Best Practices and Lessons Learned as NYSERDA's CHP Inspector

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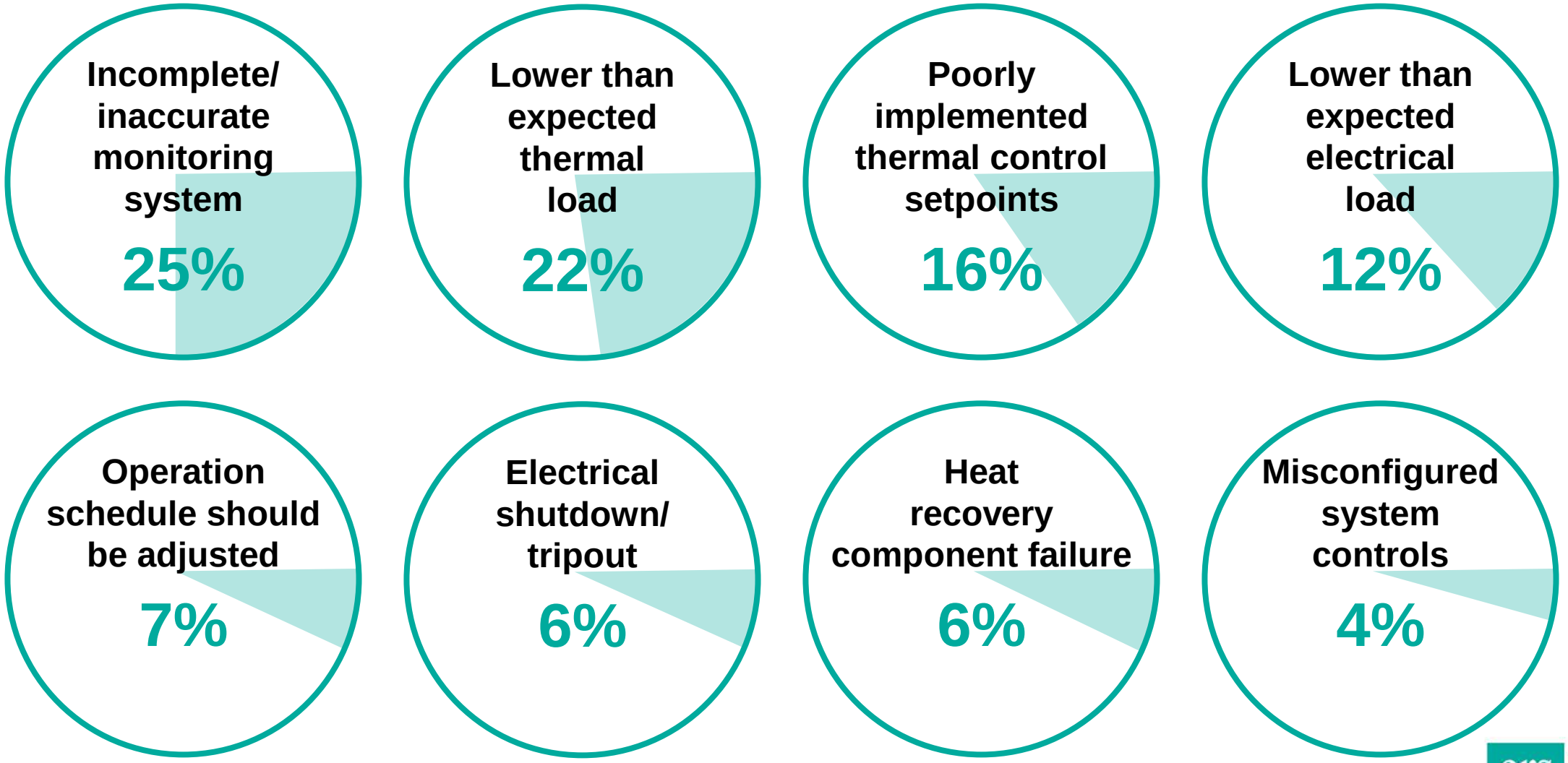
NYSERDA PON 2568 CHP Program

	Program Total (n = 268)	Inspected (21% of Program Total)
Catalog	95%	100%
RICE	84%	100%
Downstate	91%	96%
Multifamily	74%	81%
Small (<200 kW)	69%	83%

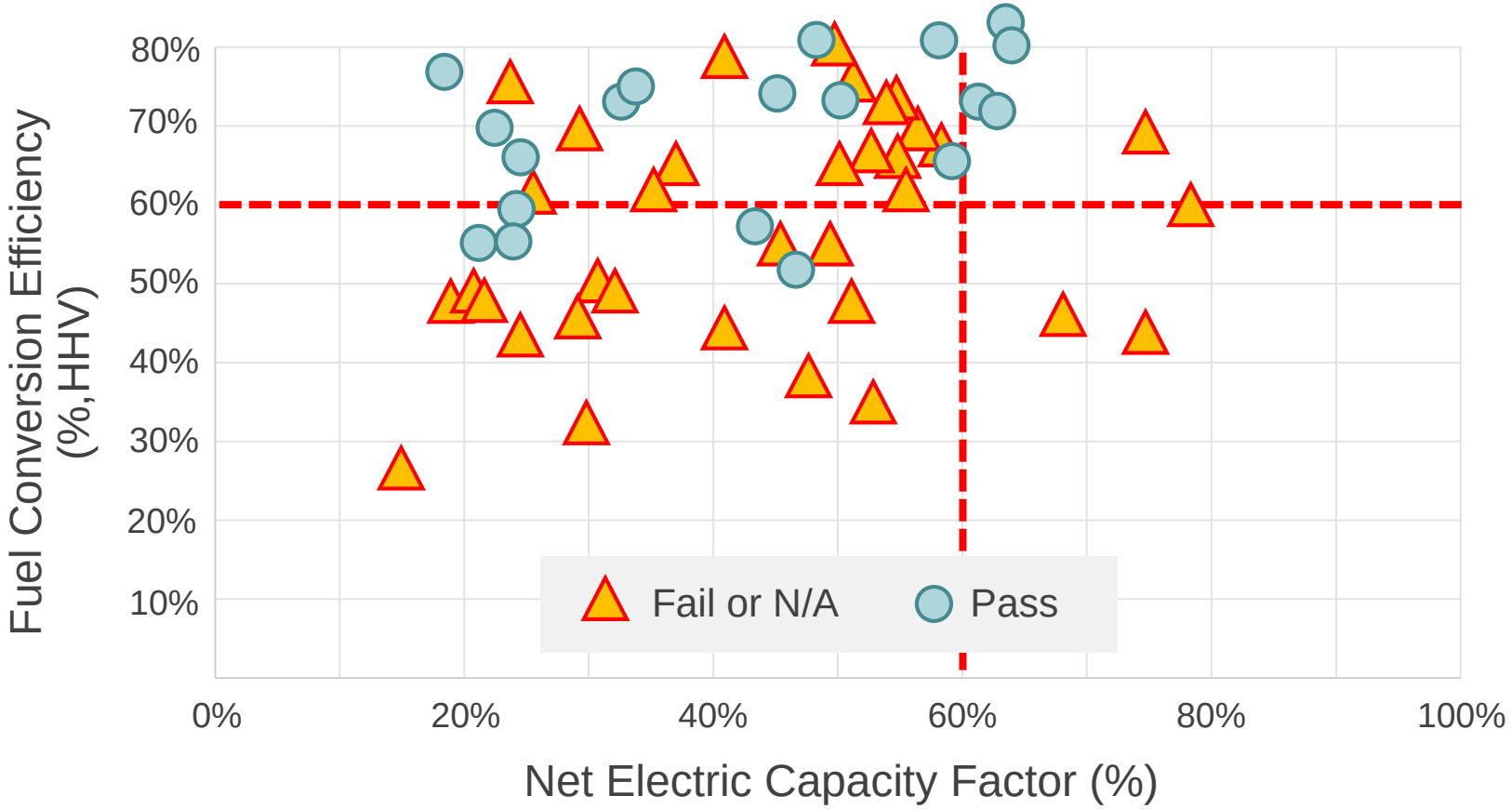
Prototypical ERS CHP inspection to date is a **~100 kW RICE**-based CHP system installed in an **NYC multifamily** residence

$100M project incentives 2012–2019, 268 total installations

Inspection Findings



NYSERDA Safe Harbor Sizing



Next Program:
70% FCE
70% CF

Facility Type	MT Sizing	RICE Sizing
Master-metered multifamily residence	0.25 kW / Apt	0.35 kW / Apt
Nursing Home / LTC	0.15 kW / Bed	0.25 kW / Bed
Hospital	1.4 kW / Bed	2.0 kW / Bed
Hotel	0.14 kW / Room	0.20 kW / Room

	60% FCE	+ 60% CF
Within safe harbor	79%	21%
Outside safe harbor	51%	6%

Spark Spread Leads to Poor FCE

Carbon pricing (i.e., NYC LL97)

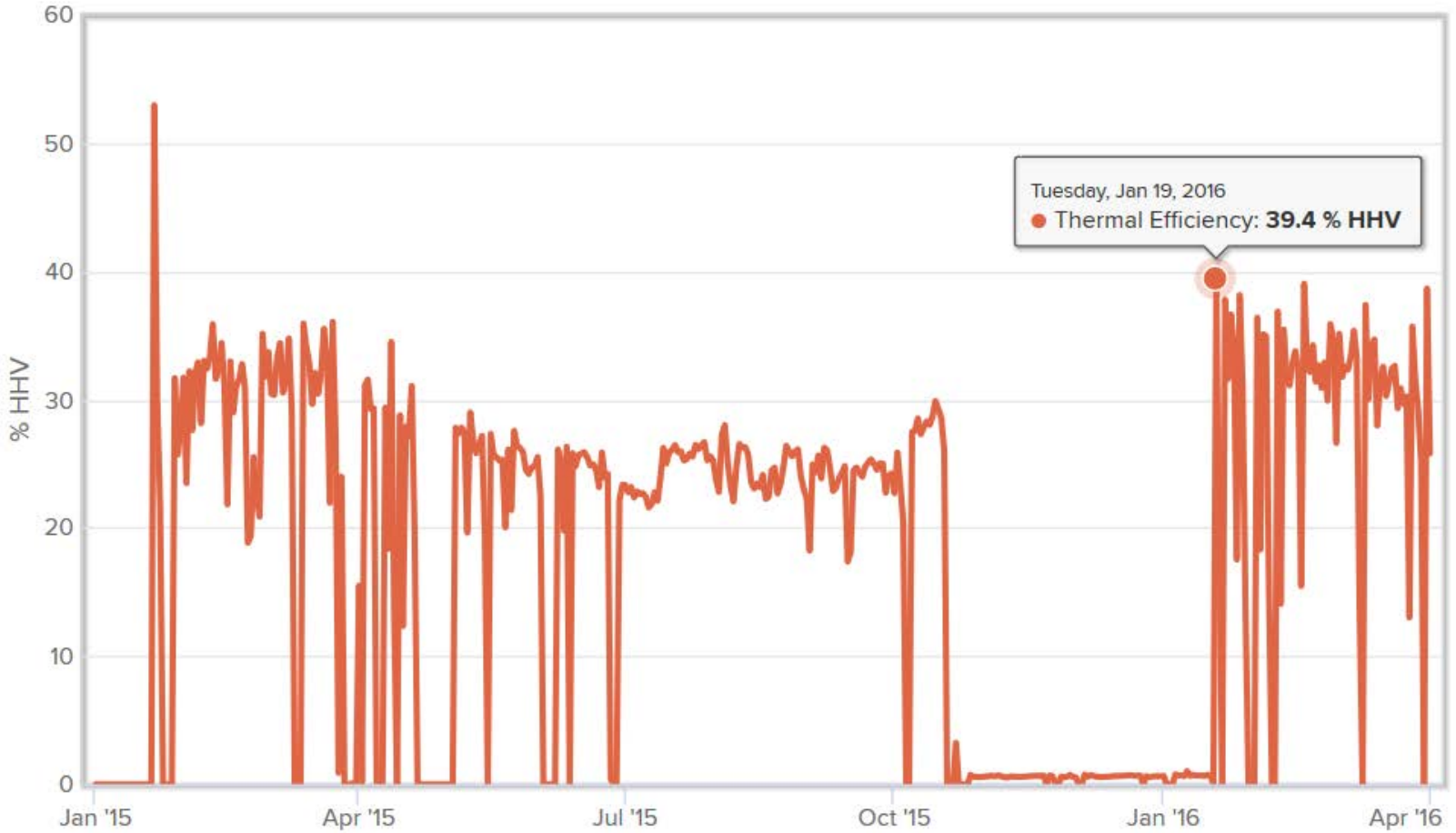
	Building A	Building B
Utility Rates		
Electricity ($/kWh)	$0.110	$0.138
Gas ($/MMBtu)	$8.622	$9.976
CHP gas ($/MMBtu)	$8.683	$7.851
CHP O&M ($/kWh)	$0.025	$0.025
Hourly CHP Operation		
Value of electricity	$10.15	$12.70
Cost of O&M	-$2.50	-$2.50
Cost of CHP gas	-$10.81	-$9.77
Potential value of heat recovery	$10.78	$12.47
Net revenue without heat recovery	**-$3.16**	**$0.43**
Minimum heat utilization to break even	**29.3%**	**0%**

Typical 100 kW RICE		
Net kW output	**Heat recovery**	**Fuel consumption**
92 kW	643.2 MBtu/h	1,244.4 M**b**tu/h
25.2% EE	51.7% TE	76.9% FCE

Ongoing Ops M&V

Performance reports, active monitoring

Daily Average Thermal Efficiency



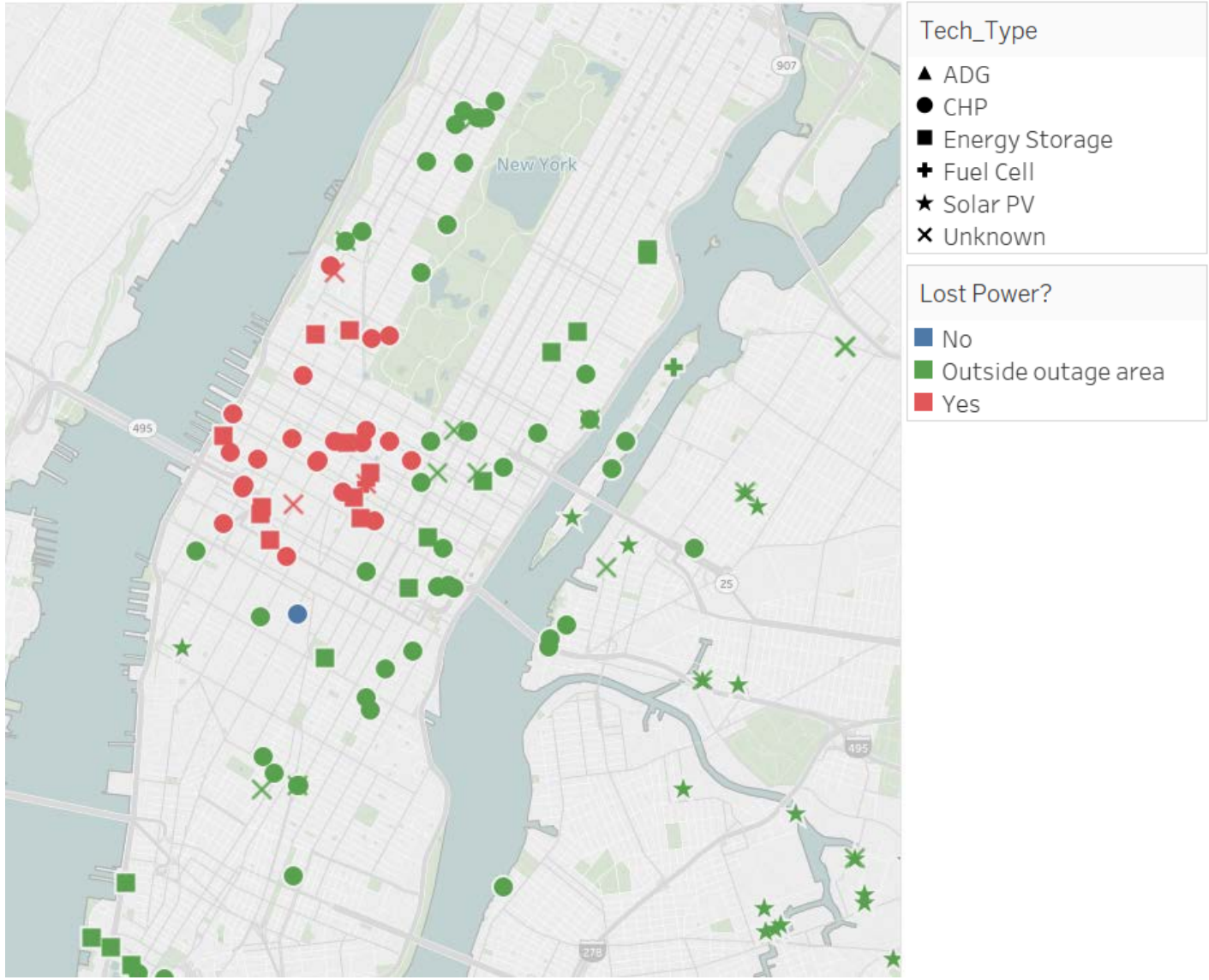
NYSERDA's DER Integrated Data Website: der.nyserda.ny.gov

7/13 Power Outage & Resilient DER

Training, required ATS?

15 sites with performance data

- 1 performed as expected
- 2 exhibited limited performance



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