TABLES for cable report

2018-04-16

Table 1 Table 1: Territories having submarine cables within the United States exclusive economic zone (EEZ) of 200 nm. Territory area (km2) and length of submarine cables (km) are reported with horizontal indicator bars proportional to values in rest of column (with italics headers). Remaining columns indicate whether energy resources (tidal, wave or wind) are characterized for the territory. The Pacific Island territories (Guam, Johnston Atoll, N. Mariana Islands, Palmyra Atoll, Wake Island) have submarine cables but no energy resource characterization, whereas the Atlantic Island territories (Puerto Rico, US Virgin Islands) have tidal and wind.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Region | Region (km2) | Cable (km) | Tidal | Wave | Wind |
| Alaska | 3,682,912 | 15,782 | ✓ | ✓ |  |
| Atlantic Islands | 211,232 | 4,241 | ✓ | ✓ |  |
| East | 932,351 | 28,526 | ✓ | ✓ | ✓ |
| Gulf of Mexico | 1,553,288 | 1,909 | ✓ | ✓ | ✓ |
| Hawaii | 2,474,715 | 21,496 |  | ✓ | ✓ |
| Pacific Islands | 2,174,943 | 4,908 |  |  |  |
| West | 824,679 | 20,459 | ✓ | ✓ | ✓ |
| ALL | 11,854,120 | 97,321 | ✓ | ✓ | ✓ |

(#tab:tbl02CableBufferTerritories\_3z)Table 2: Area of territories and cable setback within the EEZ. Width of horizontal gray bars indicate percent area relative to total area of U.S. EEZ, and pink bars indicate percent of given area overlapping with cable setback.

|  |  |  |
| --- | --- | --- |
| Region | Area (km2) | Cable Setback Area (km2) (%) |
| Alaska | 3,682,912 | 237,610 ( 6.5%) |
| Atlantic Islands | 211,232 | 43,043 (20.4%) |
| East | 932,351 | 165,004 (17.7%) |
| Gulf of Mexico | 1,553,288 | 9,211 ( 0.6%) |
| Hawaii | 2,474,715 | 419,341 (16.9%) |
| Pacific Islands | 2,174,943 | 151,849 ( 7.0%) |
| West | 824,679 | 242,031 (29.3%) |
| ALL | 11,854,120 | 1,268,089 (10.7%) |

(#tab:tbl03Energy\_3z)Table 3: Area of energy and depth classes with overlap by cable setback, across all assessed energy resources. Assessed energy resource area is limited to a minimum viable energy class and maximum bottom depth (tidal: ≥ 500 W/m2 & ≤ 100 m; wave: ≥ 10 kW/m & ≤ 200 m; wind ≥ 7 m/s & ≤ 1000 m). Summaries across ALL depth and energy bins are provided for each form of energy. Width of horizontal gray bars indicate percent area relative to maximum value, and pink bars indicate percent of given area overlapping with cable setback.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Form | Energy | Depth (m) | Area (km2) | Cable Setback Area (km2) (%) |
| Tidal (W/m2) | ALL | ALL | 1,671 | 63 ( 3.8%) |
| Wave (kW/m) | ALL | ALL | 378,908 | 3,352 ( 0.9%) |
| Wind (m/s) | ALL | ALL | 462,613 | 18,481 ( 4.0%) |
| Tidal (W/m2) | 500-1,000 | 0-100 | 1,160 | 54 ( 4.7%) |
|  | 1,000-1,500 | 0-100 | 306 | 7 ( 2.3%) |
|  | >1,500 | 0-100 | 205 | 2 ( 0.9%) |
| Wave (kW/m) | 10-20 | 0-100 | 121,861 | 831 ( 0.7%) |
|  |  | 100-200 | 47,416 | 925 ( 2.0%) |
|  | 20-30 | 0-100 | 62,767 | 170 ( 0.3%) |
|  |  | 100-200 | 77,833 | 327 ( 0.4%) |
|  | >30 | 0-100 | 21,213 | 332 ( 1.6%) |
|  |  | 100-200 | 47,818 | 767 ( 1.6%) |
| Wind (m/s) | 7-8 | 0-100 | 134,633 | 1,756 ( 1.3%) |
|  |  | 100-200 | 7,376 | 272 ( 3.7%) |
|  |  | 200-1,000 | 25,133 | 1,953 ( 7.8%) |
|  | 8-9 | 0-100 | 145,957 | 4,479 ( 3.1%) |
|  |  | 100-200 | 19,616 | 531 ( 2.7%) |
|  |  | 200-1,000 | 36,388 | 3,805 (10.5%) |
|  | 9-10 | 0-100 | 45,165 | 4,351 ( 9.6%) |
|  |  | 100-200 | 24,752 | 241 ( 1.0%) |
|  |  | 200-1,000 | 18,430 | 745 ( 4.0%) |
|  | 10-11 | 0-100 | 551 | 20 ( 3.6%) |
|  |  | 100-200 | 786 | 12 ( 1.5%) |
|  |  | 200-1,000 | 3,619 | 237 ( 6.6%) |
|  | 11-12 | 0-100 | 42 | 10 (22.6%) |
|  |  | 100-200 | 45 | 18 (41.1%) |
|  |  | 200-1,000 | 120 | 51 (42.1%) |

(#tab:tbl04Tide\_3z)Table 4: Area of tidal power classes (W/m2) per region and overlap with cable setback. Assessed area, including ALL for region, is limited to a maximum depth (≤ 100 m) and minimum energy (≥ 500 W/m2) for viable tidal energy development. The Atlantic Islands (Puerto Rico, US Virgin Islands) only contained the lowest tidal energy class (< 500 W/m2) within the prescribed area so do not show up in this table despite having tidal energy resource characterized. Width of horizontal gray bars indicate percent area relative to maximum value, and pink bars indicate percent of given area overlapping with cable setback.

|  |  |  |  |
| --- | --- | --- | --- |
| Region | Tidal power (W/m2) | Area (km2) | Cable Setback Area (km2) (%) |
| Alaska | ALL | 955 | 41 ( 4.3%) |
|  | 500-1,000 | 691 | 33 ( 4.8%) |
|  | 1,000-1,500 | 162 | 5 ( 3.3%) |
|  | >1,500 | 101 | 2 ( 1.8%) |
| East | ALL | 604 | 8 ( 1.3%) |
|  | 500-1,000 | 390 | 6 ( 1.7%) |
|  | 1,000-1,500 | 127 | 2 ( 1.3%) |
|  | >1,500 | 87 | 0 ( 0.0%) |
| Gulf of Mexico | ALL | 43 | 0 ( 0.0%) |
|  | 500-1,000 | 32 | 0 ( 0.0%) |
|  | 1,000-1,500 | 8 | 0 ( 0.0%) |
|  | >1,500 | 3 | 0 ( 0.0%) |
| West | ALL | 69 | 14 (20.8%) |
|  | 500-1,000 | 46 | 14 (31.5%) |
|  | 1,000-1,500 | 9 | 0 ( 0.0%) |
|  | >1,500 | 14 | 0 ( 0.0%) |

(#tab:tbl05Wave\_3z)Table 5: Area of wave energy classes (kW/m) per region and overlap with cable setback. Assessed area, including ALL for region, is limited to a maximum depth (≤ 200 m) and minimum energy (≥ 10 kW/m) for viable wave energy development. The Atlantic Islands (Puerto Rico, US Virgin Islands) only contained the lowest wave energy class (< 10 kW/m) within the prescribed area so do not show up in this table despite having wave energy resource characterized. Width of horizontal gray bars indicate percent area relative to maximum value, and pink bars indicate percent of given area overlapping with cable setback.

|  |  |  |  |
| --- | --- | --- | --- |
| Region | Wave Energy (kW/m) | Area (km2) | Cable Setback Area (km2) (%) |
| Alaska | ALL | 312,374 | 1,298 (0.4%) |
|  | 10-20 | 146,572 | 1,032 (0.7%) |
|  | 20-30 | 129,680 | 246 (0.2%) |
|  | >30 | 36,122 | 20 (0.1%) |
| East | ALL | 16,463 | 536 (3.3%) |
|  | 10-20 | 16,463 | 536 (3.3%) |
| Hawaii | ALL | 1,915 | 21 (1.1%) |
|  | 10-20 | 1,604 | 21 (1.3%) |
|  | 20-30 | 311 | 0 (0.0%) |
| West | ALL | 48,155 | 1,498 (3.1%) |
|  | 10-20 | 4,637 | 168 (3.6%) |
|  | 20-30 | 10,608 | 251 (2.4%) |
|  | >30 | 32,910 | 1,079 (3.3%) |

(#tab:tbl06Wind\_3z)Table 6: Area of wind speed classes (m/s) per region and overlap with cable setback. Assessed area, including ALL for region, is limited to a maximum depth (≤ 1,000 m) and minimum energy classes (≥ 7 m/s) for viable wind energy development. Width of horizontal gray bars indicate percent area relative to maximum value, and pink bars indicate percent of given area overlapping with cable setback.

|  |  |  |  |
| --- | --- | --- | --- |
| Region | Wind Speed (m/s) | Area (km2) | Cable Setback Area (km2) (%) |
| East | ALL | 237,909 | 9,290 ( 3.9%) |
|  | 7-8 | 47,001 | 343 ( 0.7%) |
|  | 8-9 | 116,082 | 4,198 ( 3.6%) |
|  | 9-10 | 74,826 | 4,749 ( 6.3%) |
|  | 10-11 | 1 | 0 ( 0.0%) |
| Gulf of Mexico | ALL | 113,562 | 1,102 ( 1.0%) |
|  | 7-8 | 85,032 | 1,102 ( 1.3%) |
|  | 8-9 | 28,530 | 0 ( 0.0%) |
| Hawaii | ALL | 16,654 | 2,337 (14.0%) |
|  | 7-8 | 6,931 | 362 ( 5.2%) |
|  | 8-9 | 7,178 | 1,421 (19.8%) |
|  | 9-10 | 1,329 | 206 (15.5%) |
|  | 10-11 | 1,009 | 269 (26.7%) |
|  | 11-12 | 207 | 78 (37.9%) |
| West | ALL | 94,488 | 5,752 ( 6.1%) |
|  | 7-8 | 28,178 | 2,175 ( 7.7%) |
|  | 8-9 | 50,171 | 3,197 ( 6.4%) |
|  | 9-10 | 12,192 | 380 ( 3.1%) |
|  | 10-11 | 3,946 | 0 ( 0.0%) |