**Bayfield County Energy Accomplishments**

**Renewable Energy Terms:**

* 100% renewable energy
* 100% carbon-free energy
	+ 100% renewable electricity
	+ 100% carbon-free electricity
* 100% renewable energy locally generated
* 100% *equivalent* renewable (or carbon-free) energy (or electricity)

**Governor Evers Executive Order #38, August 16th, 2019:**

“In partnership with other state agencies and state utilities, achieve a goal of ensuring all electricity consumed within the State of Wisconsin is 100 percent carbon-free by 2050.”

**Energy Independent Communities Resolutions (2009):**

“The resolution committed your community to generate at least 25% of energy used for local government operations from renewable energy locally by 2025.”

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| **Summary - Bayfield County Energy Usage in County Owned Infrastructure** |
|  | **2017 Usage** | **2018 Usage** | **2019 Usage** | **2017 Million BTUs** | **2018 Million BTUs** | **2019 Million BTUs** | **2019 % of Total Energy Used** | **2017 Cost** | **2018 Cost** | **2019 Cost** | **2019 % of Dollars Spent** |
| **Electricity (kWh)** | 973,802 | 989,434 | 986,938  | 3,310 | 3,358 | 3,366 | 12% | $97,368  | $85,774  | $74,042  | 19% |
| **Transportation** |  |
|  gasoline (gal) | 39,344 | 35,811 | 38,290 |  4,485  |  4,082  | 4,365 | 16% | $81,330  | $82,589  | $72,386  | 19% |
|  diesel (gal) | 77,534 | 65,287 | 69,218 | 10,767  | 9,067 |  9,613 | 35% | $167,411  | $166,321  | $172,275  | 44% |
|  CNG (therms) | 3,750 | 3,596 | 4,760 |  375  |  360 | 476  | 2% | $2,355  | $2,395  | $2,833  | 1% |
| **Heating** |  |
|  natural gas (therms) | 67,715 | 74,916 | 80,491 | 6,772 | 7,492 | 8,049 | 29% | $44,290  | $50,918  | $50,567  | 13% |
|  propane (gal) | 15,220 | 17,678 | 16,668 | 1,393 | 1,618 | 1,525 | 6% | $11,948  | $16,264  | $19,151  | 5% |
|  |  |
| Total |  |  |  | 27,102 | 25,976 | 27,358 | 100% | $404,702  | $404,261  | $391,254  | 100% |

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| **Electric Usage Summary 2017-2020** |
|  | 2017 Baseline | 2018 | 2019 | 2020 Estimated |
| Total All Electric Bills  | $97,368 | $85,774 | $74,042 | $59,590 |
| Increased usage from2017 baseline |  | +$1200 | +$975 | 0? |
| Reduction from 2017 baseline |  | -$11,594 | -$23,326 | -$37,660 |
| Community Solar |  | -$8000 | -$16,310 | $-16,310 |
| On-site Solar |  | -$410 | -$2,300 | -$17,340 |
| 2017 Tax Cut Credit |  | -$4300 | -$4,420 | $-4000? |

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| **Summary of Solar Generation** |
| **Type/Site** | **kW dc** | **Annual Generation (kWh)** | **Estimated Savings in 2020** | **2020 – Estimated Electricity from Solar** | **2020 Electric Bill Reduction from 2017** | **2020 % Solar to Total Energy** |
| Onsite solar PV (kW dc) | 174 | 208,800 | $17,340 |  |
| Bayfield Electric comm solar (kW dc) | 5.1 | 4,718 | $590 |
| Xcel community solar (kW dc) | 190 | 209,570 | $15,720 |
|  |
| Total | 369 |  414,388  | $33,660 | 43% | 39% | 5.3% |

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| **Pathway for Bayfield County to achieve 100% Carbon-free Electricity** |
| Total kWh used (2019) |  986,900  |
| Estimated 2020 Total Solar Generation (kWh) | (421,000) |
| Carbon-free Grid Electricity (56%) | (309,700) |
| Electricity from Grid Creating Carbon Emissions |  256,200  |
|  |  |
| Amount to Offset to Achieve 100% Carbon-free Electricity |  256,200  |
| Xcel Renewable\*Connect (239,200 kWh) | $1411 |
| BEC Evergreen (6,700 kWh) | $67 |
| Dahlberg Light & Power/Arcadia Power (9,900 kWh) | $149 |
| Cost to Offset/yr | $1,627 |