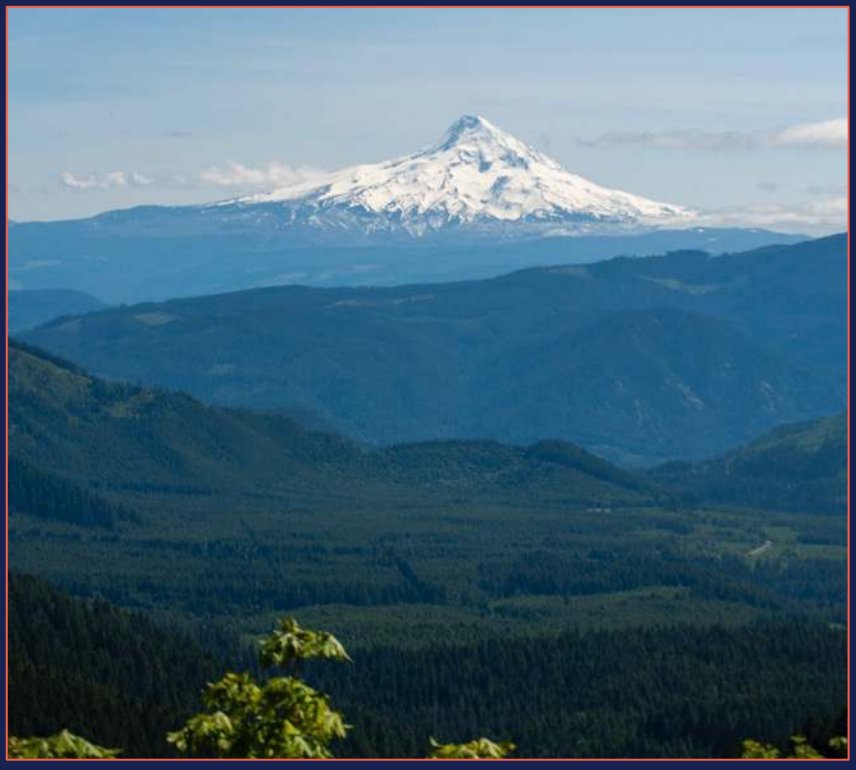
CARRYING CAPACITY OF RENEWABLE ENERGY IN OREGON 2020 - 2045



EDA Economic Democracy Advocates

INTRODUCTION

Many states in the US are hoping to transition from fossil fuels to renewable energy.

EDA conducted this study in 2020 to support Oregon House Bill 4170, which proposed a 25-year plan to achieve 100% renewable energy by 2045.

We analyzed the capacities of different conservation basins in Oregon to achieve this goal.

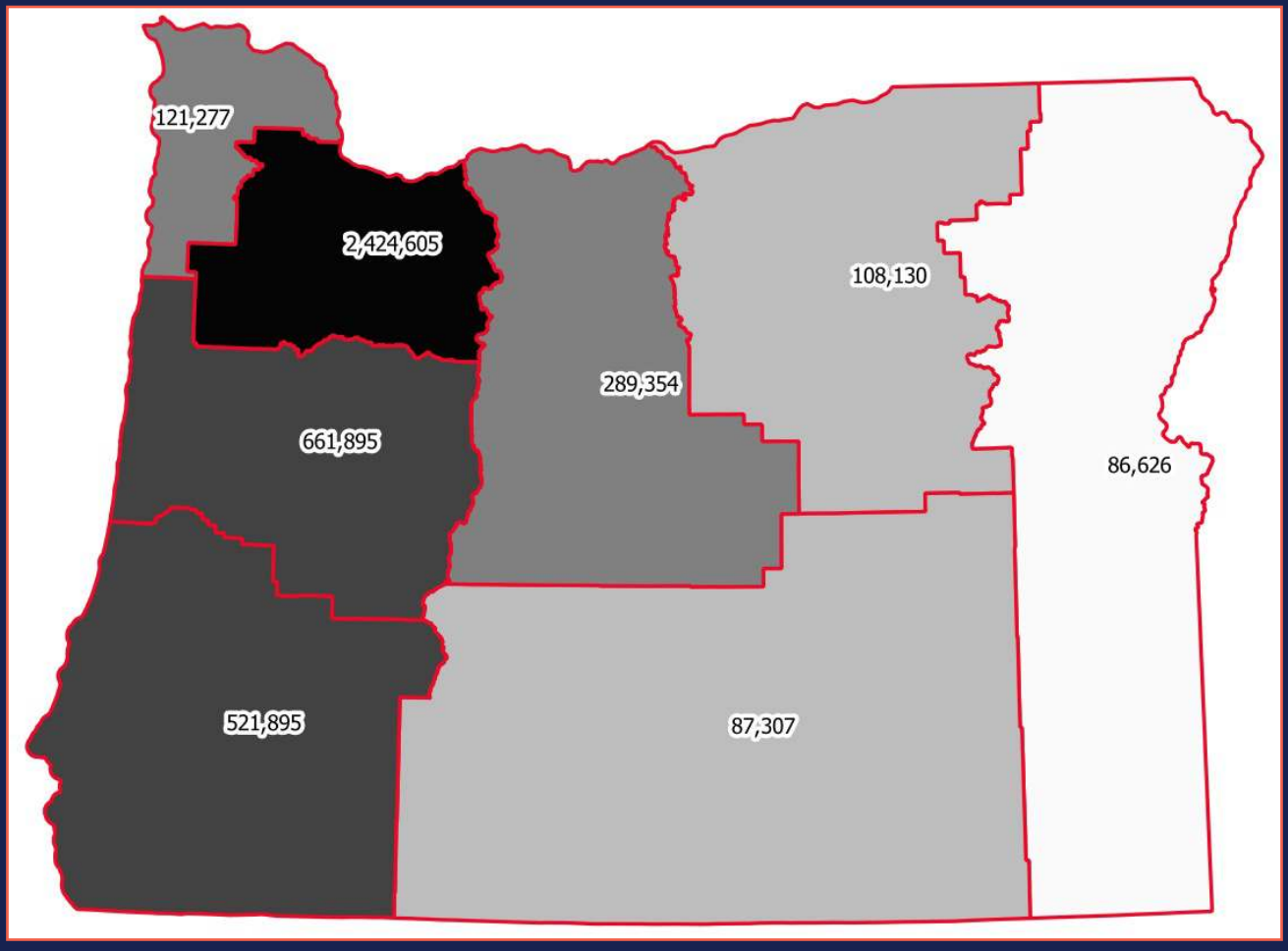
Conservation Basins in Oregon

Conservation Basins were created by the United States Department of Agriculture (USDA), according to the Food Security Act of December 23, 1985.

Agricultural producers are required to comply with provisions based on highly erodible land and wetland conservation to:

- Reduce soil loss due to wind and water erosion
- Protect the Nation's long-term capability to produce food and fiber
- Reduce sedimentation and improve water quality
- Assist in preserving the values, acreage and functions of the Nation's wetlands

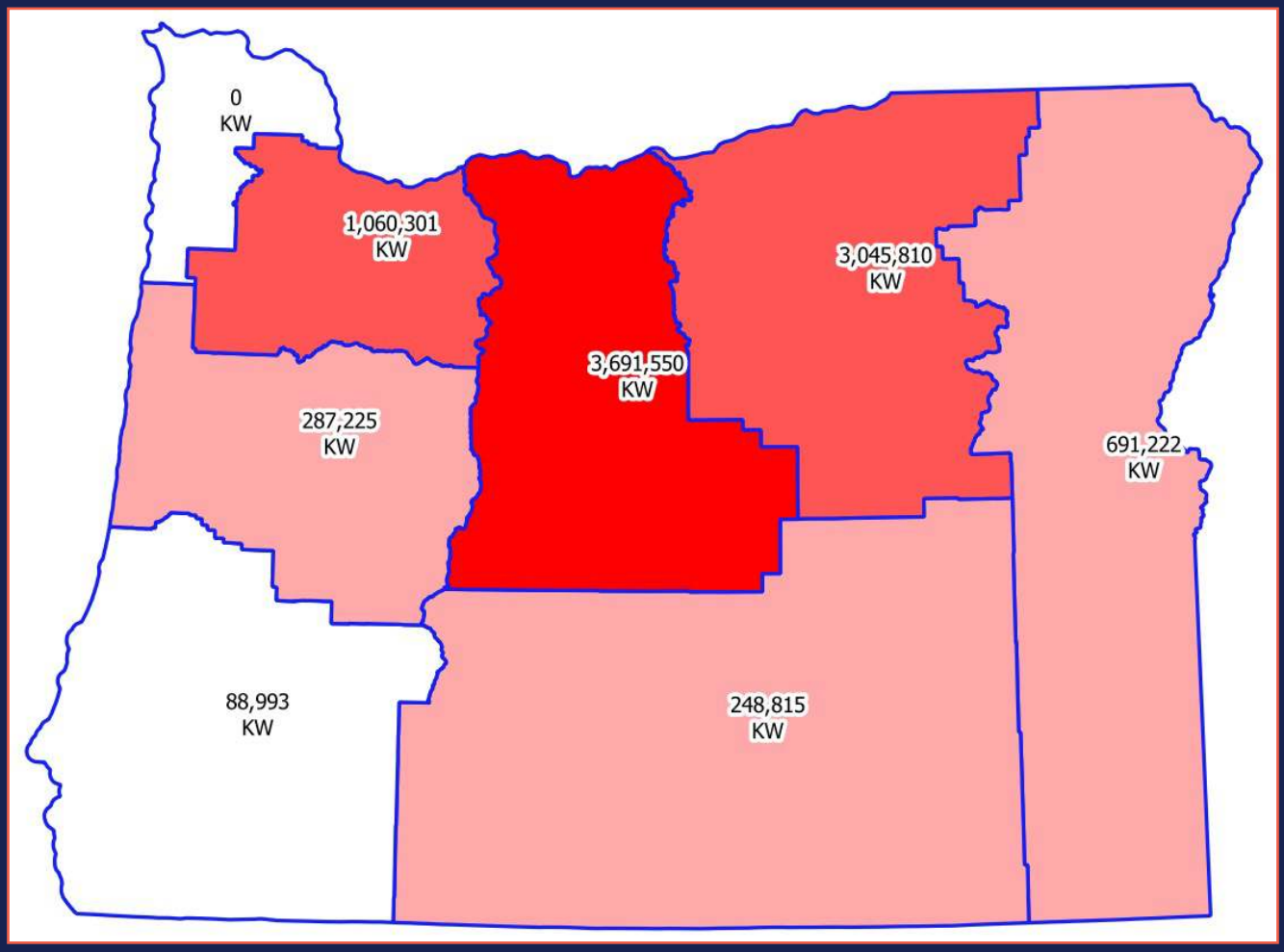
Oregon population in 2020



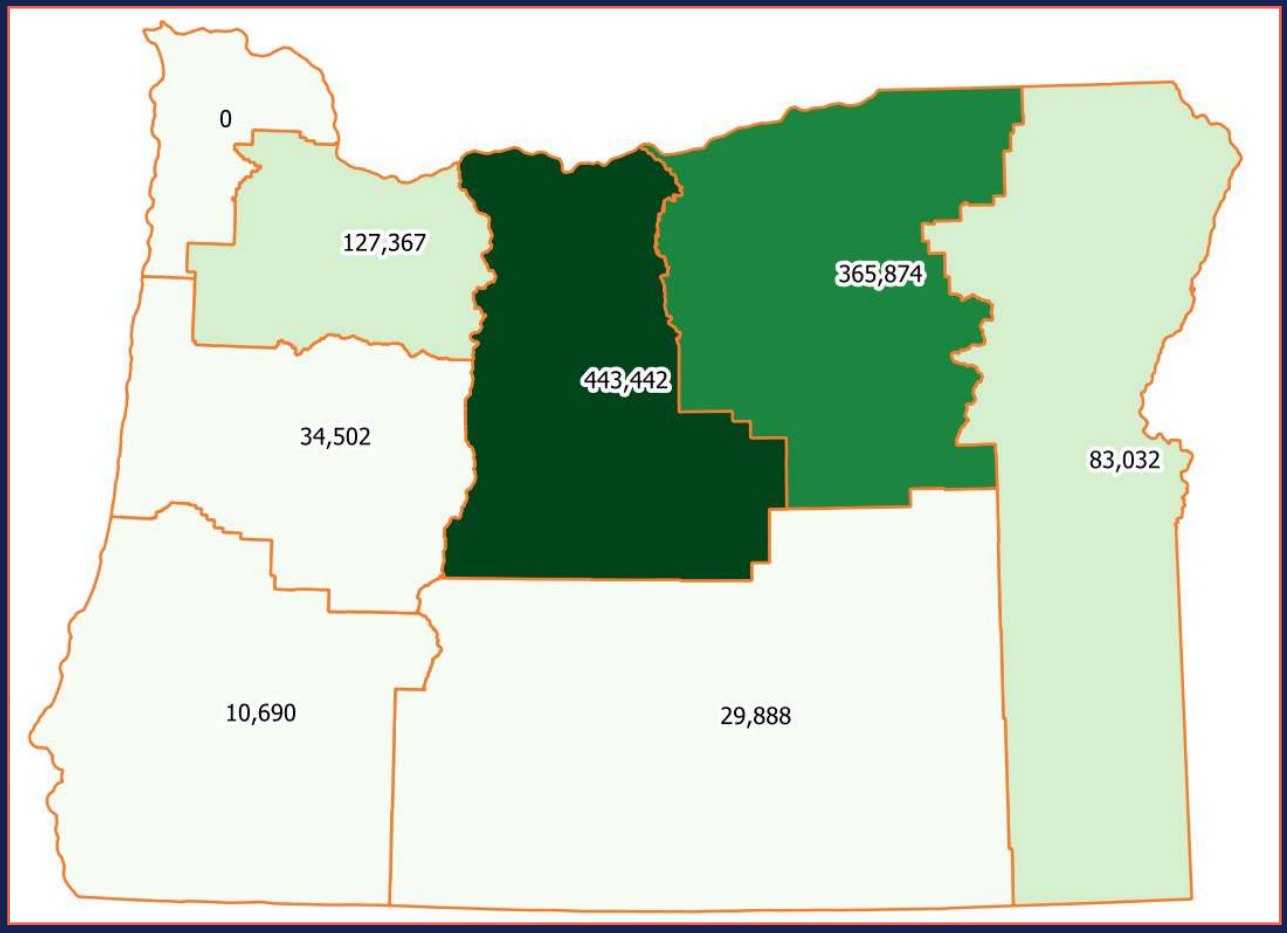
In the far northwestern corner of Oregon is the North Coast Conservation Basin

Because there is no meaningful renewable energy infrastructure in the North Coast Conservation Basin, it does not have the energy carrying capacity to support the needs of its population

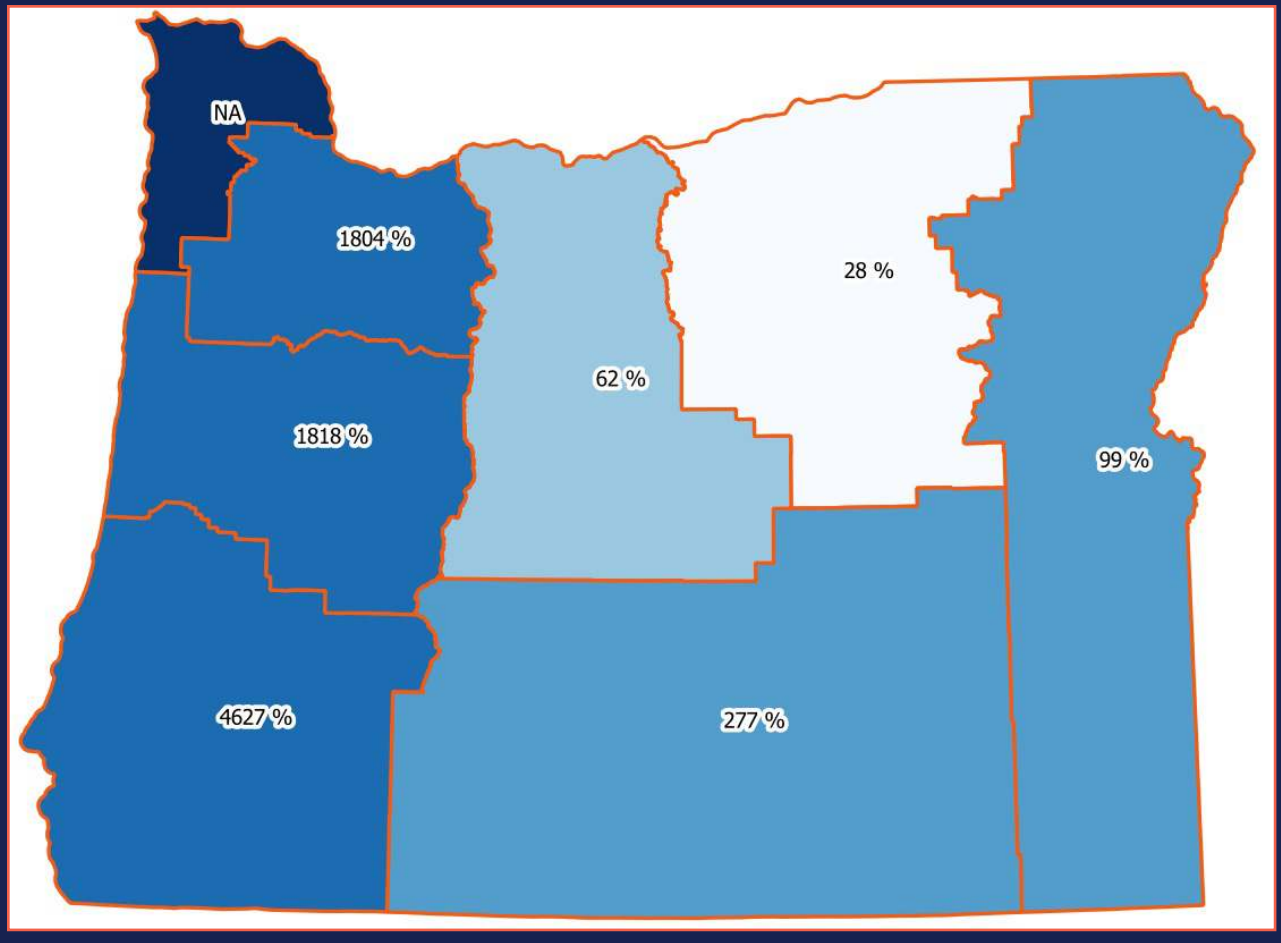
Present operating power of renewable energy in KW per Conservation Basin



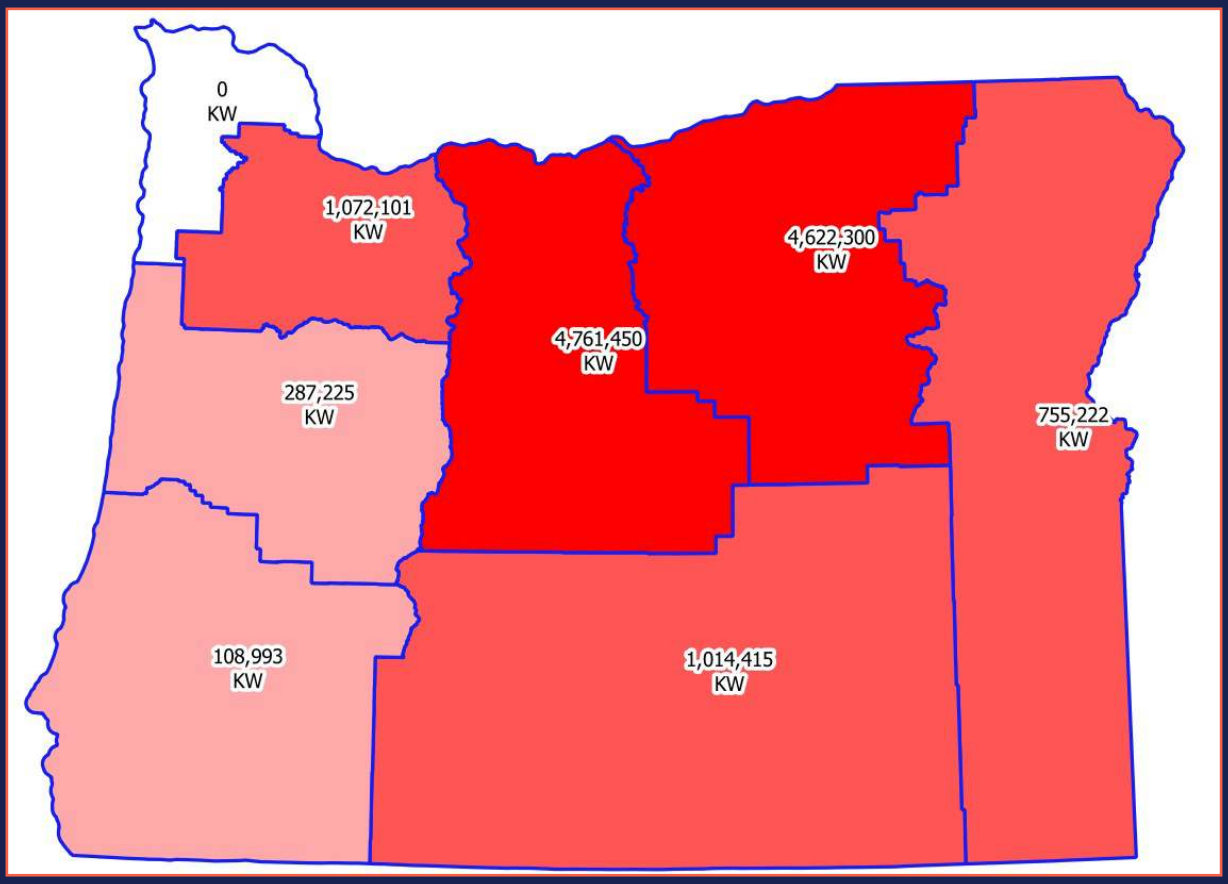
Population supported by the carrying capacity of present operating power of renewable energy per Conservation Basin



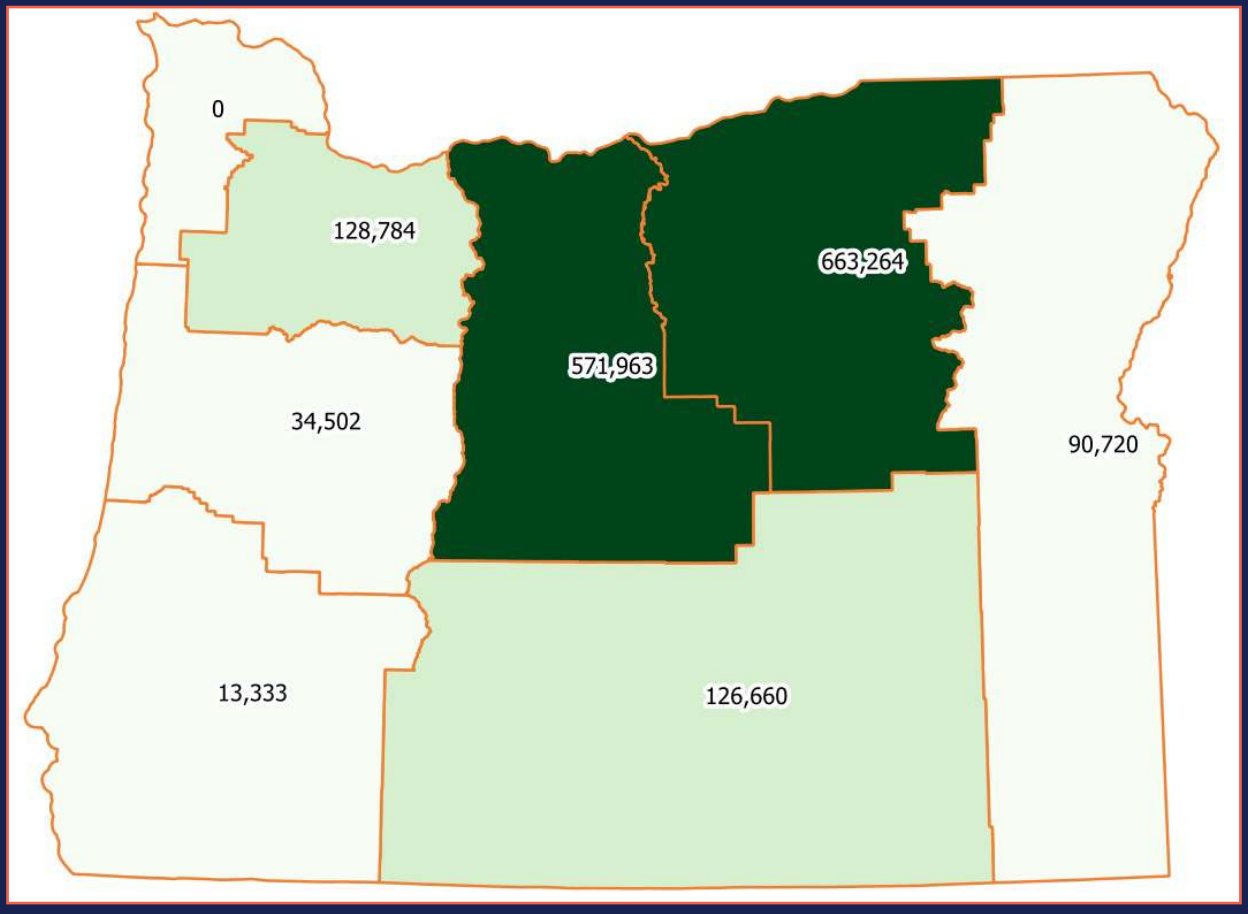
% carrying capacity of present operating power of renewable energy per Conservation Basin



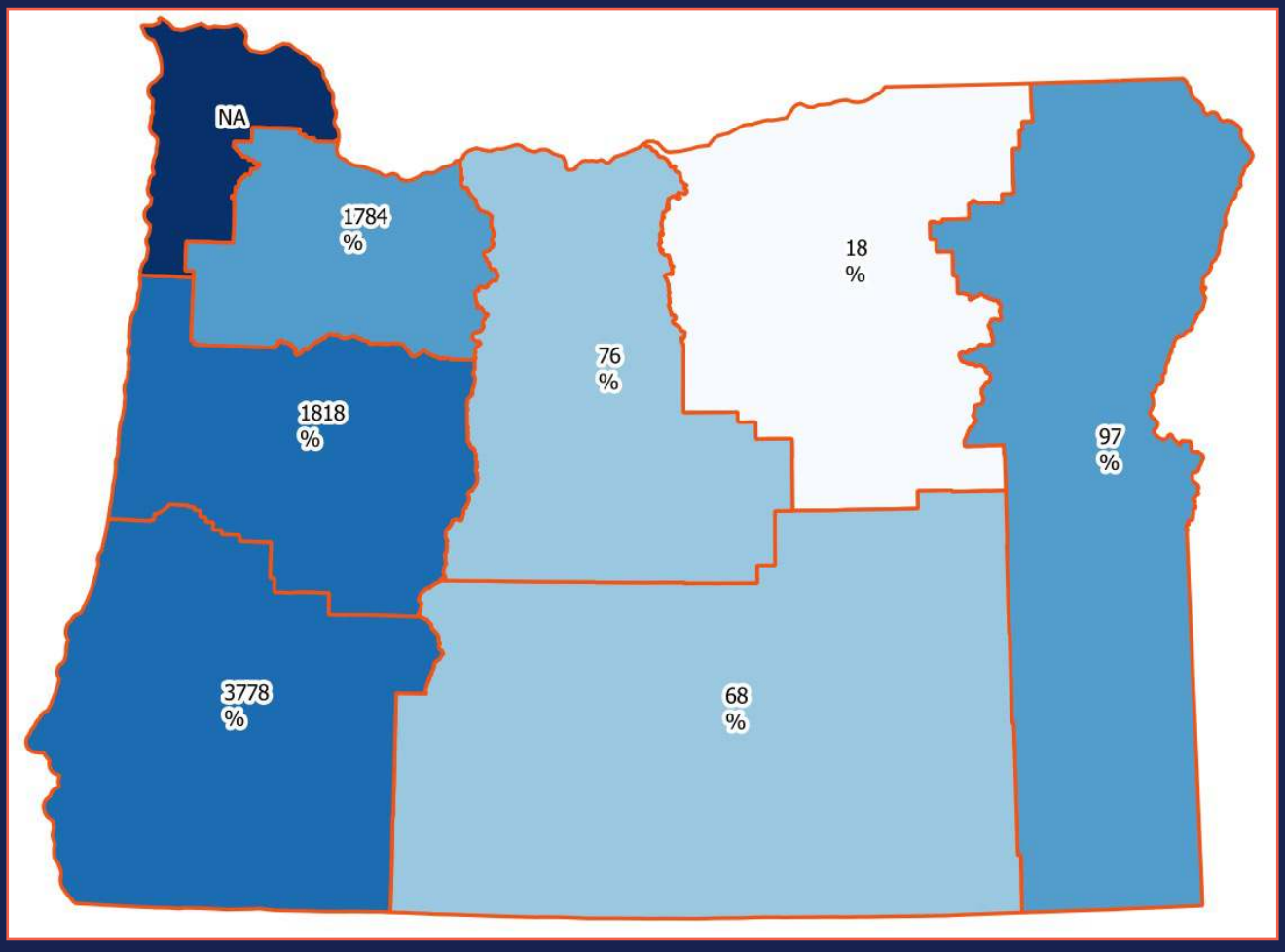
Total operating power of present and planned renewable energy in KW per Conservation Basin



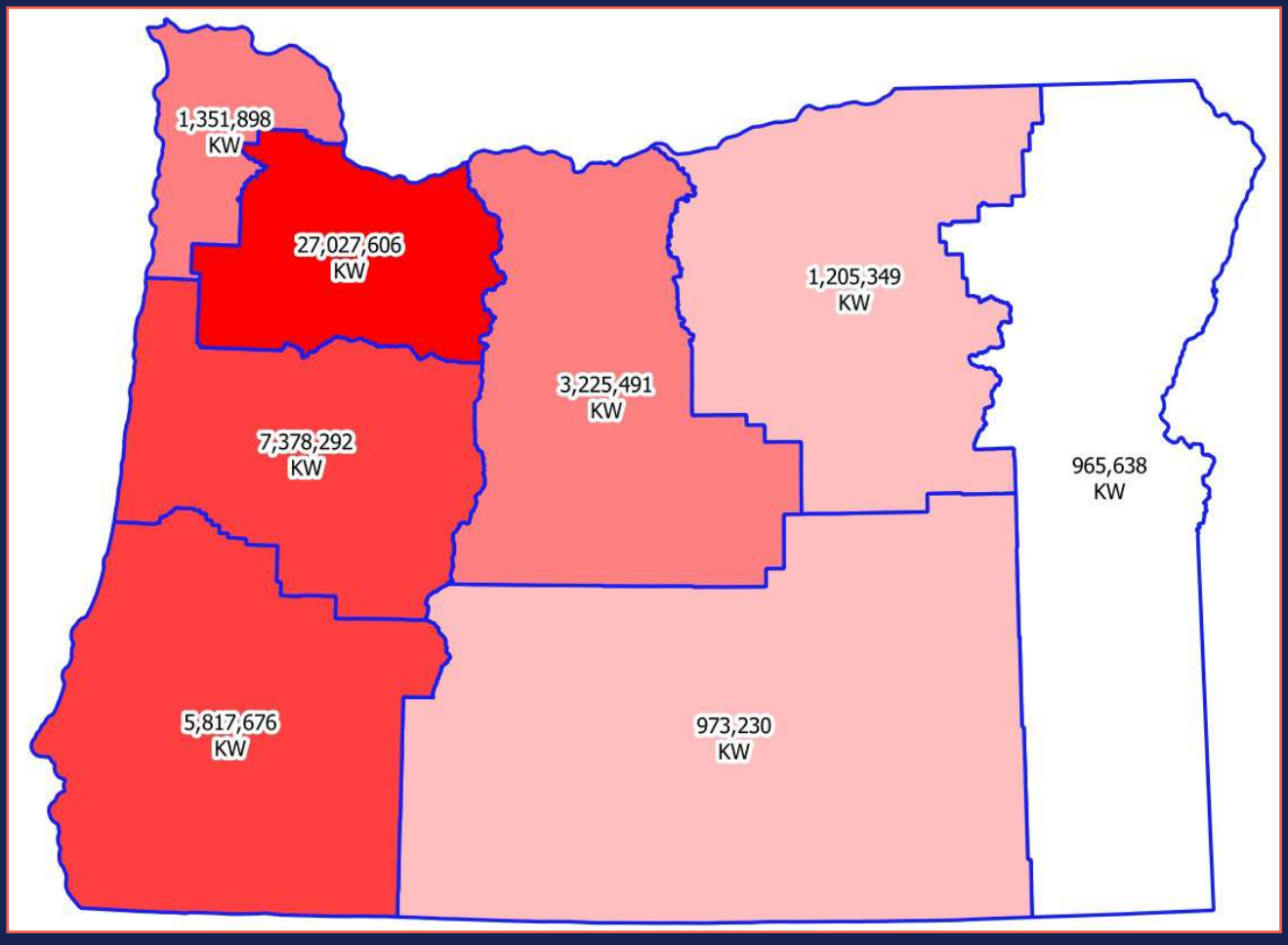
Population supported by the carrying capacity of total operating power of present and planned renewable energy per Conservation Basin



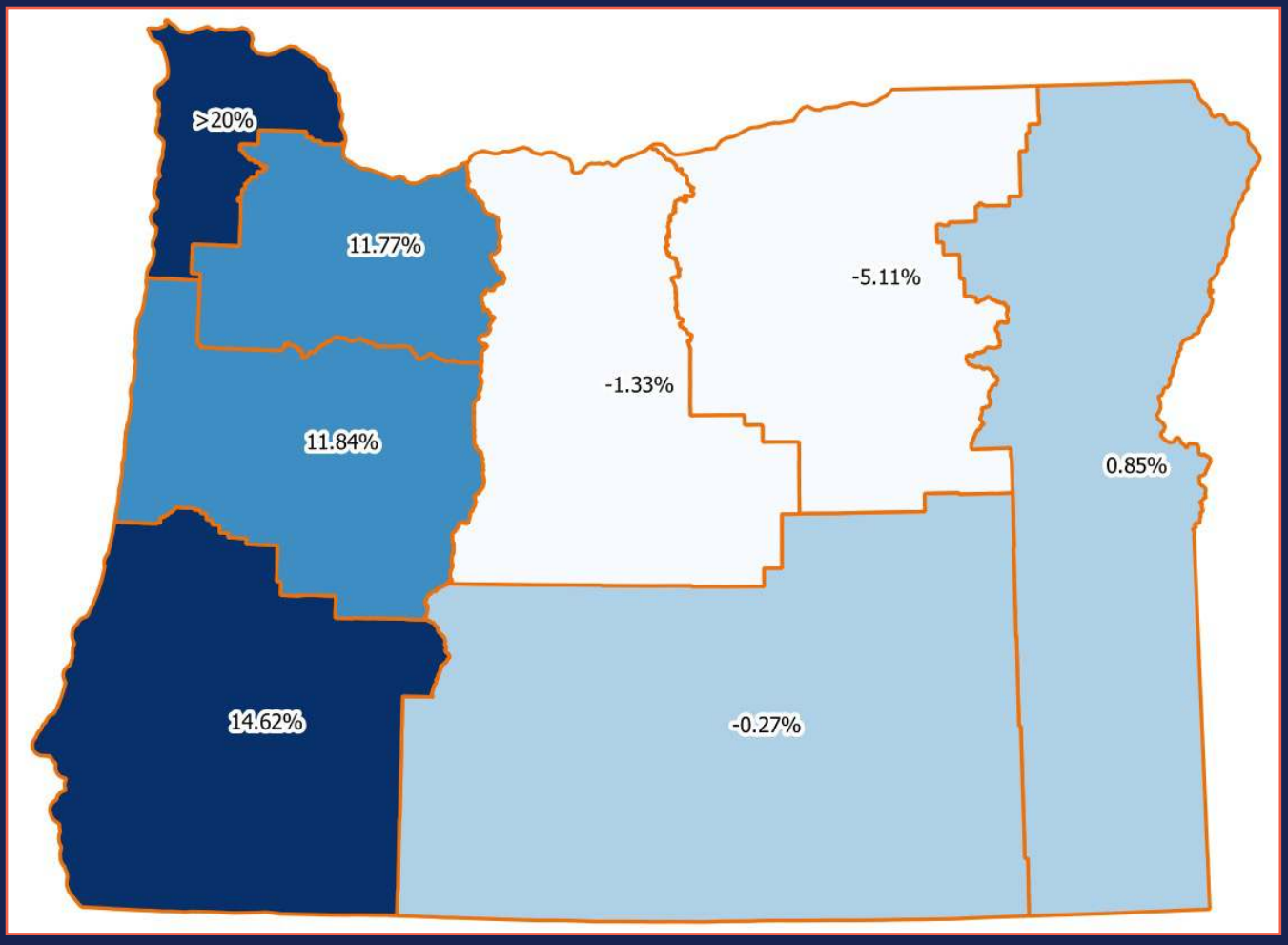
% carrying capacity of the total operating power of present and planned renewable energy to meet the needs of the population per Basin



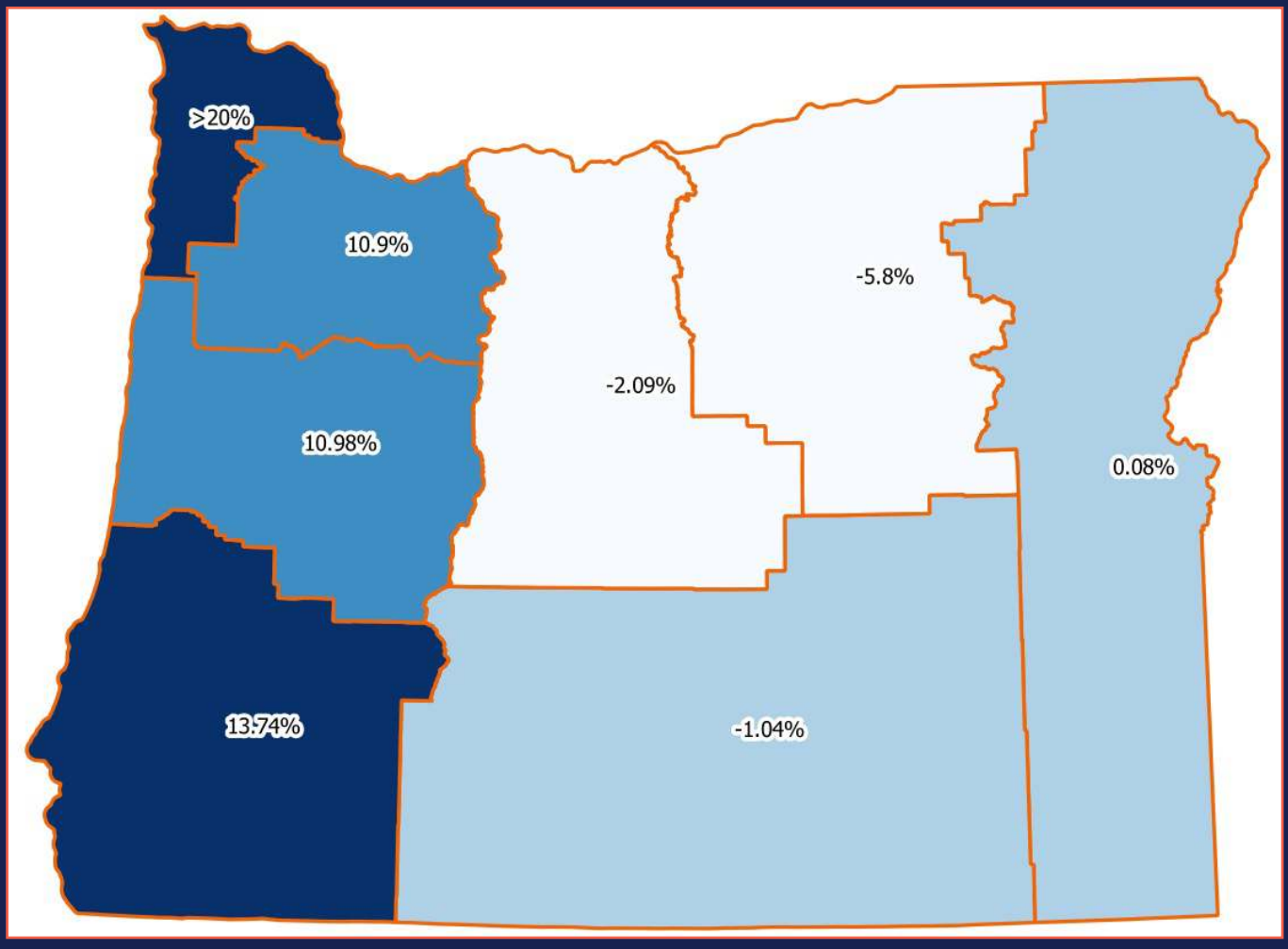
Total energy in KW required by population per Conservation Basin in 2045



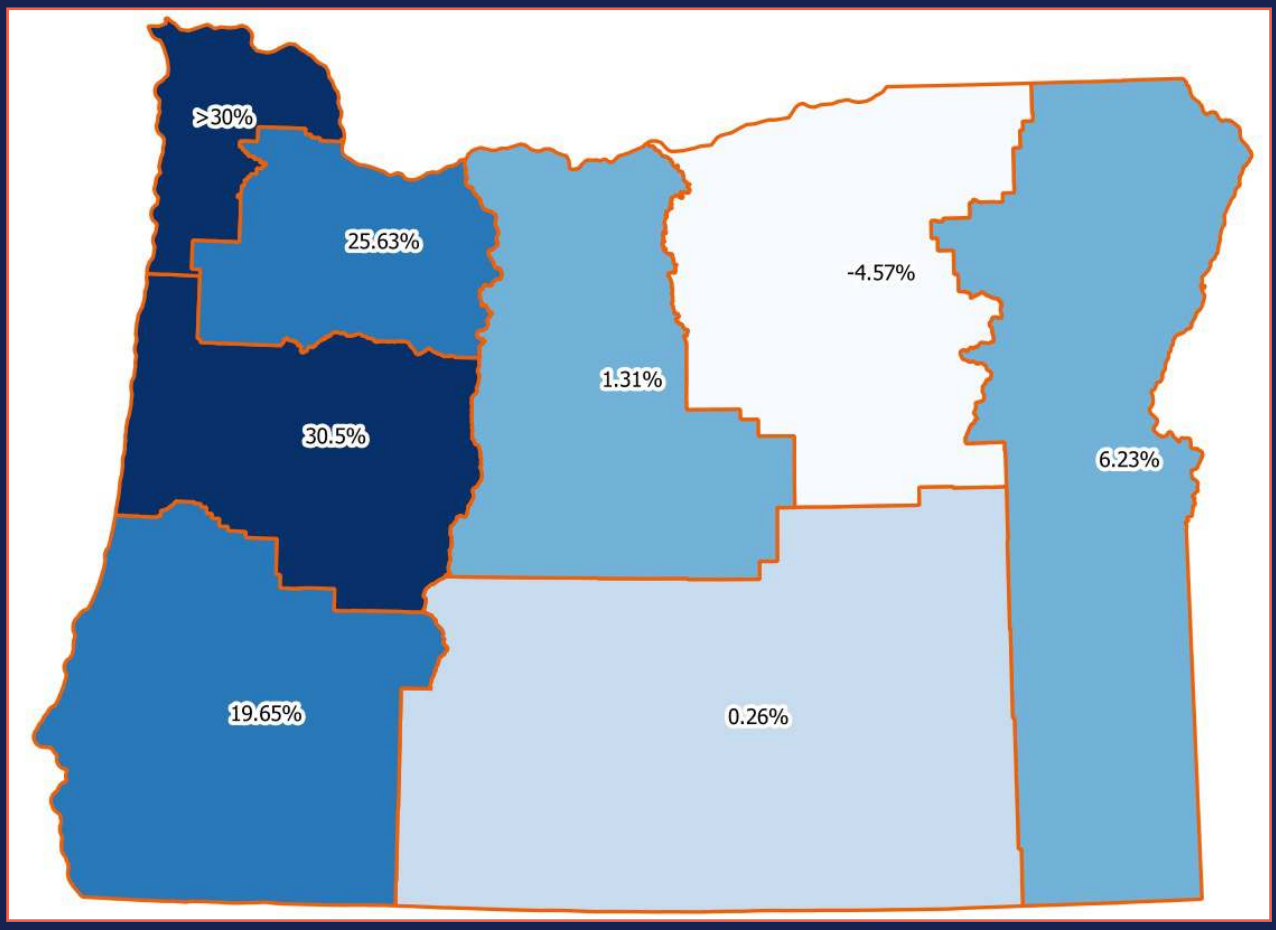
Annual % growth required to move to 100% renewable energy carrying capacity by 2045 per Conservation Basin



With 20% per capita improvement in energy use, annual % growth required to move to 100% renewable energy carrying capacity by 2045 per Conservation Basin



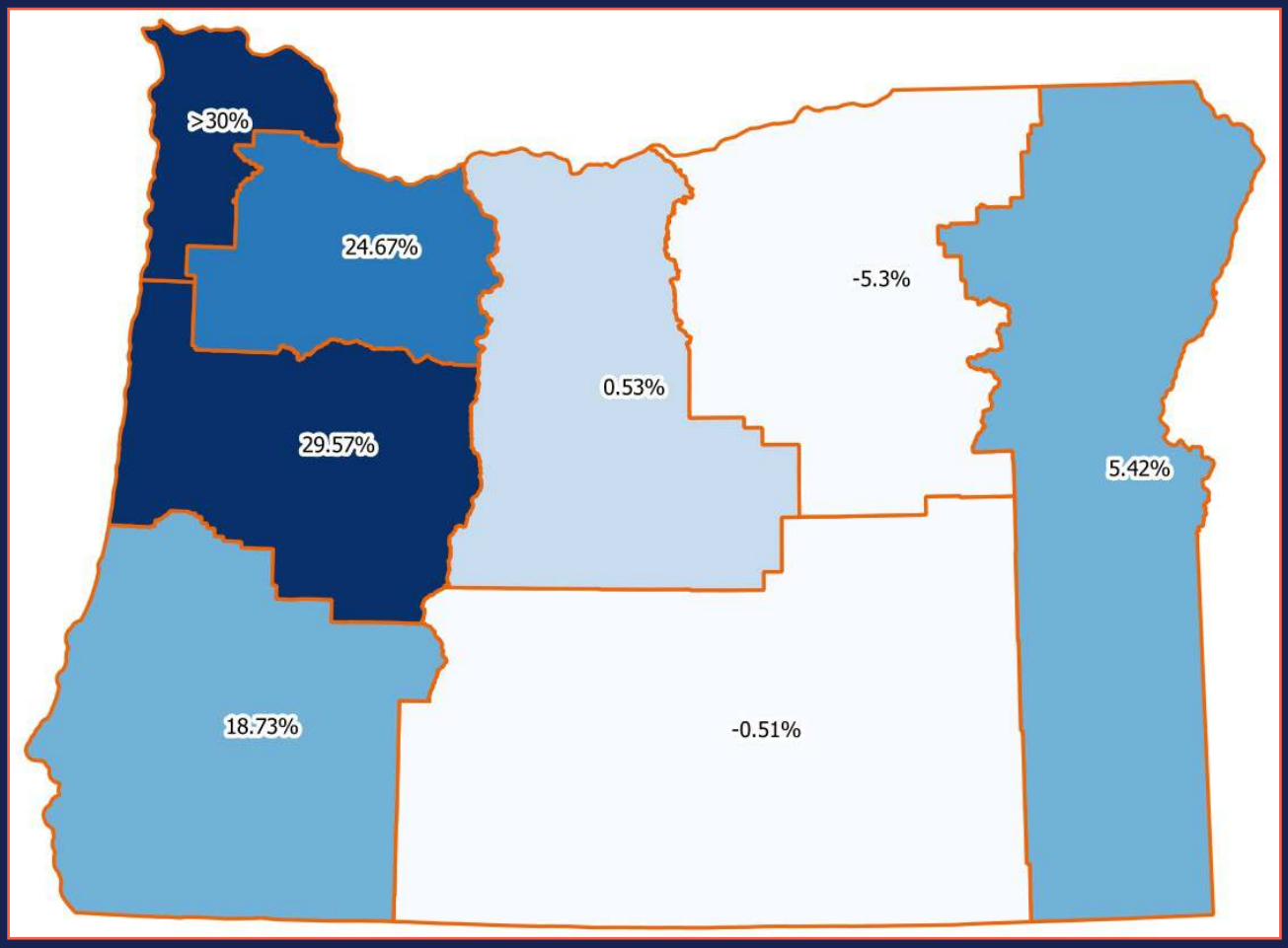
Annual % growth required to move to 100% renewable energy carrying capacity by 2045 per Conservation Basin, including all renewable sources, except hydroelectric and biofuel



Biofuels and hydroelectric remain constant between 2020 - 2045

Negative numbers indicate that the present power produced is adequate for the 2045 population

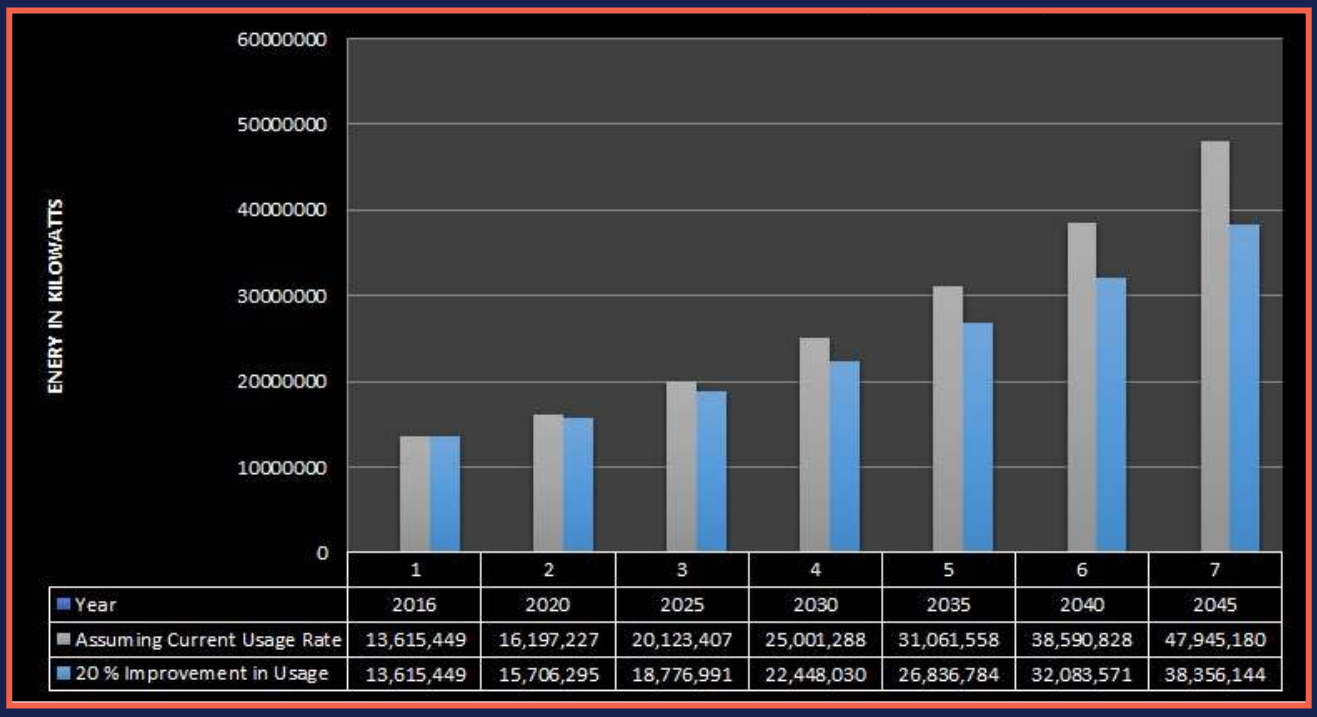
With 20% per capital improvement in energy use, annual % growth required to move to 100% renewable energy carrying capacity by 2045 per Conservation Basin, including all renewable sources, except hydroelectric and biofuel



Biofuels and hydroelectric remain constant between 2020 - 2045

Negative numbers indicate that the present power produced is adequate for the 2045 population

Required statewide growth of renewable energy in Kilowatts needed to reach 100% of energy needs by 2045



	1	2	3	4	5	6	7
Year	2016	2020	2025	2030	2035	2040	2045
Assuming Current Usage Rate	13,615,449	16,197,227	20,123,407	25,001,288	31,061,558	38,590,828	47,945,180
20 % Improvement in Usage	13,615,449	15,706,295	18,776,991	22,448,030	26,836,784	32,083,571	38,356,144

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Created by the EDA Research team

Data sources:

- Natural Resources Conservation Service Oregon
- United State Department of Agriculture
- US Energy Information Administration and US Department of Energy
- Oregon Department of Energy