Jan 25 meeting prepare

Yujie Xu

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# Tasks

* Check the regions of the sparks building, see if all regions are present in the study set
* Think about what data regions could provide
* Summary of the composition of e, m, s cost for each building

## regions of the study set

Starting from a total of 68 buildings with both energy and estimated energy cost

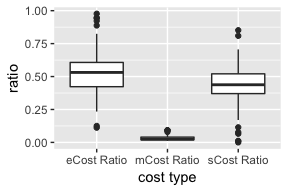
|  |  |
| --- | --- |
| region | n() |
| 1 | 2 |
| 2 | 4 |
| 4 | 7 |
| 5 | 16 |
| 6 | 8 |
| 7 | 10 |
| 8 | 8 |
| 9 | 5 |
| 10 | 5 |
| 11 | 3 |

# Cost composition

The following table displays the building level total estimated cost impact and duration of sparks in 2018. “Sensor Out Of Range”, “Sensor Failure”, “Missing Data”, and “Bad Energy Data” have no cost breakdowns (NA in eCost, sCost, and mCost), so they are left out of the analysis.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| building | Cost | eCost | mCost | sCost | duration\_hour | GSF |
| CA0167ZZ | 2,267,836 | 1,746,884 | 26,394 | 494,559 | 144,559 | 895,248 |
| NV0304ZZ | 1,838,084 | 1,631,434 | 63,922 | 142,728 | 1,027,414 | 454,895 |
| NC0002AE | 1,357,853 | 806,102 | 31,370 | 520,381 | 277,260 | 271,793 |
| IN1703ZZ | 1,203,308 | 698,892 | 26,107 | 478,309 | 85,173 | 1,660,239 |
| OH0192ZZ | 969,971 | 644,654 | 25,114 | 300,202 | 174,918 | 1,471,286 |
| AZ0303ZZ | 743,466 | 92,996 | 17,350 | 633,119 | 36,644 | 579,922 |
| TN0088ZZ | 597,791 | 400,103 | 13,238 | 184,449 | 27,457 | 442,195 |
| IL0236FC | 596,577 | 329,983 | 27,127 | 239,468 | 78,947 | 1,428,620 |
| IN0048ZZ | 543,022 | 397,594 | 9,415 | 136,013 | 58,466 | 527,335 |
| IN0133ZZ | 542,686 | 317,131 | 14,223 | 211,332 | 15,928 | 631,983 |
| NY0128ZZ | 533,094 | 247,414 | 32,122 | 253,557 | 86,935 | 1,015,202 |
| IL0032ZZ | 531,488 | 313,843 | 8,942 | 208,704 | 85,502 | 278,611 |
| GA0010AE | 511,443 | 380,465 | 26,037 | 104,941 | 67,233 | 417,149 |
| MI0029ZZ | 499,335 | 302,240 | 7,085 | 190,010 | 30,119 | 765,824 |
| LA0085ZZ | 489,512 | 145,417 | 10,574 | 333,521 | 89,873 | 706,400 |
| MA0131ZZ | 450,748 | 178,691 | 12,772 | 259,284 | 49,756 | 1,045,836 |
| IL0205ZZ | 444,316 | 180,880 | 10,066 | 253,370 | 32,129 | 1,465,191 |
| DC0084ZZ | 441,532 | 254,455 | 6,653 | 180,423 | 22,816 | 421,319 |
| TX0302ZZ | 385,601 | 155,997 | 35,318 | 194,286 | 35,505 | 558,200 |
| OH0033ZZ | 355,651 | 293,256 | 21,657 | 40,738 | 16,624 | 227,221 |
| DC0083ZZ | 331,980 | 212,888 | 4,869 | 114,223 | 14,420 | 1,111,139 |
| OH0189CN | 330,731 | 188,459 | 6,961 | 135,310 | 17,189 | 790,947 |
| GA1007ZZ | 321,168 | 165,259 | 9,752 | 146,157 | 31,672 | 2,407,916 |
| CO0009ZZ | 271,655 | 112,151 | 5,297 | 154,207 | 45,571 | 269,946 |
| CA0306ZZ | 256,153 | 124,275 | 7,479 | 124,399 | 24,637 | 773,987 |
| AL0039AB | 215,619 | 198,875 | 2,558 | 14,186 | 37,733 | 115,014 |
| DC0021ZZ | 204,152 | 67,126 | 5,897 | 131,129 | 12,988 | 813,649 |
| CO0054ZZ | 195,602 | 96,550 | 8,157 | 90,895 | 11,617 | 313,265 |
| MO0050ZZ | 188,216 | 91,277 | 3,198 | 93,742 | 25,471 | 674,508 |
| CO0061ZZ | 183,266 | 112,235 | 6,812 | 64,218 | 19,600 | 326,686 |
| CA0154ZZ | 175,265 | 140,981 | 4,524 | 29,761 | 8,523 | 1,427,964 |
| OH0028CN | 174,171 | 70,479 | 2,680 | 101,012 | 47,703 | 1,342,093 |
| NY0300ZZ | 172,471 | 90,927 | 3,985 | 77,560 | 9,972 | 257,015 |
| WY0029ZZ | 171,508 | 89,712 | 2,198 | 79,597 | 49,559 | 207,835 |
| TX0211ZZ | 156,827 | 94,403 | 3,271 | 59,153 | 42,866 | 536,944 |
| TX0057ZZ | 150,553 | 79,177 | 4,042 | 67,335 | 18,882 | 254,768 |
| NY0304ZZ | 149,932 | 57,444 | 3,587 | 88,902 | 55,369 | 250,781 |
| NY0281ZZ | 148,045 | 48,676 | 3,361 | 96,008 | 16,870 | 379,016 |
| MO0095ZZ | 147,228 | 69,269 | 5,863 | 72,096 | 15,744 | 1,310,875 |
| FL0067ZZ | 138,892 | 37,887 | 2,947 | 98,058 | 24,387 | 334,195 |
| TX0224ZZ | 124,936 | 66,881 | 4,575 | 53,480 | 9,480 | 766,954 |
| IA0112ZZ | 123,039 | 66,014 | 2,908 | 54,117 | 5,031 | 405,238 |
| AR0030RK | 104,674 | 45,762 | 5,137 | 53,775 | 16,308 | 283,398 |
| OR0043ZZ | 85,080 | 46,718 | 5,261 | 33,101 | 4,866 | 536,673 |
| UT0017ZZ | 83,979 | 50,287 | 1,330 | 32,362 | 16,155 | 232,589 |
| OH0194ZZ | 80,887 | 18,936 | 7,389 | 54,562 | 5,067 | 422,316 |
| UT0032ZZ | 73,627 | 37,854 | 4,002 | 31,771 | 4,579 | 391,726 |
| NM0050ZZ | 68,132 | 18,512 | 2,979 | 46,640 | 22,242 | 333,271 |
| IA0121ZZ | 58,457 | 30,522 | 1,939 | 25,995 | 5,928 | 306,000 |
| AL0076AB | 53,243 | 30,393 | 1,586 | 21,265 | 6,331 | 212,841 |
| OR0052ZZ | 45,490 | 21,789 | 1,061 | 22,640 | 4,993 | 591,692 |
| OR0033PE | 44,069 | 17,998 | 709 | 25,362 | 3,555 | 312,447 |
| OK0101ZZ | 44,045 | 22,576 | 855 | 20,614 | 6,114 | 180,755 |
| KS0094ZZ | 42,646 | 13,244 | 1,059 | 28,342 | 9,442 | 286,446 |
| NE0531ZZ | 41,845 | 32,463 | 858 | 8,524 | 16,475 | 506,390 |
| ND0046ZZ | 40,201 | 38,069 | 1,671 | 462 | 4,348 | 271,034 |
| MN0087ZZ | 40,139 | 18,990 | 529 | 20,620 | 2,654 | 403,399 |
| OK0046CT | 39,909 | 9,635 | 3,704 | 26,570 | 11,028 | 221,497 |
| WA0961KC | 39,497 | 24,832 | 1,321 | 13,344 | 3,953 | 190,521 |
| OH0046ZZ | 36,270 | 21,413 | 731 | 14,126 | 4,824 | 282,896 |
| ND0006ZZ | 36,174 | 35,336 | 459 | 380 | 8,350 | 228,380 |
| AK0031AA | 32,021 | 3,576 | 2,532 | 25,912 | 833 | 727,343 |
| NM0030ZZ | 24,915 | 15,473 | 1,254 | 8,188 | 2,243 | 365,196 |
| NE0051ZZ | 20,886 | 10,300 | 858 | 9,727 | 4,414 | 428,932 |
| NE0036ZZ | 19,907 | 8,487 | 649 | 10,771 | 10,471 | 364,173 |
| IL0235FC | 16,165 | 9,211 | 305 | 6,649 | 694 | 288,117 |
| MA0153ZZ | 11,046 | 10,413 | 633 | 0 | 5,501 | 853,007 |
| IL0303ZZ | 7,186 | 3,885 | 171 | 3,129 | 110 | 828,102 |

The following plot shows the distribution of the three cost component.



## Plot individual building’s cost over days

