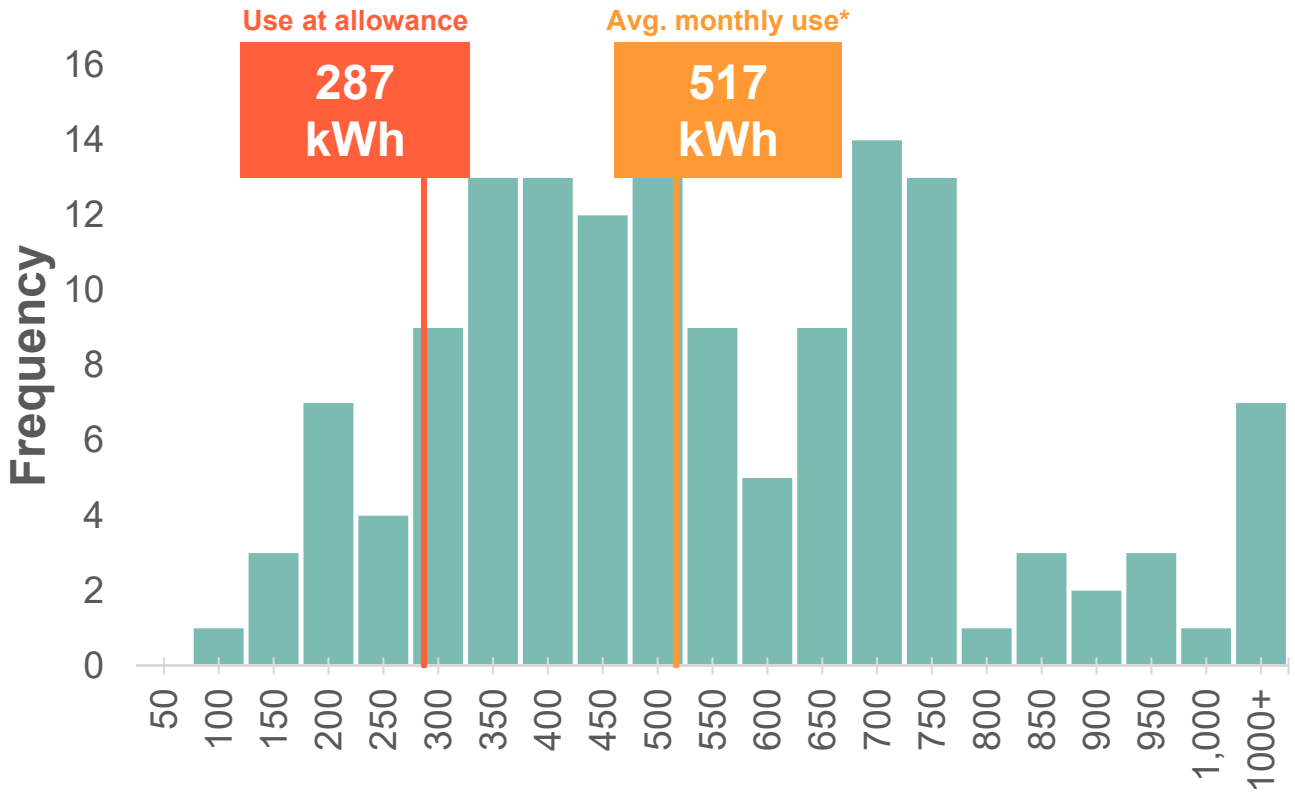
Monthly Use for Two-Bedroom Apartments



* Average of 148 apartments

Findings

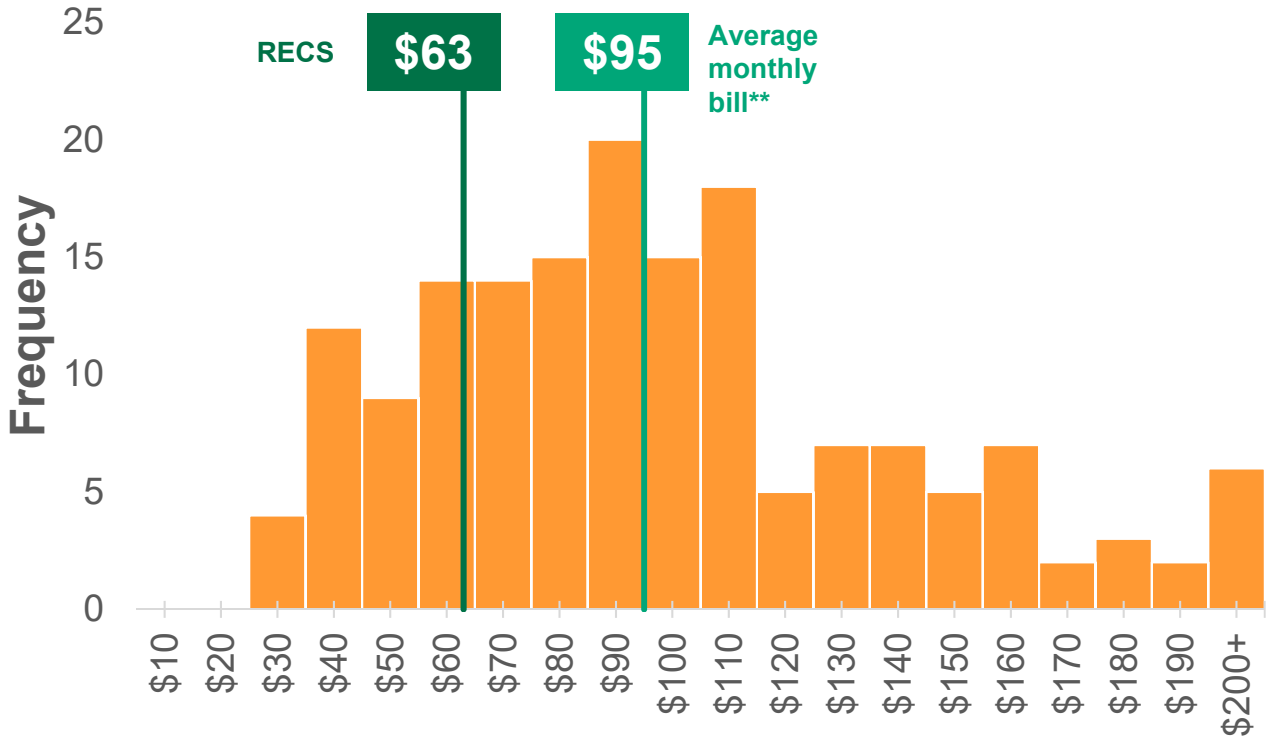
Monthly Use for Three-Bedroom Apartments



* Average of 142 apartments

Findings

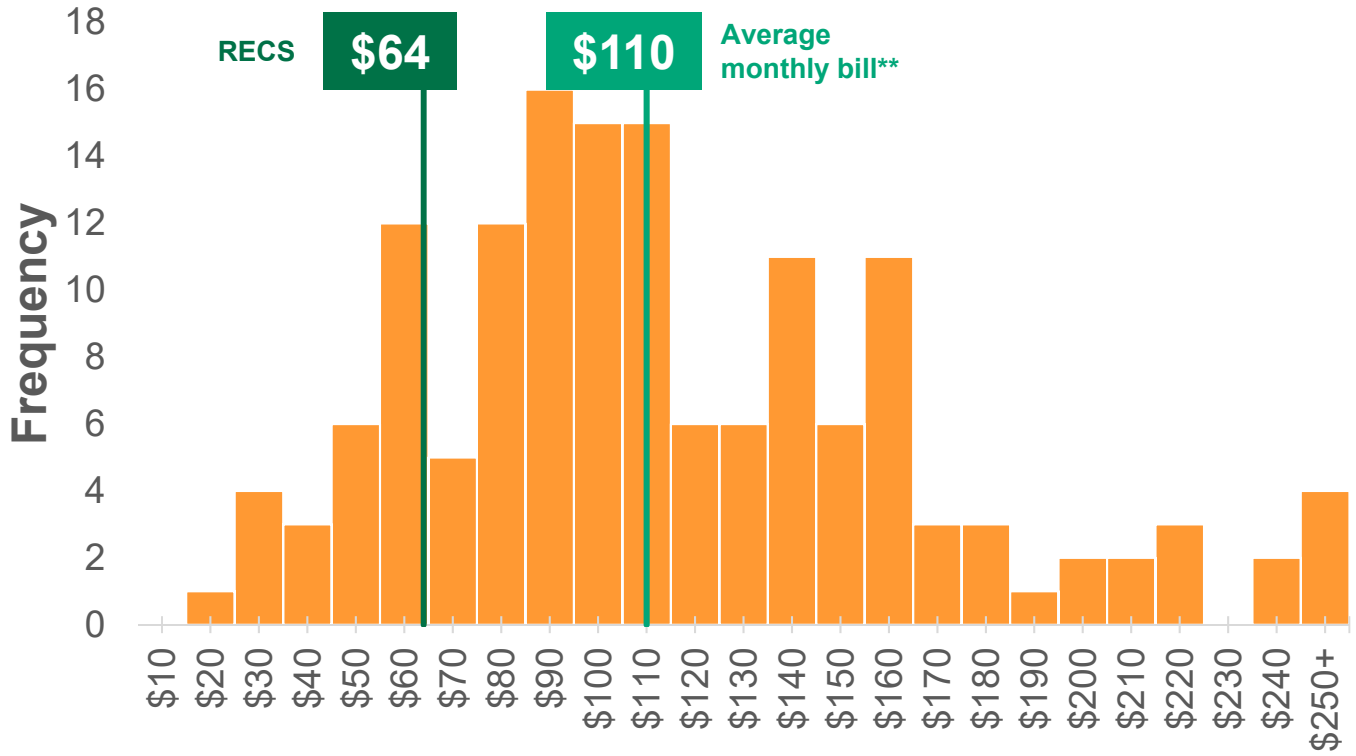
Projected Monthly Bills for One-Bedroom Apartments*



*Under direct-metering at current usage levels
**Average of 164 apartments

Findings

Projected Monthly Bills for Two-Bedroom Apartments*



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Findings

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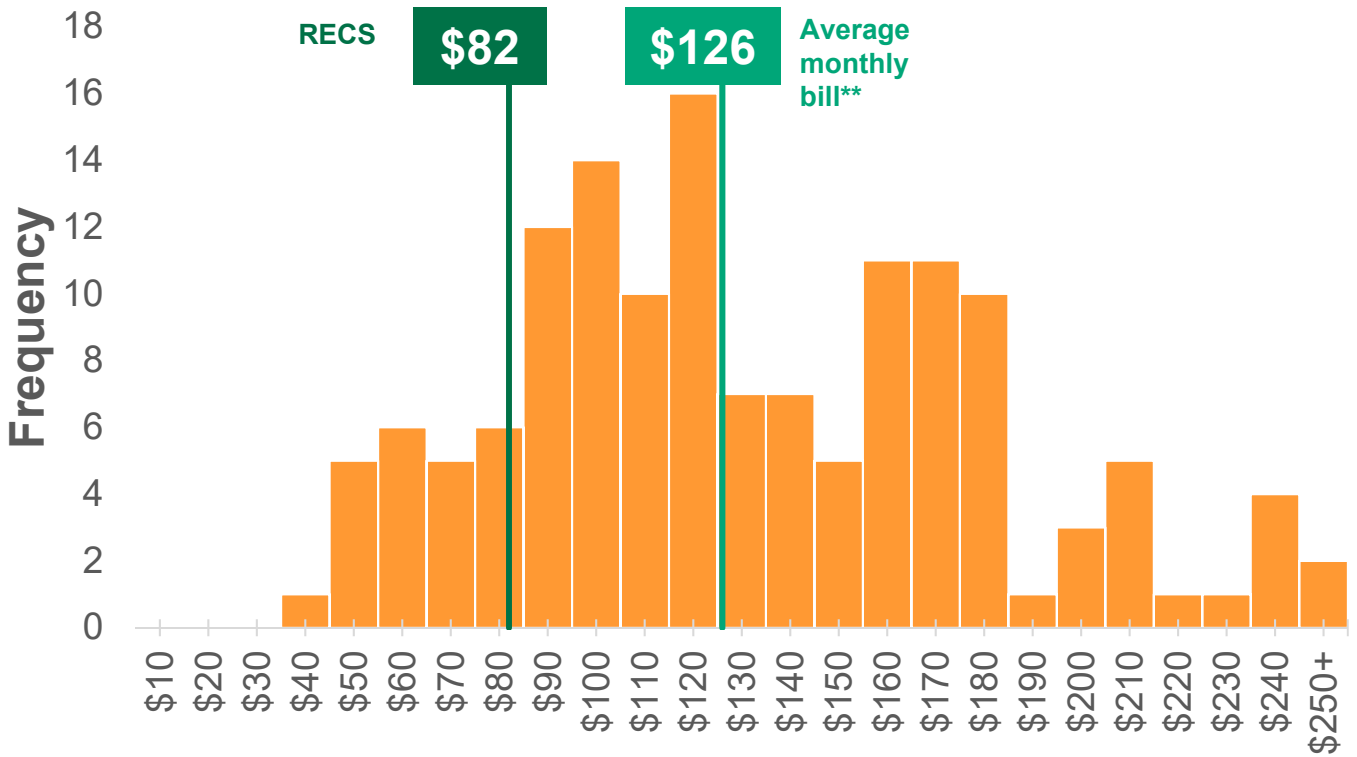

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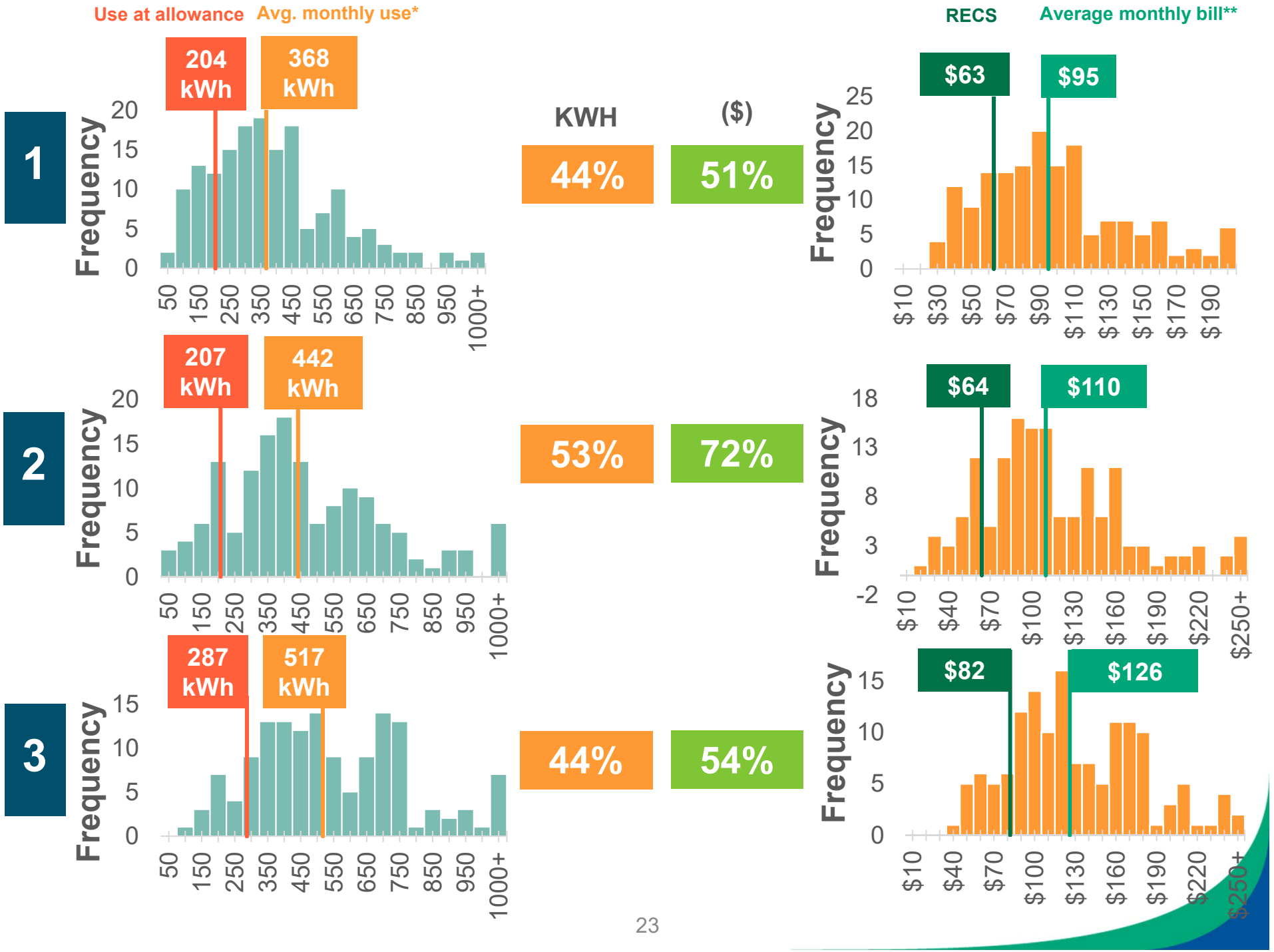
Use at allowance
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RECS
Average monthly bill**
KWH
($)
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368 kWh
44%
51%
$63
$95
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207 kWh
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$126
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