Carbon Emissions Graph

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```
rm(list = ls())
library("dplyr")
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library("tidyr")
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.0 --

## v ggplot2 3.3.3     v purrr   0.3.4
## v tibble  3.1.0     v stringr 1.4.0
## v readr   1.4.0     v forcats 0.5.1

## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
carbon <- read.csv("carbon-monitor-US.csv")
```

```
#remove rows with NA
carbon <- na.omit(carbon)

#remove country column
carbon$country...group.of.countries = NULL

head(carbon)
```

```
##         date sector MtCO2.per.day
## 1 01/01/2019  Power      3.962845
## 2 02/01/2019  Power      4.617279
## 3 03/01/2019  Power      4.444041
## 4 04/01/2019  Power      4.352839
## 5 05/01/2019  Power      4.027248
## 6 06/01/2019  Power      3.444597
```

```
#modify dates
carbon <- carbon %>%
  mutate(date = as.Date(date, format = "%d/%m/%Y"))
```

Creating graphs

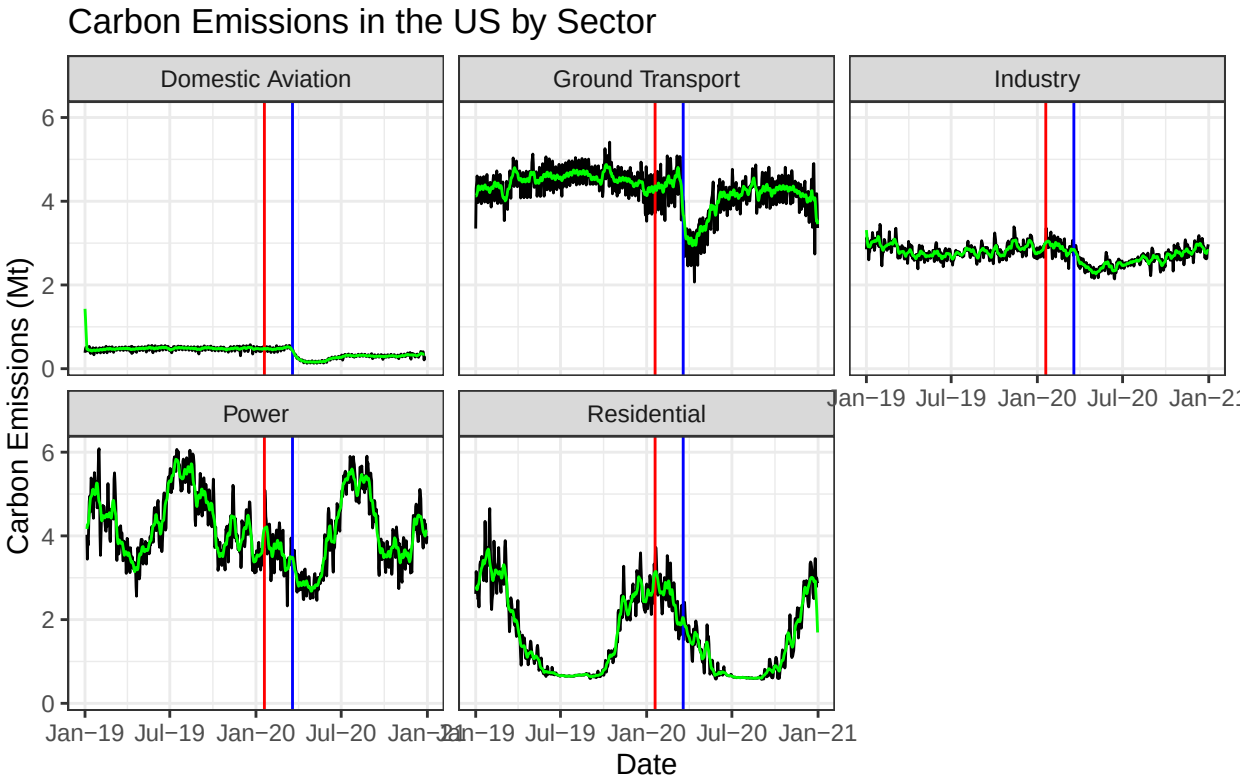
```
library("ggplot2")
library("dplyr")
library("dslabs")
library("readr")
library("zoo")
```

```
##
## Attaching package: 'zoo'
```

```
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
```

```
theme_set(theme_bw())
```

```
carbon$roll7 = rollmean(carbon$MtCO2.per.day, 10, na.pad=TRUE)
carbon <- carbon %>%
  na.omit()
plot <- ggplot(carbon, aes(x = date, y = MtCO2.per.day)) +
  geom_line()+
  ggtitle("Carbon Emissions in the US by Sector")+
  labs(x = "Date",y = "Carbon Emissions (Mt)", caption = "Red line indicates date of first covid outbrea
  geom_vline(xintercept =as.Date("19/01/2020","%d/%m/%Y"), color = "red", linetype = "solid")+
  geom_vline(xintercept =as.Date("19/03/2020","%d/%m/%Y"), color = "blue", linetype = "solid")  +
  facet_wrap(~sector)+
  geom_line(aes(y=roll7), col = "green")+scale_x_date(date_labels = "%b-%y")
plot
```



Red line indicates date of first covid outbreak in the US (Janarary 19th, 2020)
Blue line indicates date of first stay−at−home order goes into effect (March 19th, 2020)