

# Different sources of electricity have tradeoffs

This document compares different resource types across eight factors (four front, four back) that may be important to consider when deciding where our electricity comes from.

| RESOURCE TYPE   | LOCATION                           | RENEWABLE<br>BASED ON VT POLICY | AIR EMISSIONS<br>DURING<br>GENERATION | AVAILABILITY**<br>(PERCENTAGE OF THE YEAR) |
|-----------------|------------------------------------|---------------------------------|---------------------------------------|--|
| BIOMASS         | IN VT & CAN BE<br>DELIVERED TO VT  | YES                             | YES                                   | 55 - 97%                                   |
| HYDRO           | IN VT & CAN BE<br>DELIVERED TO VT  | YES                             | NO                                    | 36 - 66%                                   |
| FOSSIL FUELS    | IN VT* & CAN BE<br>DELIVERED TO VT | NO                              | YES                                   | 49 - 57%*                                  |
| NUCLEAR         | CAN BE DELIVERED<br>TO VERMONT     | NO                              | NO                                    | 91 - 93%                                   |
| SOLAR           | IN VT & CAN BE<br>DELIVERED TO VT  | YES                             | NO                                    | 14 - 25%                                   |
| WIND - ONSHORE  | IN VT & CAN BE<br>DELIVERED TO VT  | YES                             | NO                                    | 23 - 35%                                   |
| WIND - OFFSHORE | CAN BE DELIVERED<br>TO VERMONT     | YES                             | NO                                    | 45%  |

\*There are a small number of fossil fuel peaking plants located in Vermont. These plants run less than 1% of the year

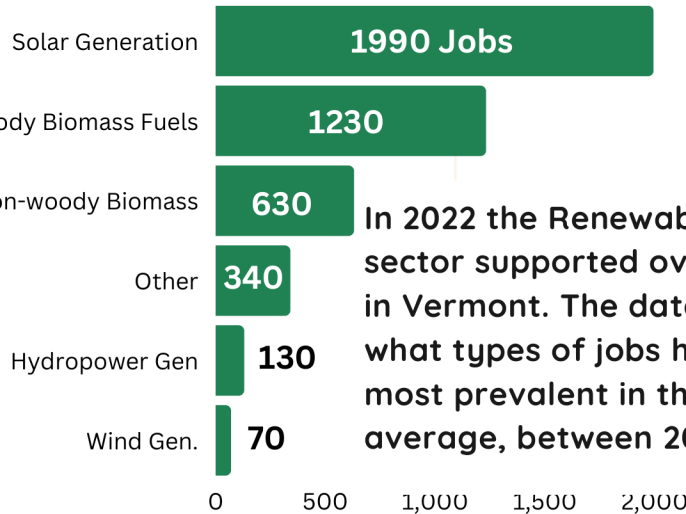
\*\* Data from the Energy Information Administration and Vermont distribution utility Integrated Resource Plans

Note: Load flexibility including storage is an important aspect of integrating variable resources including several of the above.

# TRADEOFFS

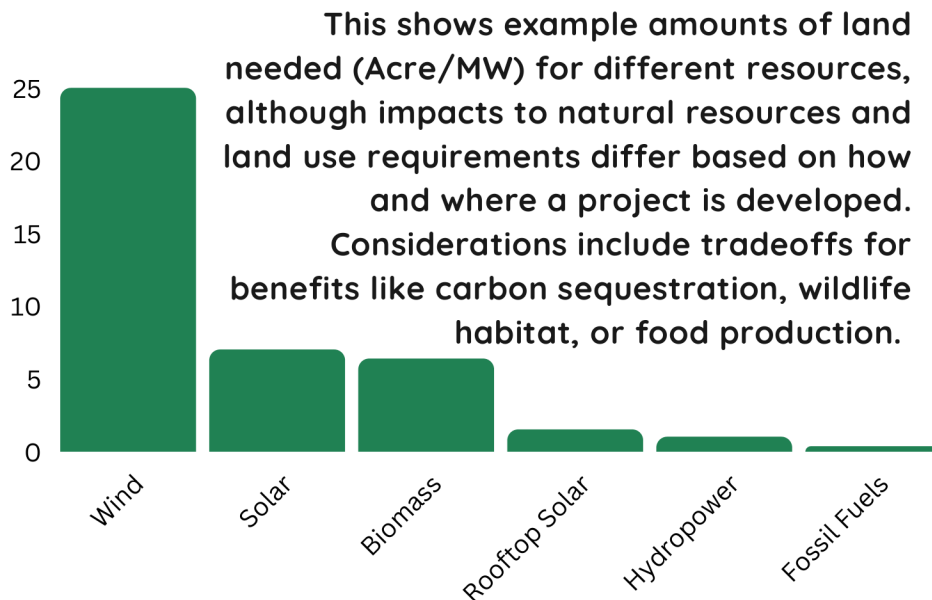
Data from: 2022 Vermont Clean Energy Industry Report, 2023 EVT Energy Burden Report, & Public Service Dept.

## VT JOBS & ECONOMIC DEVELOPMENT



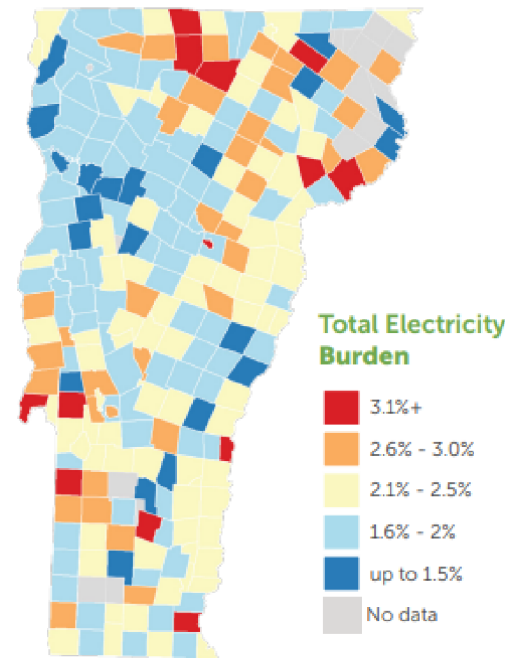
In 2022 the Renewable Energy sector supported over 5600 jobs in Vermont. The data here show what types of jobs have been most prevalent in the industry, on average, between 2017-2022.

## NATURAL RESOURCE IMPACTS



This shows example amounts of land needed (Acre/MW) for different resources, although impacts to natural resources and land use requirements differ based on how and where a project is developed.

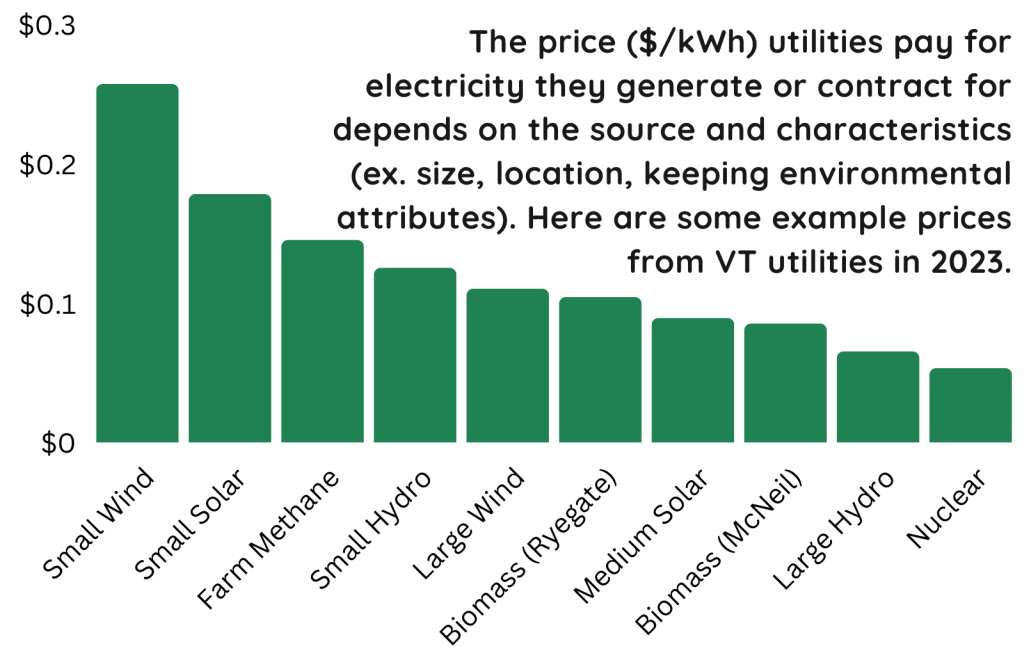
Considerations include tradeoffs for benefits like carbon sequestration, wildlife habitat, or food production.



## EQUITY CONSIDERATIONS

- How affordable is electricity? (what % of income do people spend on electricity bills i.e. electricity burden)
- Pollution (air, water, land)
- Who decides where electricity sources are located?
- Does everyone have access to the benefits of renewable electricity?
- Are costs and benefits of programs shared equitably?

## COST OF POWER



The price (\$/kWh) utilities pay for electricity they generate or contract for depends on the source and characteristics (ex. size, location, keeping environmental attributes). Here are some example prices from VT utilities in 2023.