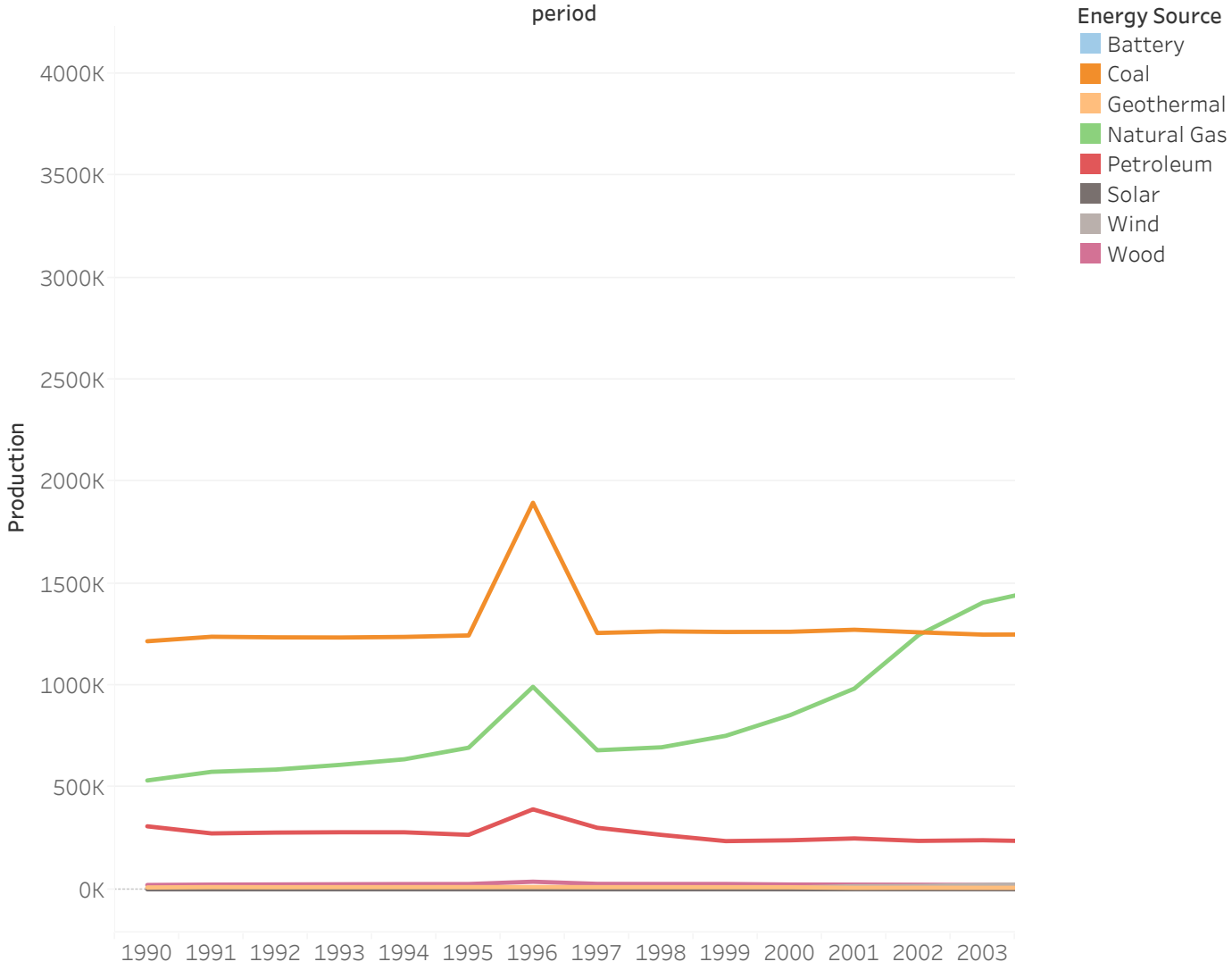
Trend of Energy Production (by Source)



This line graph illustrates a significant transformation in the energy production landscape over the past three decades. The shift towards natural gas and renewable sources, coupled with the decline of coal, suggests a move towards lower-carbon energy production methods.

Natural Gas has become the dominant energy source by a large margin. The production saw a huge increase in the early 2000s. Coal has been a major source but since 2008, there has been a decline in production. Similarly, production of petroleum has also seen a decline in the past few years.

Renewable Sources:

Solar and Wind: Significant growth starting from mid-2000s

Wind shows faster growth than solar

Both still contribute less than traditional sources but are rapidly increasing

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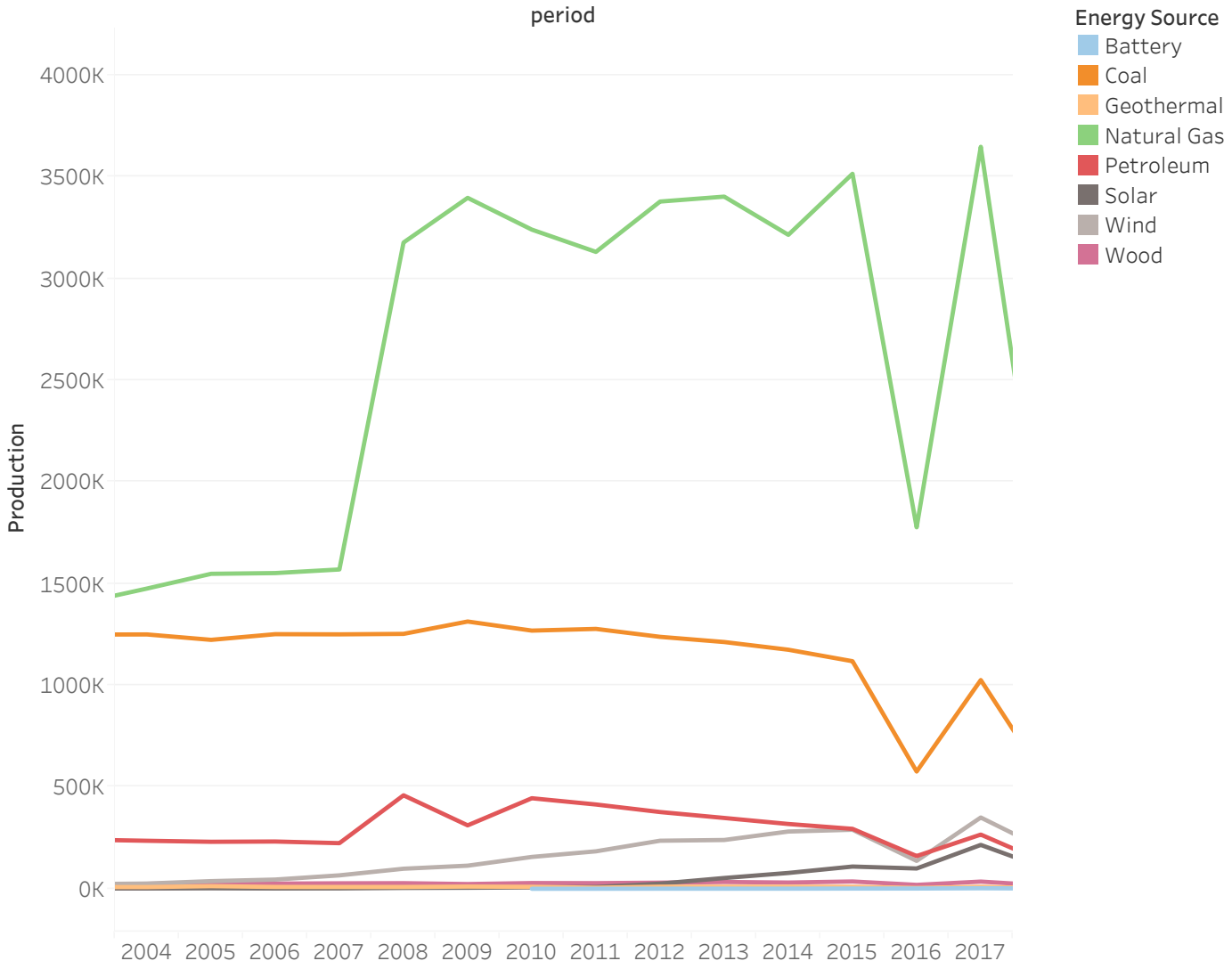

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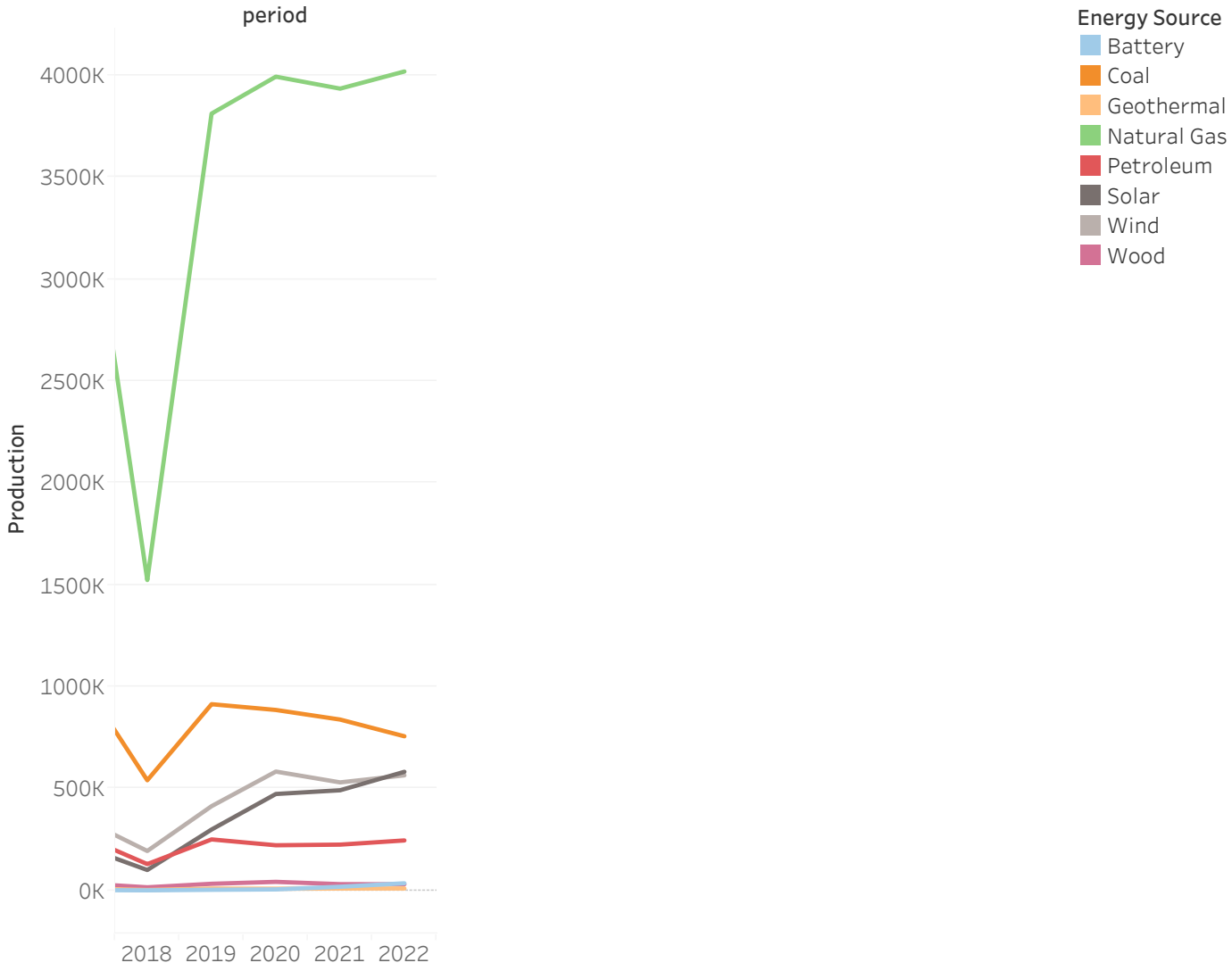

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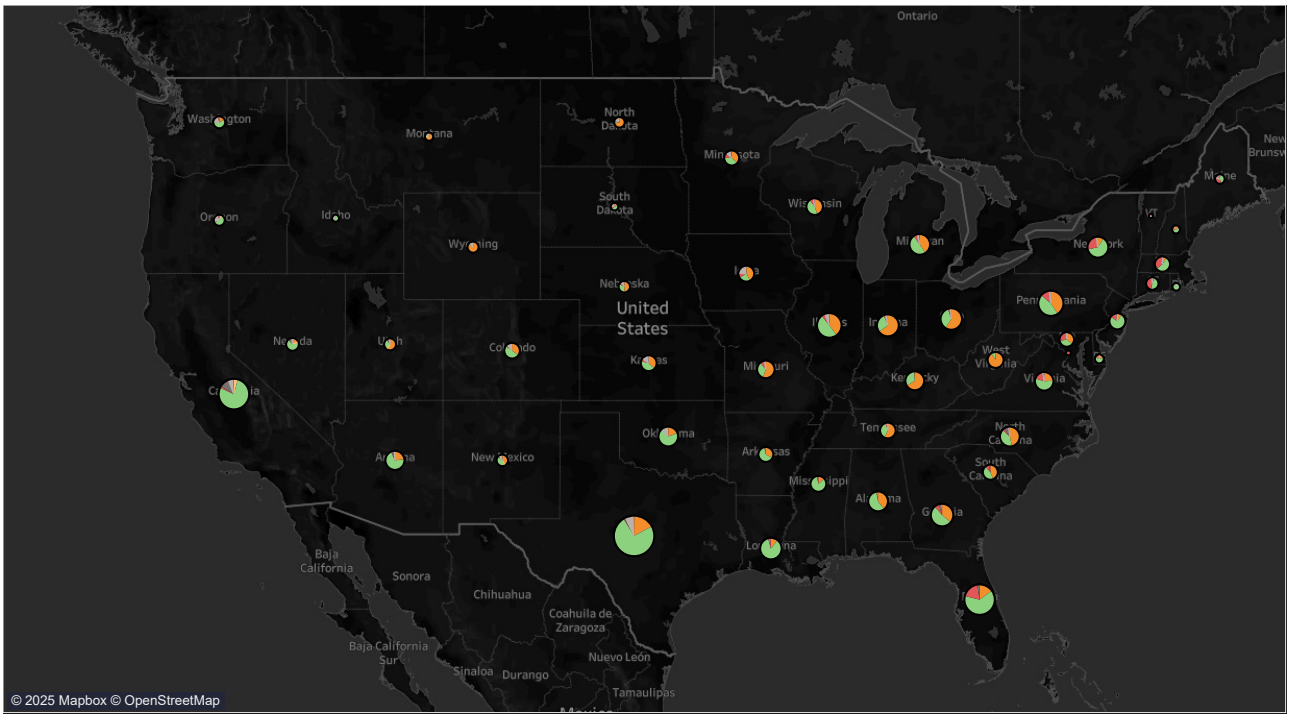
State level - Energy Production by Source

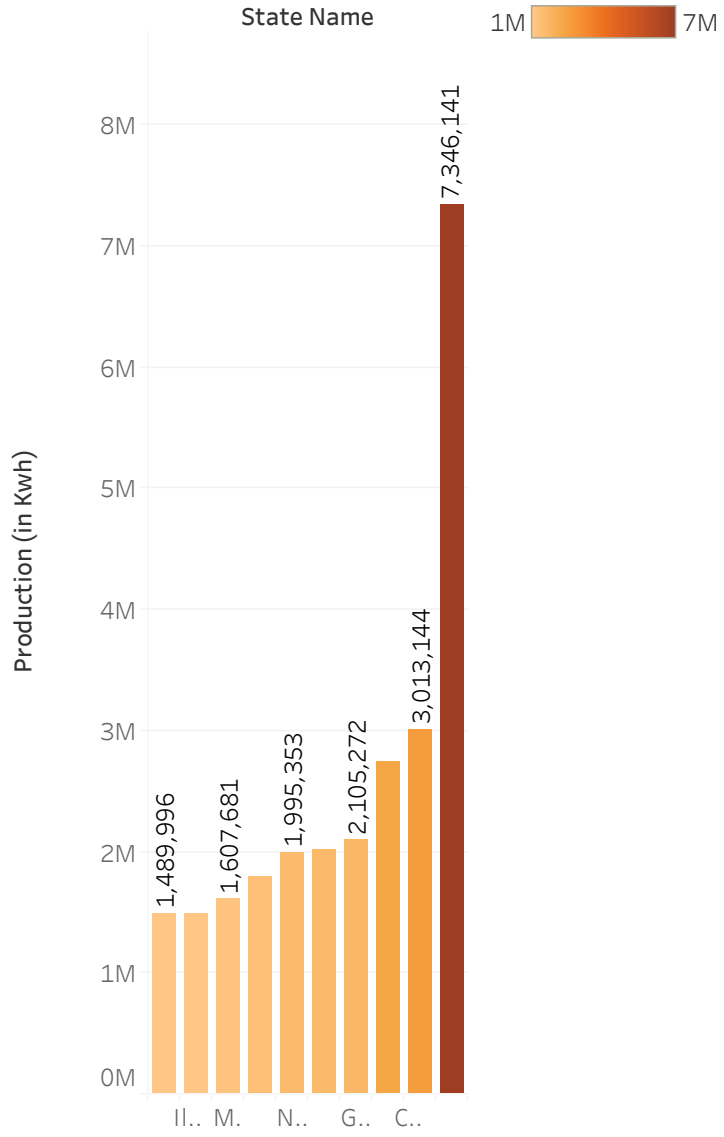


Moving on to a deeper analysis of the energy production sector, we analyzed the diverse energy landscape across the United States, highlighting regional differences in energy production. This visualization underscores the patterns in the US energy sector and the influence of geographical factors on energy production patterns.

Each state is represented by a pie chart, with the size of the chart indicating the total energy production volume by the state
Texas has the largest pie chart, indicating it's the biggest energy producer. California shows a diverse mix of energy sources.

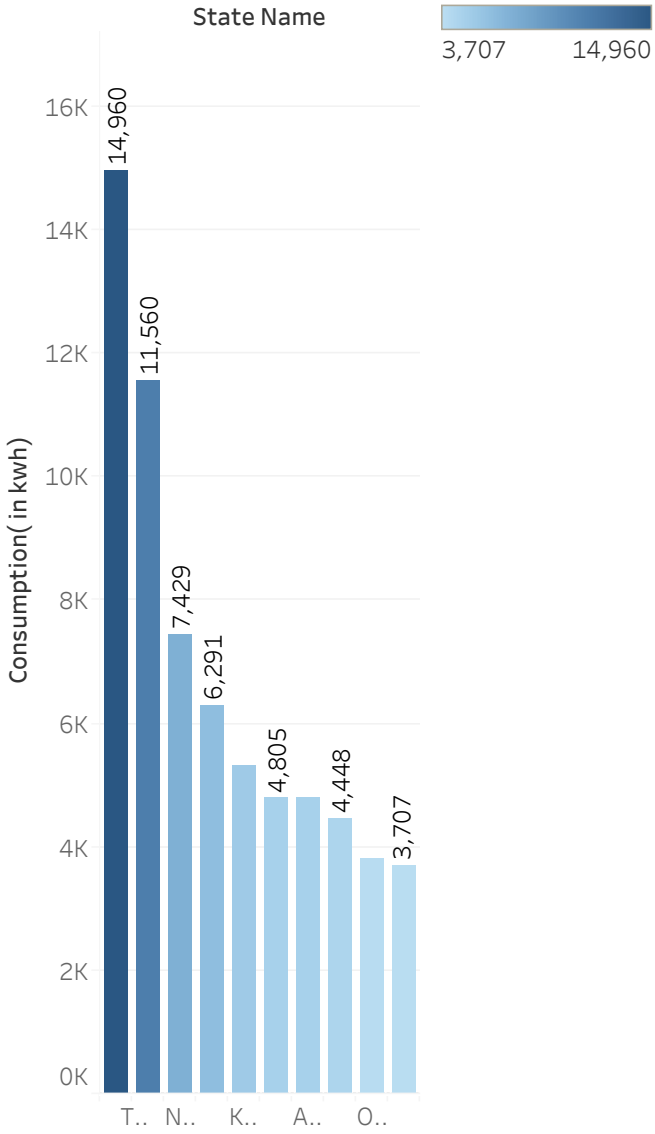
In terms of renewable energy production, a few of the key Regional Patterns that we observed are:
- Western states (e.g., California, Oregon, Washington) show a significant proportion of hydroelectric power.
- Midwestern states appear to have a higher proportion of wind energy.
- Southern states show more diversity in energy sources, with noticeable shares of nuclear and natural gas.
- Northeastern states have smaller pie charts, suggesting lower overall energy production compared to other regions.

Top 10 Energy Producing States in the year(s) All



Sum of Production for each State Name. Color shows sum of Production. The marks are labeled by sum of Production. The data is filtered on period, Filter year and Filter Energy Type. The period filter excludes Null. The Filter year filter keeps True. The Filter Energy Type filter excludes Null. The view is filtered on State Name, which has multiple members selected.

Top 10 Energy Consuming States in the year(s) All



Sum of Consumption(in kwh) for each State Name. Color shows sum of Consumption(in kwh). The marks are labeled by sum of Consumption(in kwh). The data is filtered on Year (Consumption), Filter year and Filter Energy Type. The Year (Consumption) filter keeps 63 members. The Filter year filter keeps True. The Filter Energy Type filter excludes Null. The view is filtered on State Name, which has multiple members selected.

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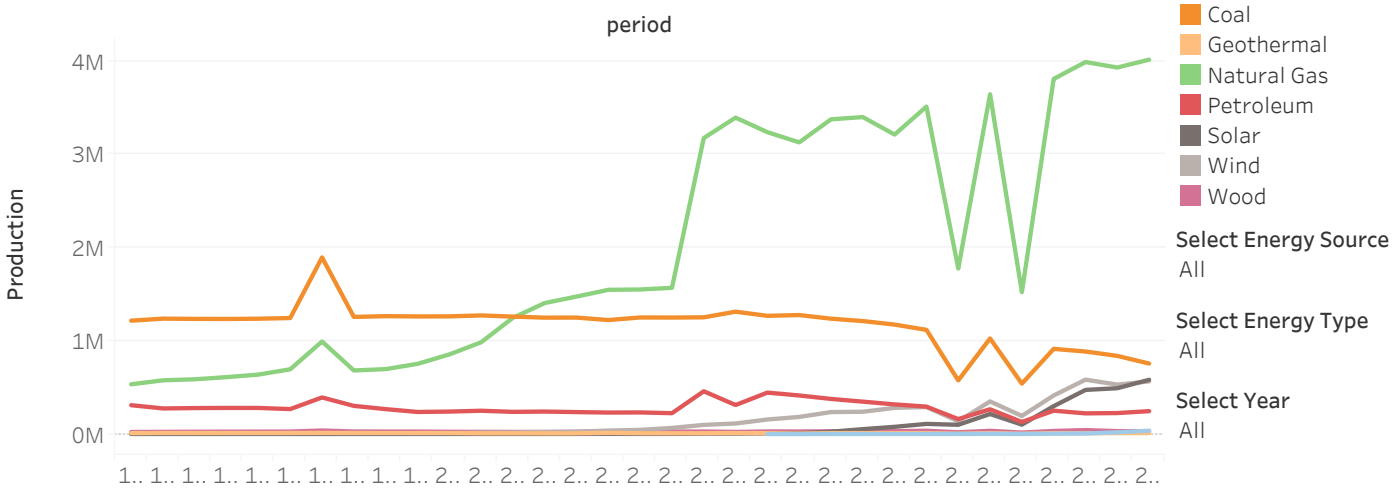

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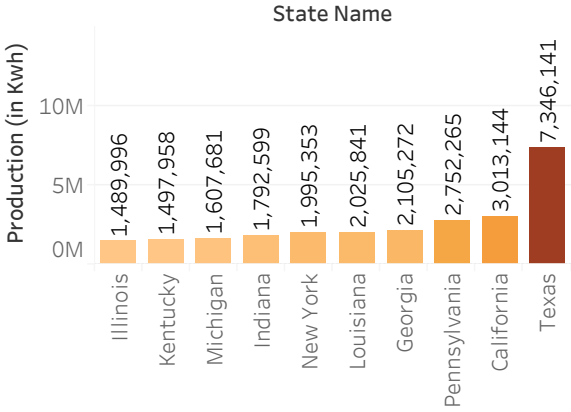

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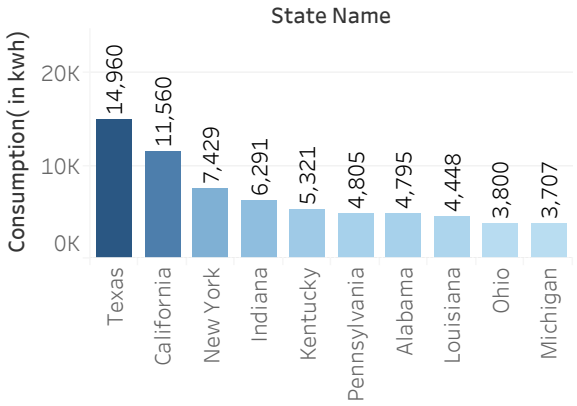
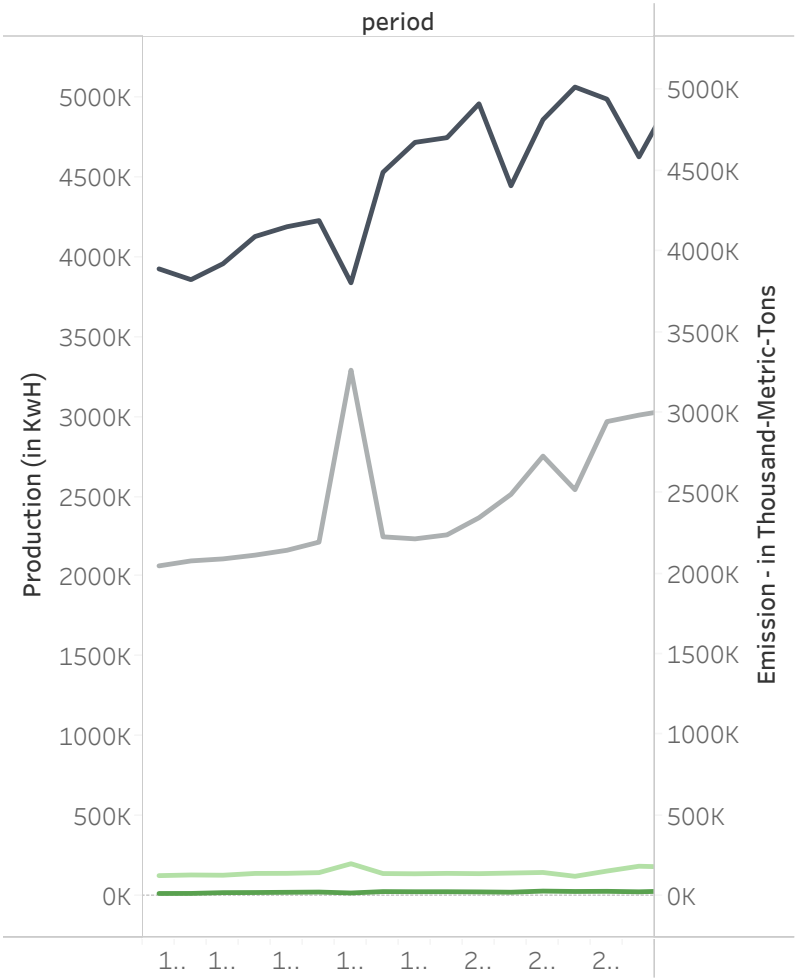


Enery production and emissions trends(1990-2022) by energy type



Fuel Type
- Fossil Fuels (Petroleum, Natural Gas, etc)
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This graph illustrates the ongoing transition in the energy sector from fossil fuels to renewable sources, highlighting both the progress made in renewable energy adoption and the persistent challenges with fossil fuel emissions.

Fossil fuel emissions remained high even as production declined, suggesting possible efficiency issues or changes in the types of fossil fuels used

Renewable energy production has grown significantly, especially since 2015

We also observe minimal emissions from renewable sources despite increased production

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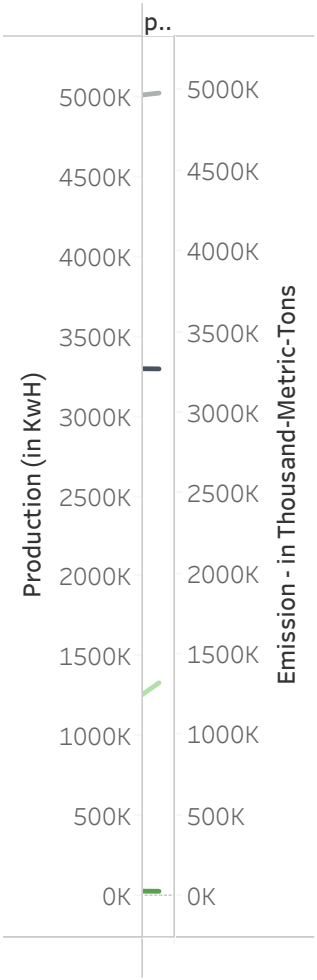

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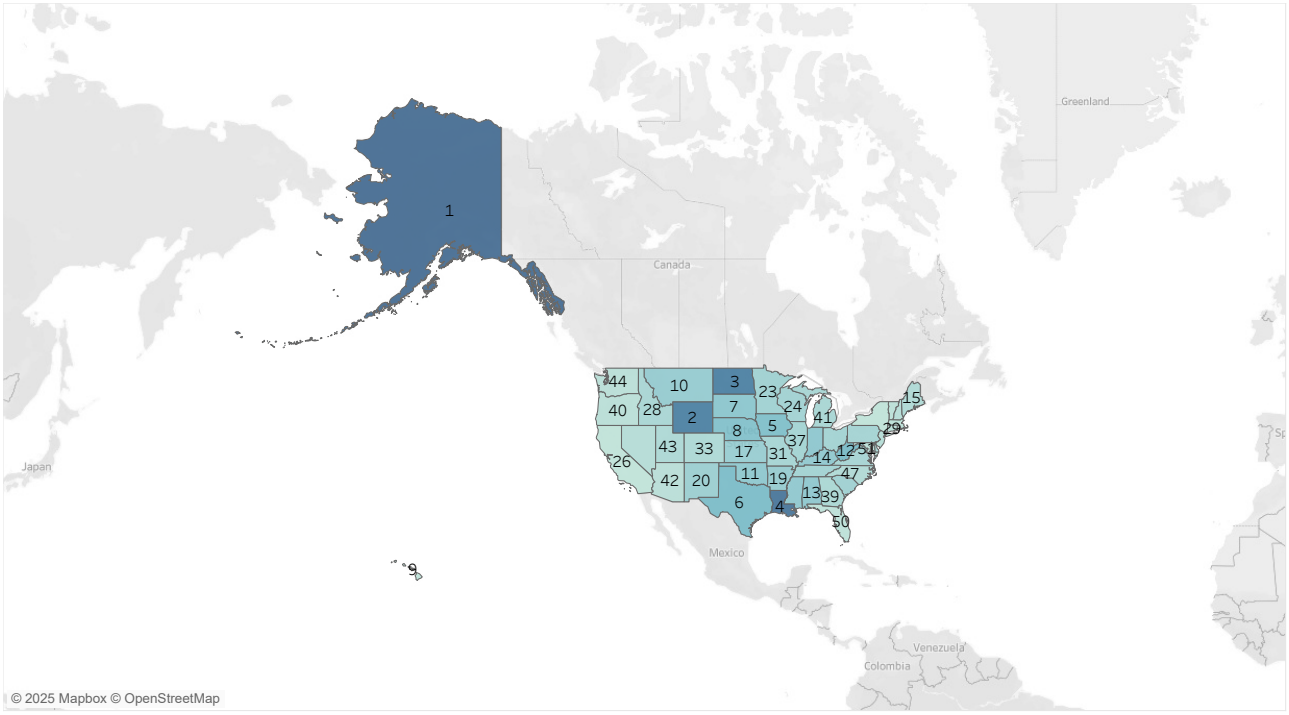
Rankings : Total renewable energy consumed per capita



Alaska ranks 1st in renewable energy consumption per capita
Rankings range from 1 to 50, covering all states
Northeastern states show mid-range performance
Many Midwestern states have lower rankings
Western states display mixed results
Consumption ranges from 171 to 987 million BTU per capita
Interactive dashboard allows for customized analysis
Additional metrics like expenditures and production are available
Regional patterns are visible but not uniform
Map visualization effectively communicates state-by-state comparisons

Energy Production by Source

	Energy Source						
State	Battery	Coal	Geothermal	Natural Gas	Petroleum	Solar	Wind
Alabama	12	662,020		958,741	4,632	7,403	
Alaska	1,129	8,293		103,335	67,830	6	1,474
Arizona	598	351,092		1,080,080	12,136	82,572	8,498
Arkansas	140	289,334		561,107	5,613	4,800	
California	16,772	19,245	138,691	3,354,862	78,964	453,205	209,660
Colorado	92	344,580		484,848	18,650	25,148	104,180
Connecticut	22	32,004		273,316	259,537	4,060	32
Delaware		50,698		157,745	40,570	1,693	52
District of Columbia		39		626	39,298	200	
Florida	2,224	635,444		2,742,094	798,856	79,179	
Georgia	261	804,591		1,172,508	141,528	58,857	
Hawaii	1,130	12,154	2,321	310	195,337	6,211	6,197
Idaho		1,010	334	79,209	791	7,712	29,148
Illinois	2,351	1,064,248		1,341,740	132,636	8,319	148,394
Indiana	496	1,353,023		598,482	45,632	12,292	71,692
Iowa	24	426,594		244,951	99,533	1,742	238,213
Kansas		374,746		427,124	61,181	492	146,212
Kentucky		993,366		491,055	9,065	1,025	
Louisiana	7	217,067		1,713,085	60,716	1,109	
Maine	398	4,513		129,502	97,590	2,346	19,790
Maryland	125	300,794		290,562	218,365	10,134	4,220
Massachusetts	1,084	87,742		499,440	302,034	25,978	1,969
Michigan	13	746,981		902,455	112,853	6,441	47,515
Minnesota	186	322,444		347,087	79,351	24,508	102,568
Mississippi		139,229		838,489	10,028	4,748	
Missouri	33	703,144		425,044	113,196	1,908	26,533
Montana		150,354	44	22,402	4,659	476	19,711
Nebraska	14	232,087		151,239	39,551	701	40,329
Nevada	650	115,352	16,283	402,032	3,840	60,511	2,700
New Hampshire		35,653		92,146	41,314	29	4,648
New Jersey	387	94,149		793,359	129,872	27,913	221
New Mexico	70	200,269	90	203,123	4,216	18,654	43,305
New York	494	169,301		1,171,113	480,963	13,070	39,629
North Carolina	143	778,779		669,169	58,959	138,490	2,912
North Dakota		270,251		18,685	6,890		85,558
Ohio	694	1,177,591		717,554	80,176	6,171	15,155
Oklahoma	60	317,747		1,149,160	6,654	878	177,577
Oregon	140	33,799	383	256,083	1,886	13,915	99,193
Pennsylvania	548	1,158,428		1,285,486	340,282	4,165	43,263
Rhode Island	6			155,054	3,538	3,275	943
South Carolina	24	389,659		400,830	71,459	13,717	
South Dakota	6	33,190		70,641	23,854	26	30,963
Tennessee		565,474		366,628	37,301	3,942	982
Texas	6,861	1,340,073		5,817,972	29,557	118,167	524,324
United States	35,493	18,974,900	163,934	31,761,842	4,569,289	1,245,783	2,208,728
Utah	2	304,120	2,957	157,401	3,124	36,177	9,950
Vermont	77				10,700	2,740	2,846
Virginia	21	347,310		808,151	223,833	34,040	48
Washington	85	95,119		298,884	5,220	1,115	98,174
West Virginia	912	927,582		77,322	1,042		16,138
Wisconsin	11	500,525		503,554	80,005	6,284	13,816
Wyoming		367,501		17,012	556	1,656	43,846

Sum of Production broken down by Energy Source vs. State. The view is filtered on Energy Source and State. The Energy Source filter excludes 6 members. The State filter excludes Null.

Energy Production by Source

State	Energy Sour.. Wood
Alabama	38,686
Alaska	492
Arizona	843
Arkansas	19,392
California	42,681
Colorado	269
Connecticut	788
Delaware	
District of Columbia	
Florida	26,464
Georgia	47,522
Hawaii	15
Idaho	6,099
Illinois	16
Indiana	
Iowa	
Kansas	
Kentucky	2,673
Louisiana	24,684
Maine	39,836
Maryland	416
Massachusetts	2,634
Michigan	17,115
Minnesota	10,299
Mississippi	17,009
Missouri	
Montana	727
Nebraska	
Nevada	
New Hampshire	9,475
New Jersey	
New Mexico	
New York	4,149
North Carolina	20,996
North Dakota	
Ohio	2,423
Oklahoma	3,862
Oregon	14,597
Pennsylvania	5,707
Rhode Island	
South Carolina	19,318
South Dakota	32
Tennessee	6,984
Texas	13,050
United States	447,791
Utah	
Vermont	4,967
Virginia	30,746
Washington	20,012
West Virginia	
Wisconsin	12,966
Wyoming	64

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