

PercentageGrowth

Lucy Wang

2023-12-06

Research Question: how will the percentage of clean energy generation grow for each of the 12 states?

```
# load packages  
library(here)
```

```
## here() starts at /Users/lucywang/Documents/872FinalProject
```

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --  
## v dplyr      1.1.4      v readr      2.1.4  
## v forcats    1.0.0      v stringr   1.5.1  
## v ggplot2    3.4.4      v tibble    3.2.1  
## v lubridate  1.9.2      v tidyr     1.3.0  
## v purrr      1.0.2
```

```
## -- Conflicts ----- tidyverse_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag()     masks stats::lag()  
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(lubridate)  
library(trend)  
library(tseries)
```

```
## Registered S3 method overwritten by 'quantmod':  
##   method      from  
##   as.zoo.data.frame zoo
```

```
library(forecast)
```

```
# select files  
file_list <-  
  list.files(  
    path = here('Processed'), pattern = "\\\\.csv$", full.names = TRUE  
  )
```

```

file_name <- c('California','combined_df', 'Connecticut',
              'Illinois', 'Maine', 'Michigan', 'Minnesota',
              'Nevada', 'New_Mexico', 'New_York',
              'Oregon', 'Virginia', 'Washington')

names(file_list) <- file_name

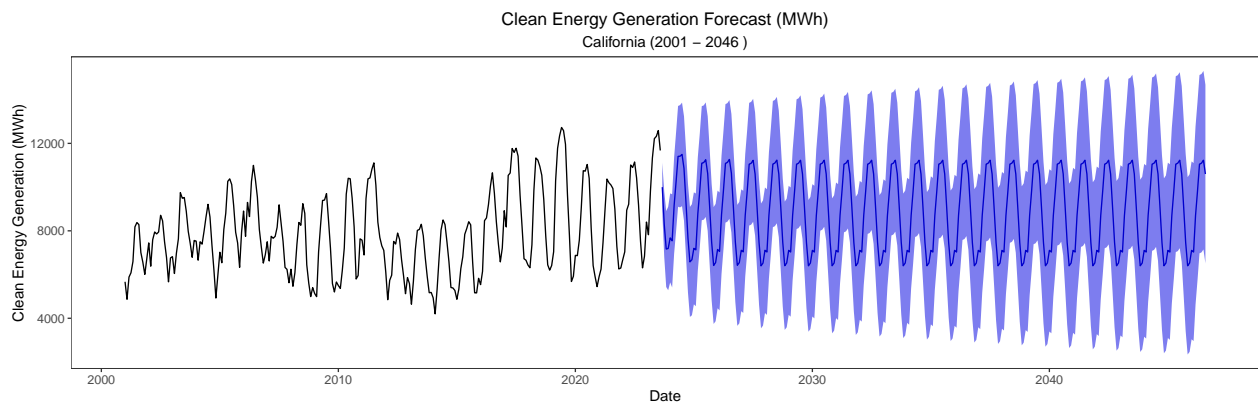
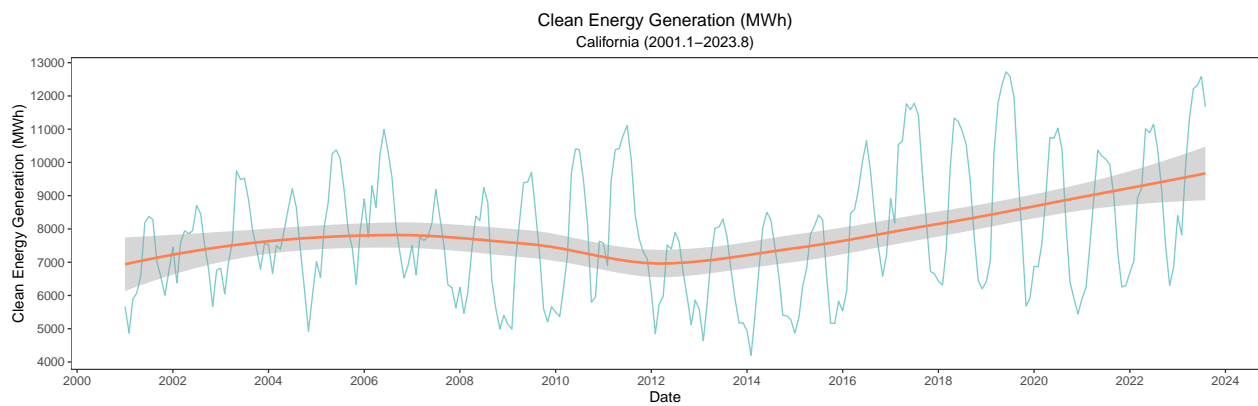
#create a function that read csv files
csv_reader <- function(state_name) {
  file_i <- read.csv(file_list[[state_name]], stringsAsFactors = TRUE)
}

# set a theme for plots
mytheme <- theme_bw()+
  theme(plot.title = element_text(hjust=0.5),
        plot.subtitle =element_text(hjust=0.5),
        text=element_text(size=12, family='sans'),
        panel.grid.minor = element_blank(),
        panel.grid.major = element_blank())

```

California

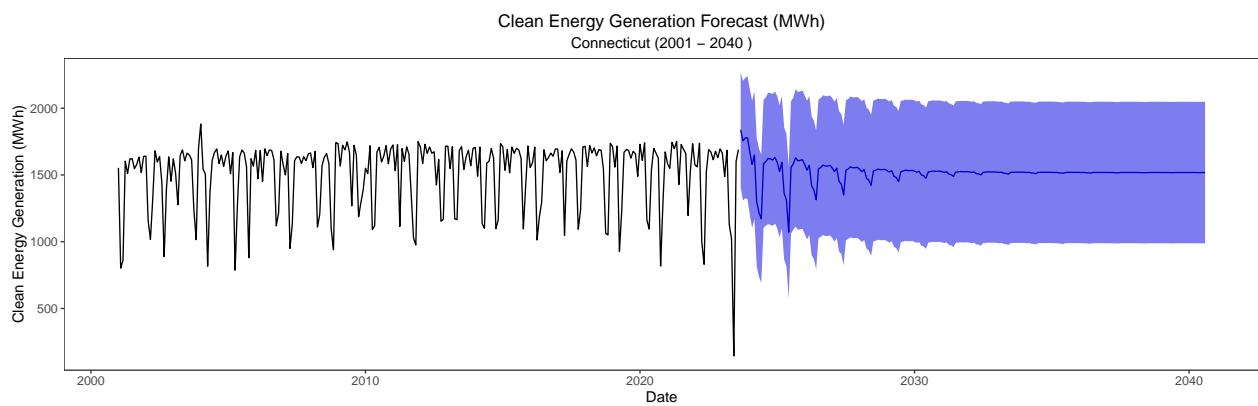
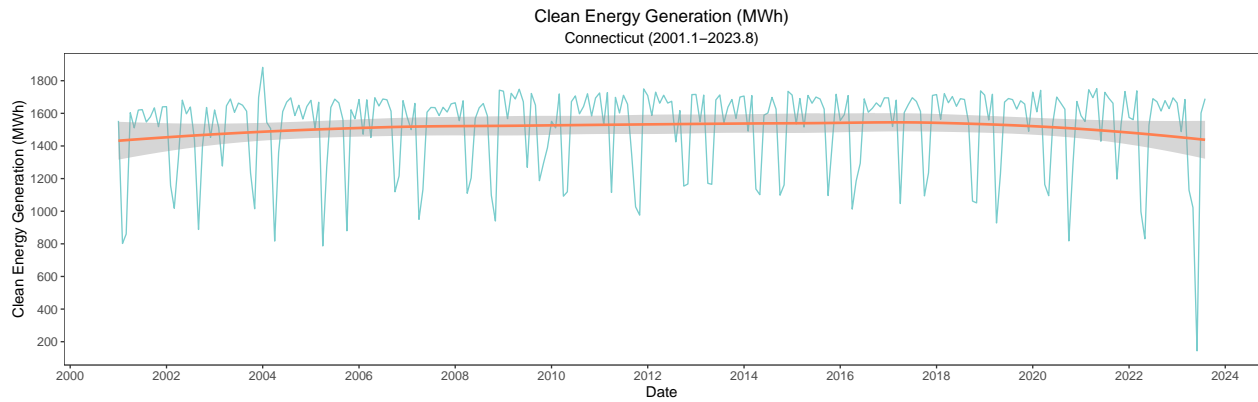
'geom_smooth()' using formula = 'y ~ x'



```
## [1] "The forecasted Clean Energy Generation in 2046 is 10598.706103518"
```

Connecticut

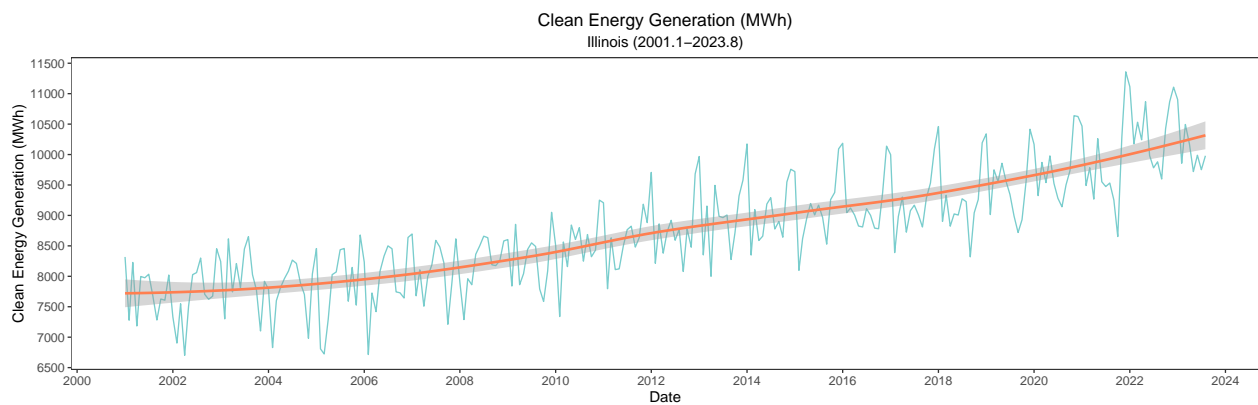
```
## 'geom_smooth()' using formula = 'y ~ x'
```

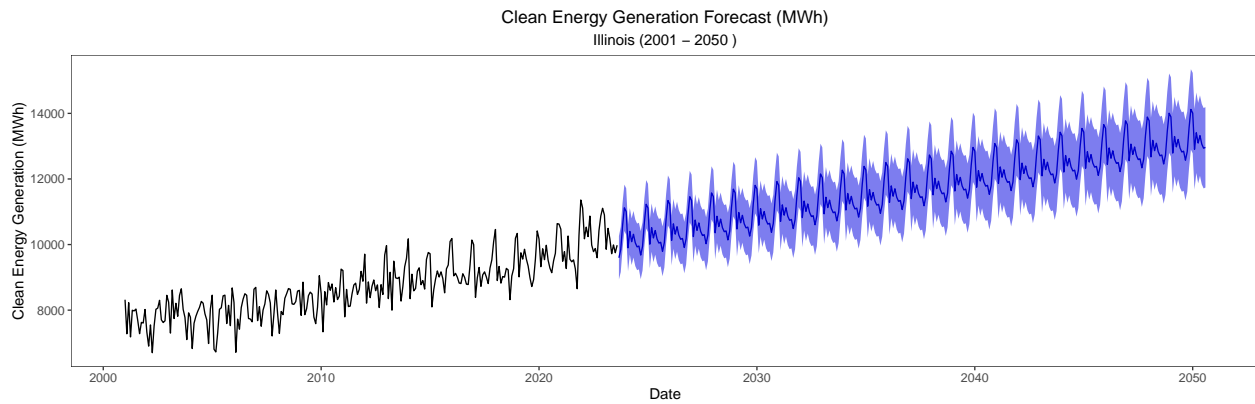


```
## [1] "The forecasted Clean Energy Generation in 2040 is 1518.44387952502"
```

Illinois

```
## 'geom_smooth()' using formula = 'y ~ x'
```

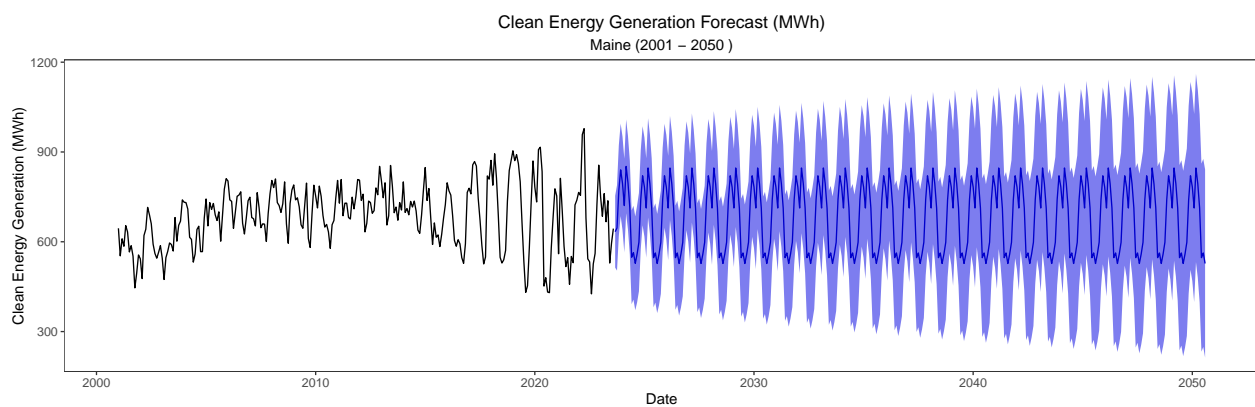
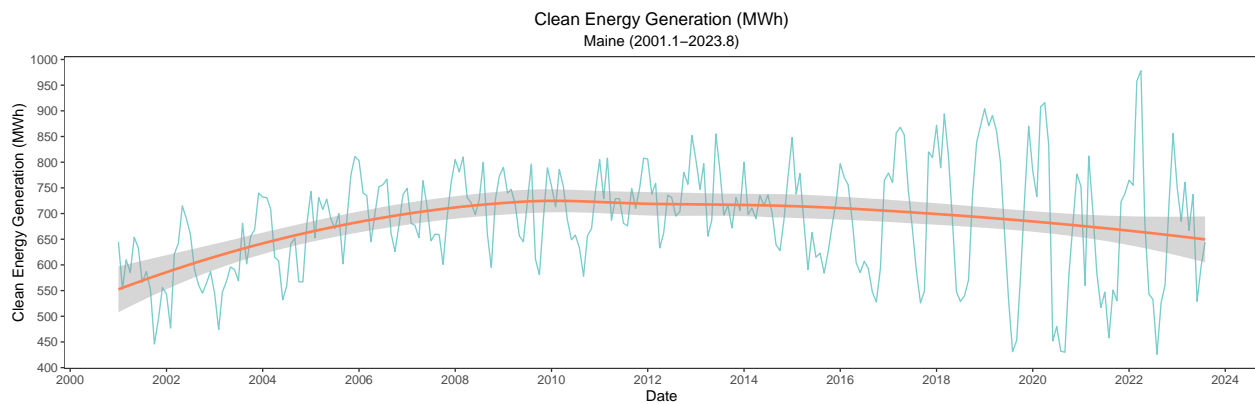




```
## [1] "The forecasted Clean Energy Generation in 2050 is 12962.6325559501"
```

Maine

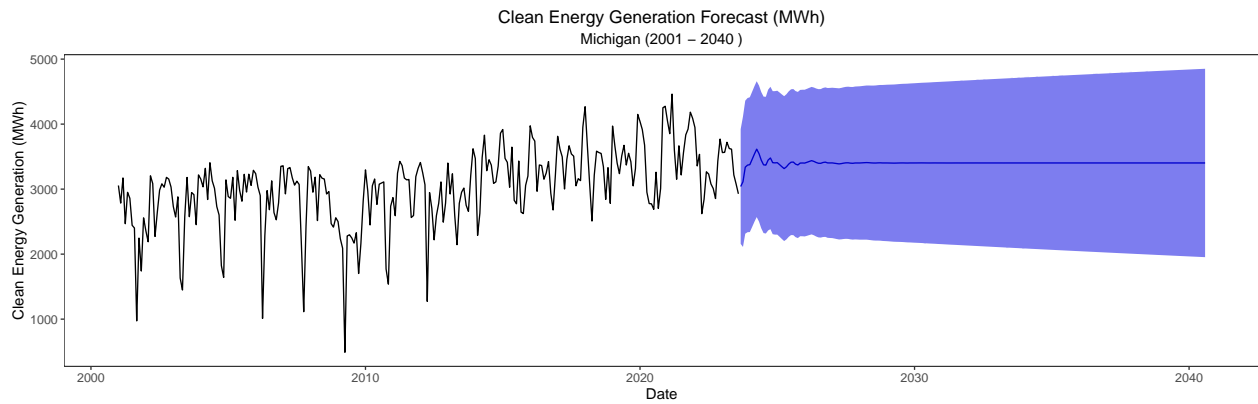
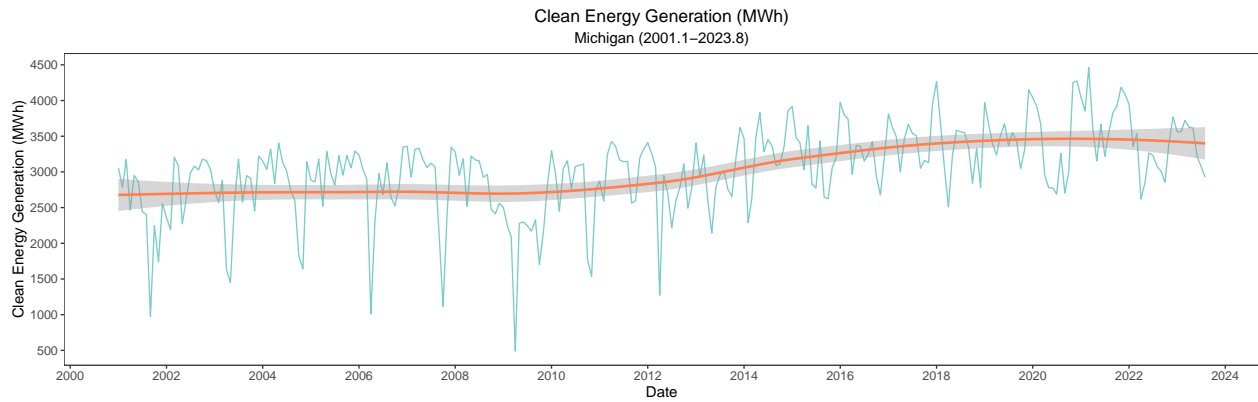
```
## 'geom_smooth()' using formula = 'y ~ x'
```



```
## [1] "The forecasted Clean Energy Generation in 2050 is 527.434529255384"
```

Michigan

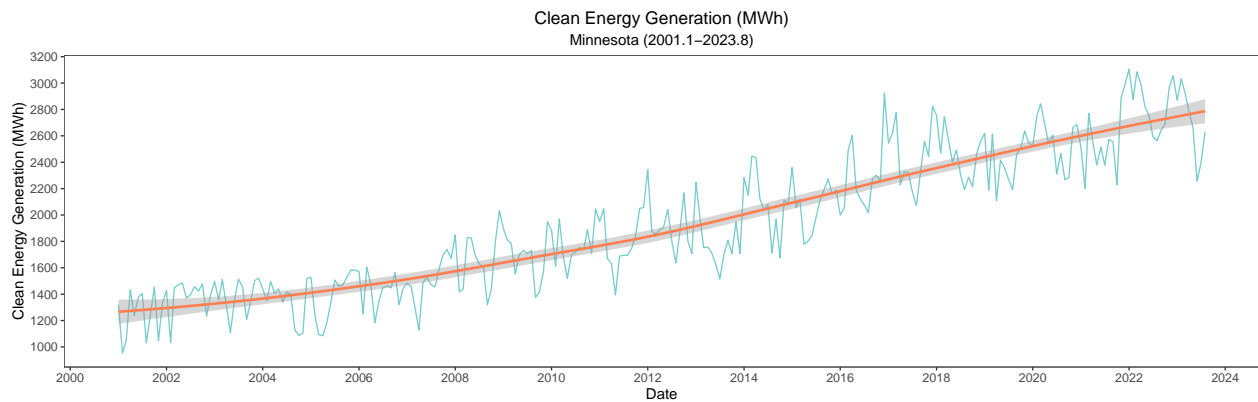
```
## 'geom_smooth()' using formula = 'y ~ x'
```

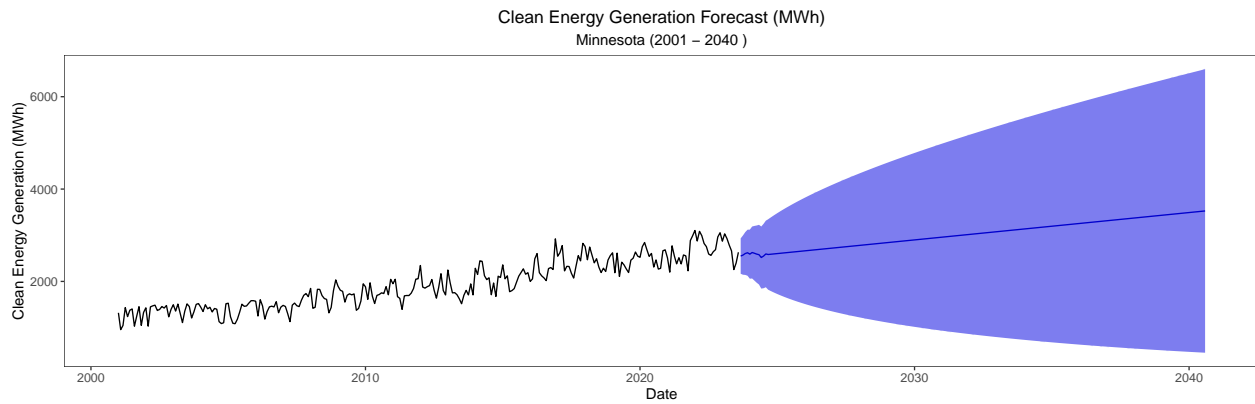


```
## [1] "The forecasted Clean Energy Generation in 2040 is 3402.52861033953"
```

Minnesota

```
## 'geom_smooth()' using formula = 'y ~ x'
```

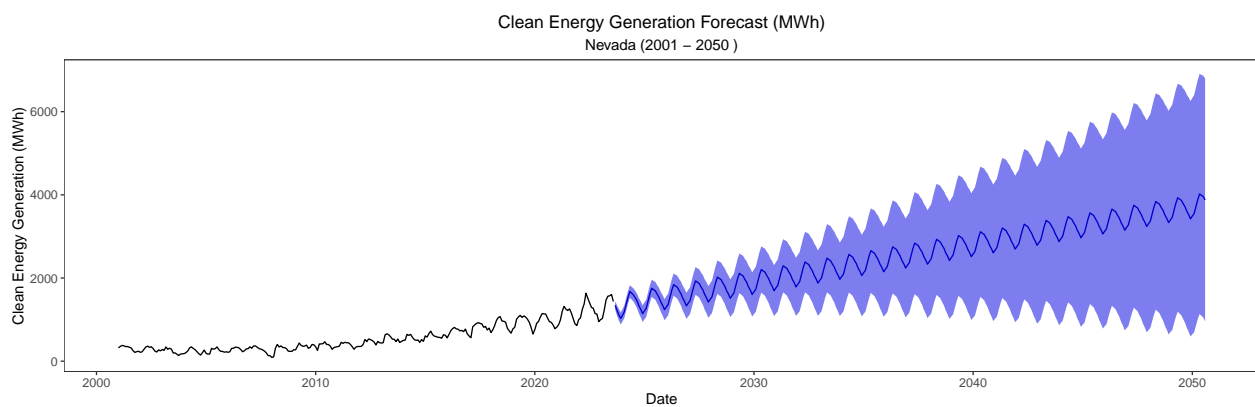
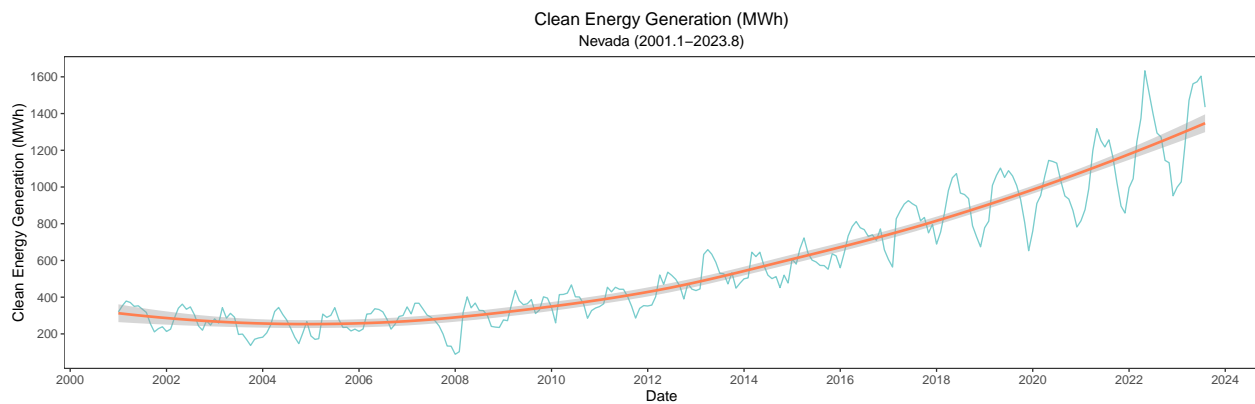




```
## [1] "The forecasted Clean Energy Generation in 2040 is 3526.04182483295"
```

Nevada

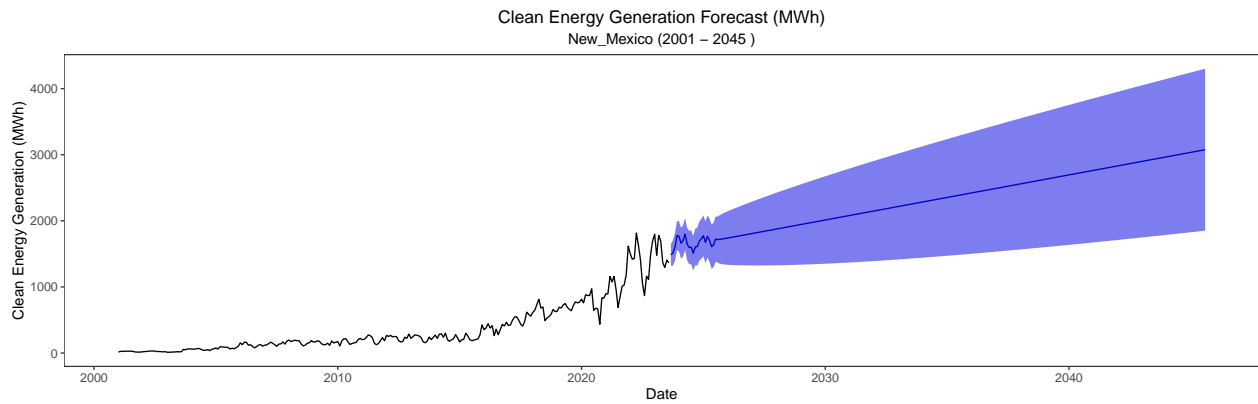
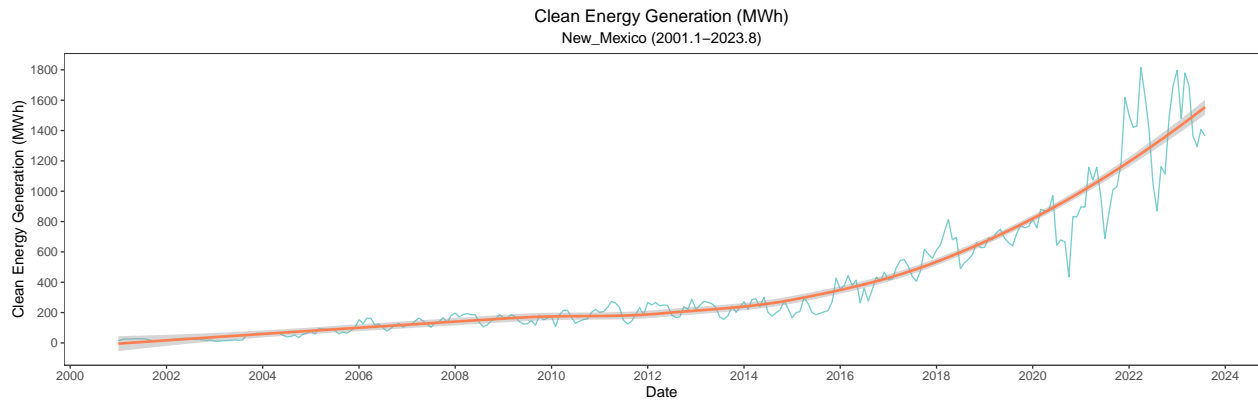
```
## 'geom_smooth()' using formula = 'y ~ x'
```



```
## [1] "The forecasted Clean Energy Generation in 2050 is 3876.83627253261"
```

New Mexico

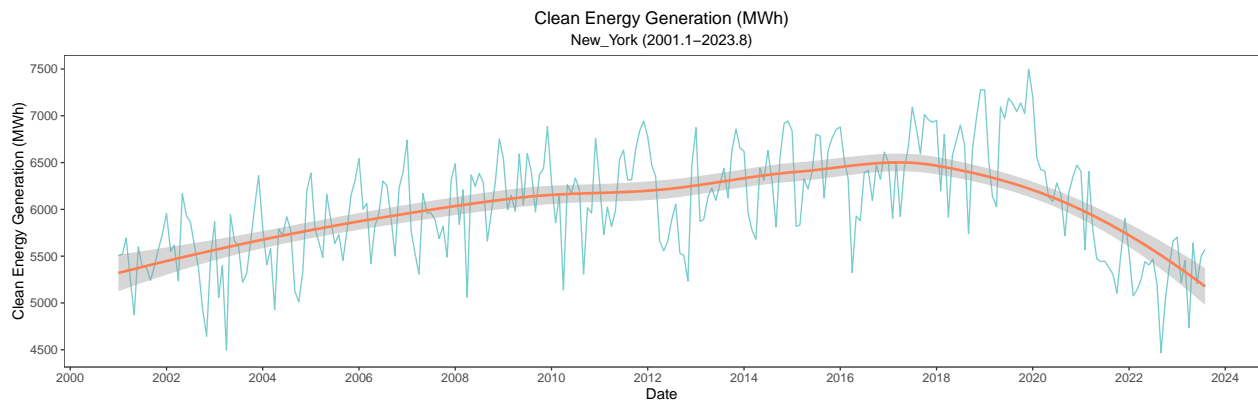
```
## 'geom_smooth()' using formula = 'y ~ x'
```

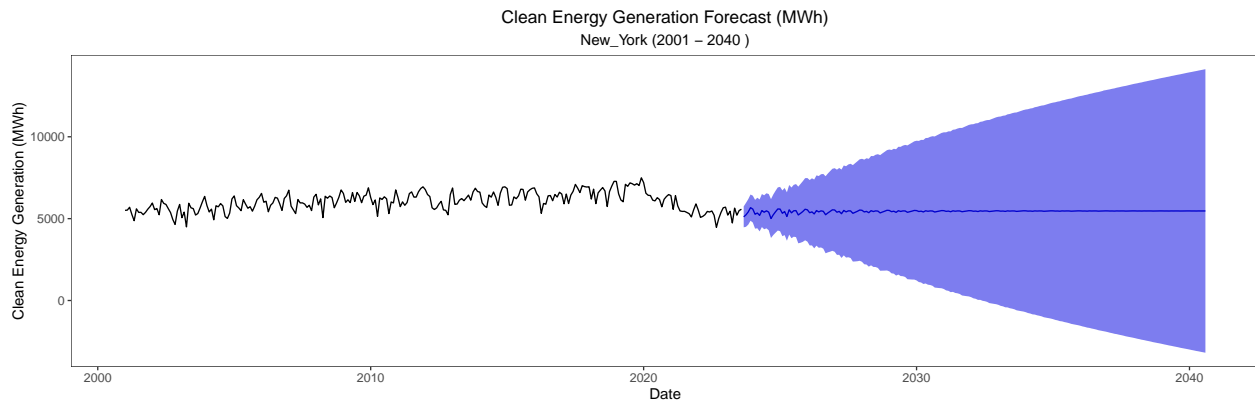


```
## [1] "The forecasted Clean Energy Generation in 2045 is 3075.76318844533"
```

New York

```
## 'geom_smooth()' using formula = 'y ~ x'
```

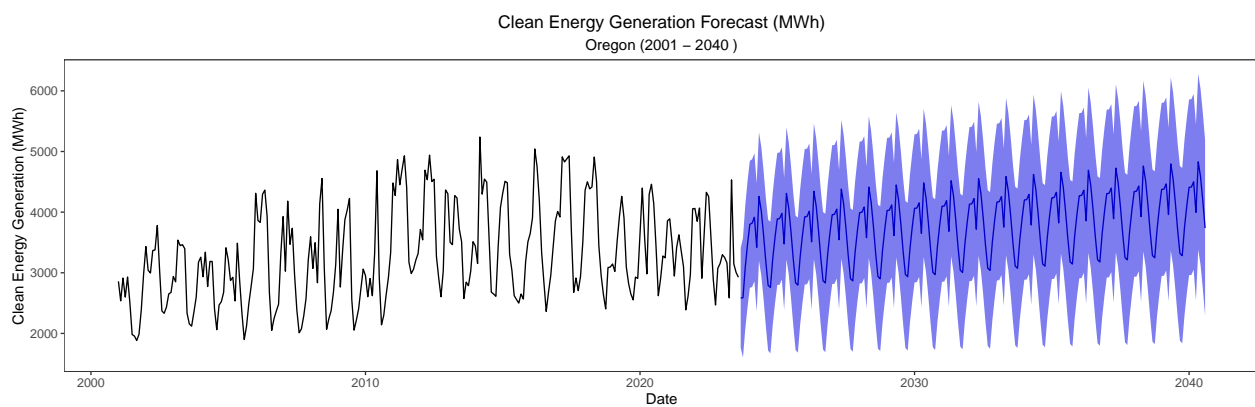
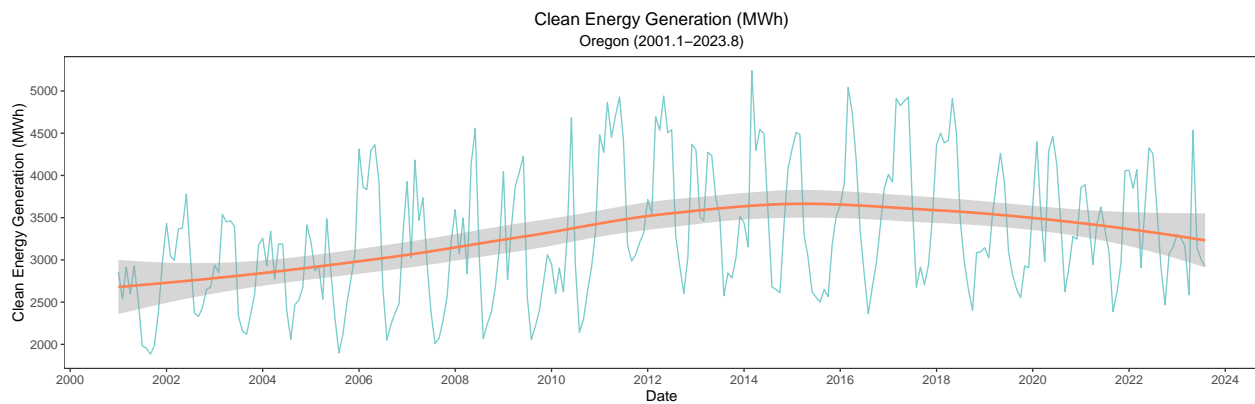




```
## [1] "The forecasted Clean Energy Generation in 2040 is 5469.70779208624"
```

Oregon

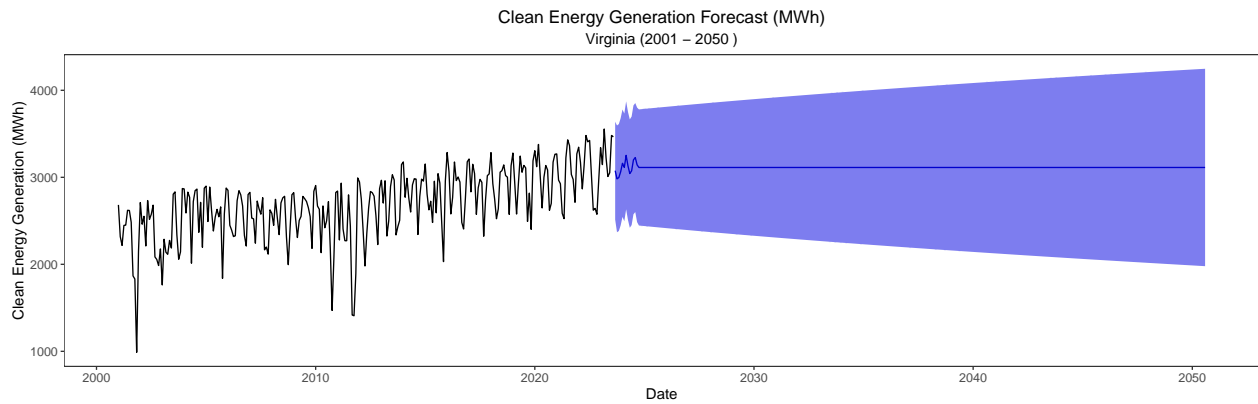
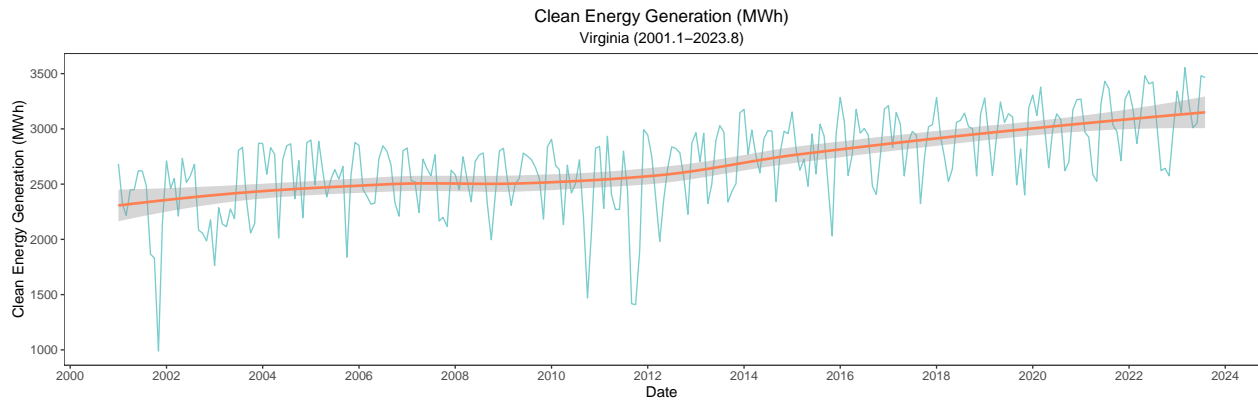
```
## 'geom_smooth()' using formula = 'y ~ x'
```



```
## [1] "The forecasted Clean Energy Generation in 2040 is 3738.60020384354"
```


Virginia

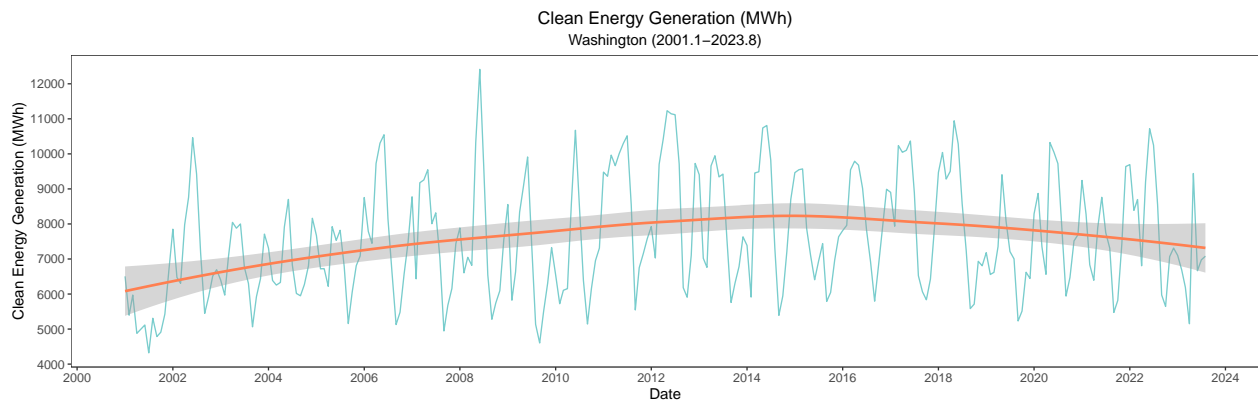
```
## 'geom_smooth()' using formula = 'y ~ x'
```

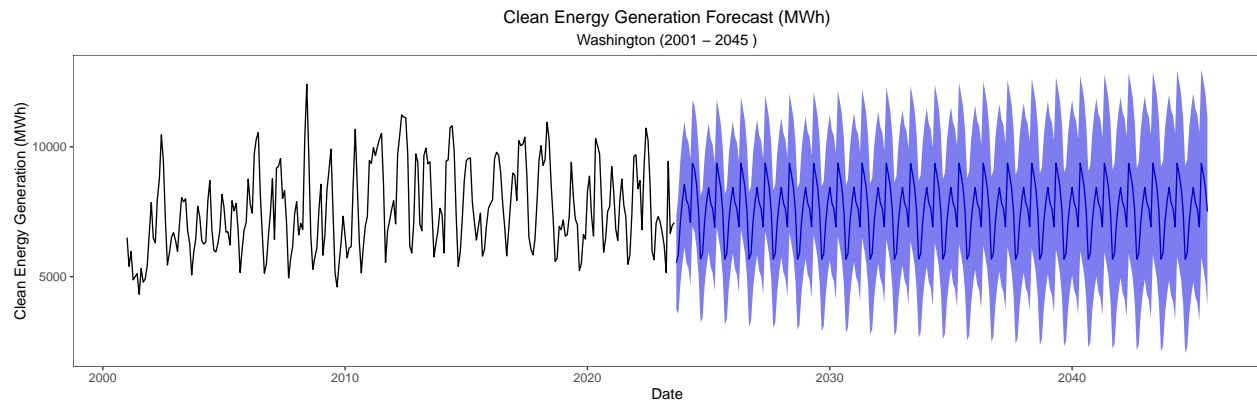


```
## [1] "The forecasted Clean Energy Generation in 2050 is 3113.13667079364"
```

Washington

```
## 'geom_smooth()' using formula = 'y ~ x'
```





```
## [1] "The forecasted Clean Energy Generation in 2045 is 7501.140467237"
```

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.