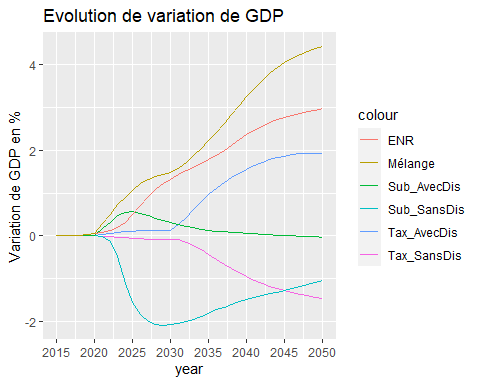
Projet ThreeME

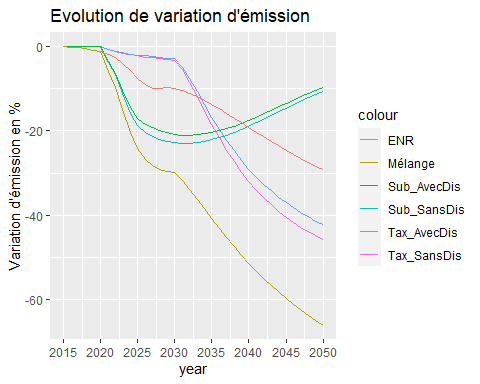
##   
## Attachement du package : 'dplyr'

## Les objets suivants sont masqués depuis 'package:stats':  
##   
## filter, lag

## Les objets suivants sont masqués depuis 'package:base':  
##   
## intersect, setdiff, setequal, union

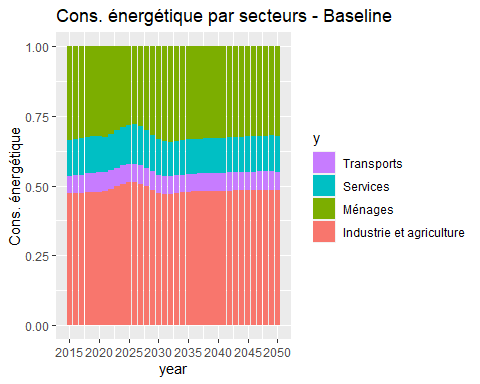
# I. Générale

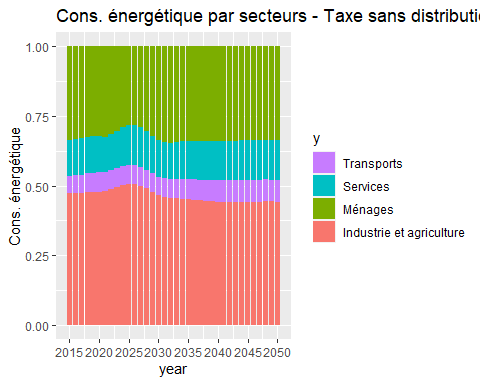


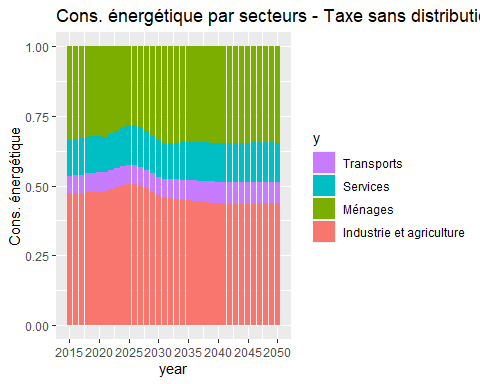


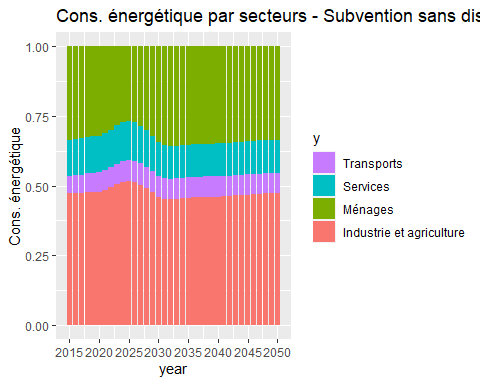
# II. Energie

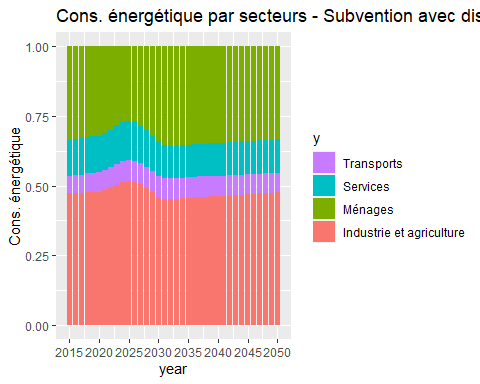
## A. Consommation énergétique par secteurs

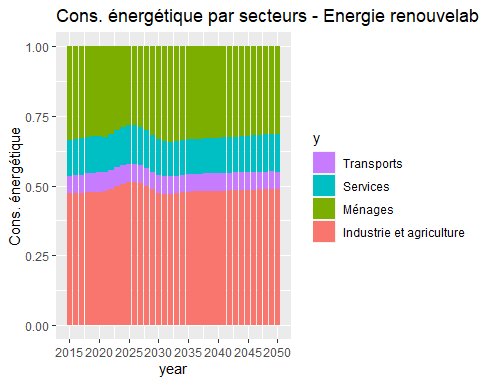


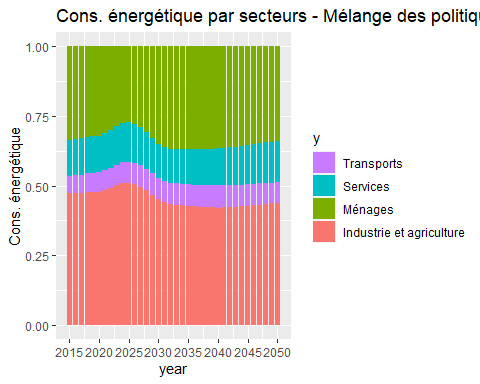




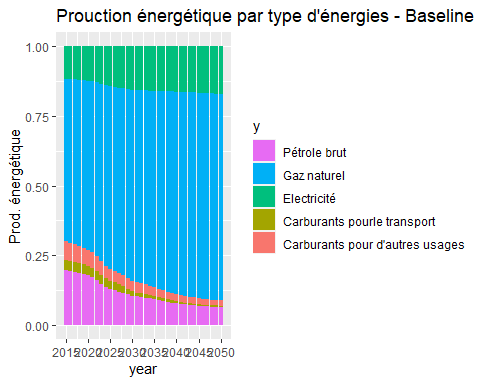


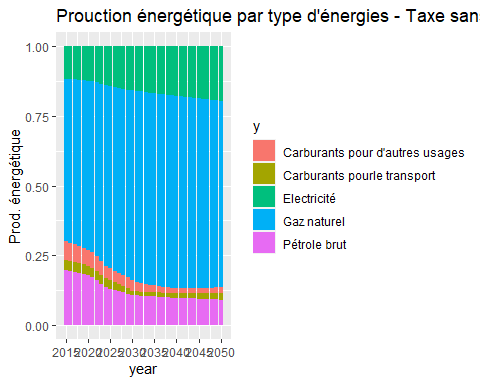


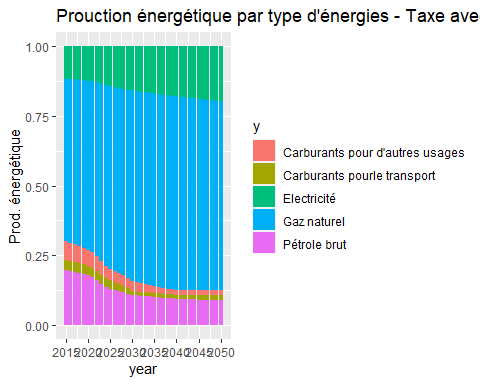


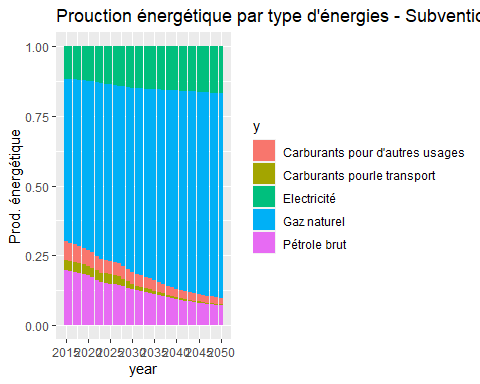


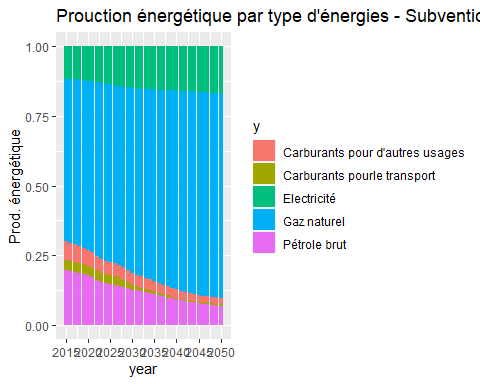
## B. Production énergétique par énergies

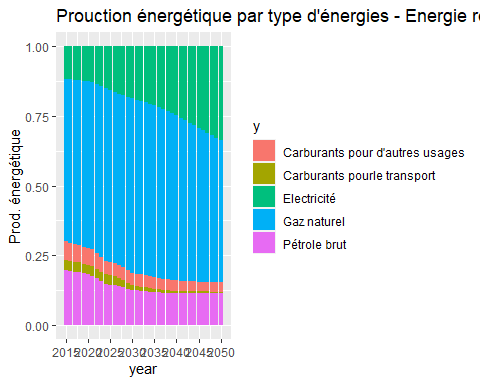


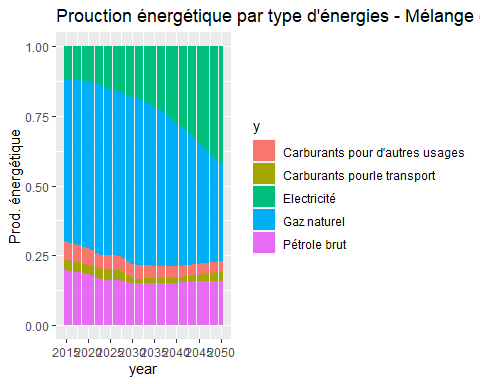




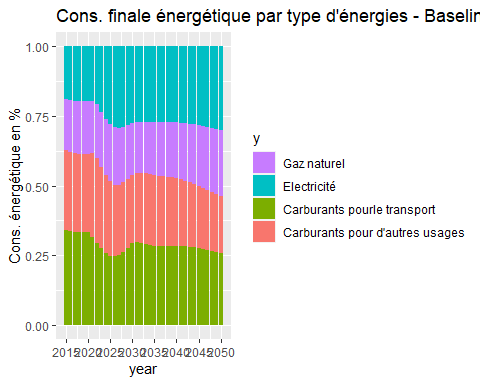


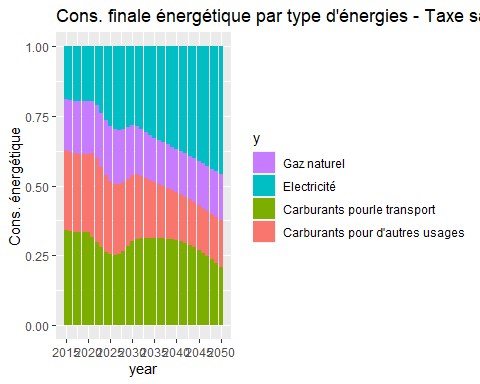


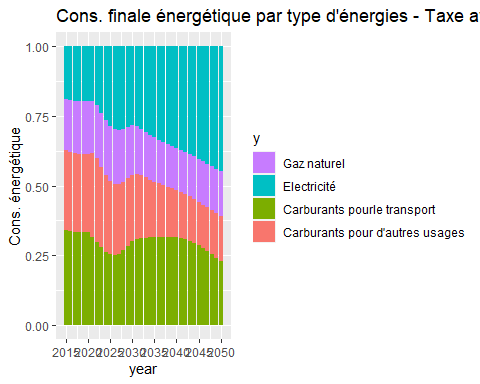


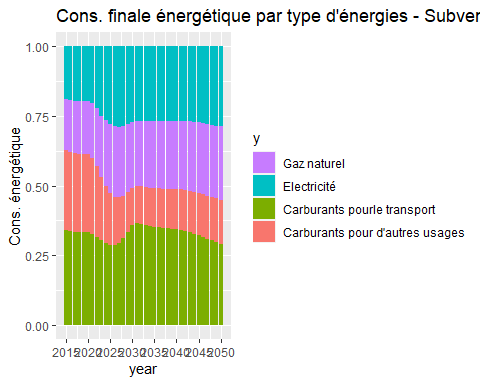


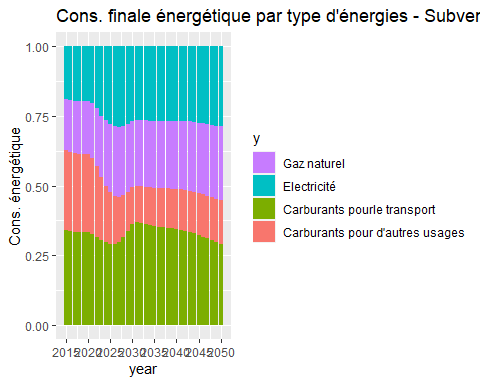
## C. Consommation finale énergétique par énergies

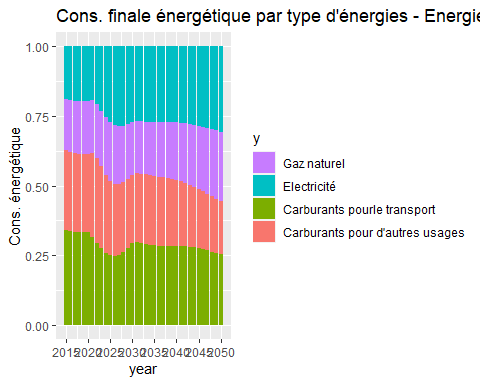


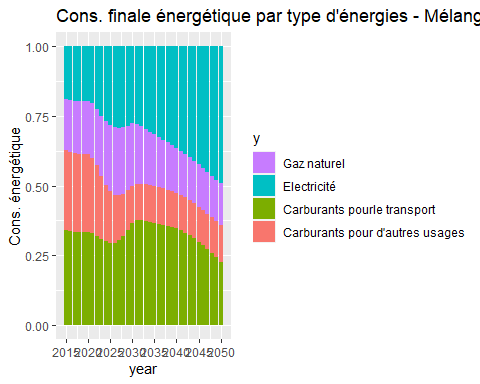












# III. Analyse d’identité Kaya

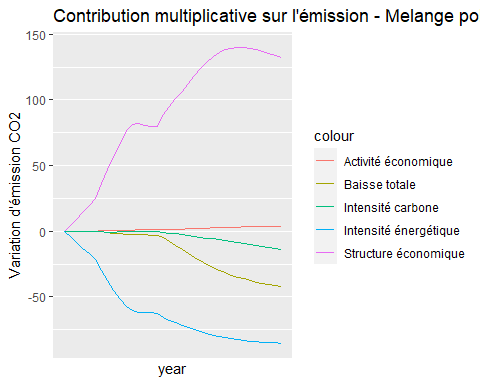
On a modifié l’identité de Kaya pour qu’elle soit plus cohérente avec notre étude:

où, VA est la valeur ajoutée totale dans l’économie, est la valeur ajoutée dans secteur , est la consommation énergétique dans secteur , est l’émission de dans secteur . On a alors 4 indicateurs qui servent à expliquer la variation d’émission de : , , sont, respectivement, la structure écnomique, l’intensité énergétique et l’intensité carbone.

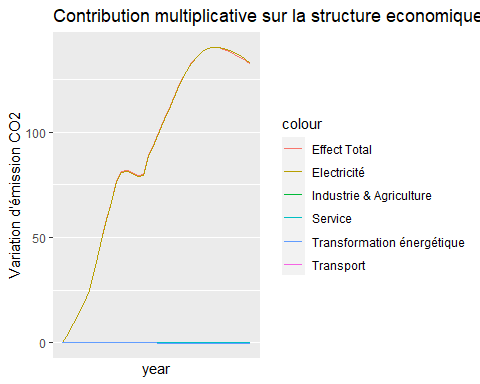
# Decomposition multiplicative  
  
name <- c("D1","D2","D3","D4","D5","D6")  
secteur <- c("ems\_ci\_co2\_ind\_2","ems\_ci\_co2\_trsp\_2","ems\_ci\_co2\_ser\_2","ems\_ci\_co2\_trsf\_2","ems\_ci\_co2\_ele\_2")  
secteur0 <- c("ems\_ci\_co2\_ind\_0","ems\_ci\_co2\_trsp\_0","ems\_ci\_co2\_ser\_0","ems\_ci\_co2\_trsf\_0","ems\_ci\_co2\_ele\_0")  
kayaname <- c("S\_ind","S\_trsp","S\_ser","S\_trsf","S\_ele","I\_ind","I\_trsp","I\_ser","I\_trsf","I\_ele","U\_ind","U\_trsp","U\_ser","U\_trsf","U\_ele","VA","ind","trsp","ser","trsf","ele","S","I","U")  
  
for (i in 1:6) {  
   
 w <- as.data.frame(array(,dim=c(36,16)))  
 for (j in 1:5) {  
 w[,c(j,j+5,j+10)] <- ((DataBase[[i]][,secteur[j]]-Baseline[,secteur0[j]])/  
 log(DataBase[[i]][,secteur[j]]/Baseline[,secteur0[j]]))/  
 ((DataBase[[i]][,"ems\_ci\_co2\_2"] - Baseline[,"ems\_ci\_co2\_0"])/  
 log(DataBase[[i]][,"ems\_ci\_co2\_2"]/Baseline[,"ems\_ci\_co2\_0"]))  
 }  
 w[,16] <- w[,1]+ w[,2]+ w[,3]+ w[,4]+ w[,5]  
 data <- exp(w\*log(Kaya\_Base[[i]]/KAYA\_Baseline))  
 data <- rapply( data, f=function(x) ifelse(is.nan(x),1,x), how="replace" )  
   
 for (k in 1:8) {  
 if (k < 6) {  
 data <- data %>% add\_column(newColname = data[,k] \* data[,k+5] \* data[,k+10])   
 }  
 else if (k == 6) {  
 data <- data %>% add\_column(newColname = data[,k-5]\*data[,k-4]\*data[,k-3]\*data[,k-2]\*data[,k-1])   
 }  
 else if (k == 7) {  
 data <- data %>% add\_column(newColname = data[,k-1]\*data[,k]\*data[,k+1]\*data[,k+2]\*data[,k+3])   
 }  
 else if (k == 8) {  
 data <- data %>% add\_column(newColname = data[,k+3]\*data[,k+4]\*data[,k+5]\*data[,k+6]\*data[,k+7])   
 }  
 }  
   
 colnames(data) <- kayaname  
 data$year <- c(2015:2050)  
 data <- (data - 1) \* 100  
 jin <- name[i]  
 assign(jin,data)  
}  
  
Det <- list(D1,D2,D3,D4,D5,D6)  
  
rm(i,j,jin,name,kayaname,secteur,secteur0,w,data,D1,D2,D3,D4,D5,D6)

# Decomposition additive  
name <- c("D1","D2","D3","D4","D5","D6")  
secteur <- c("ems\_ci\_co2\_ind\_2","ems\_ci\_co2\_trsp\_2","ems\_ci\_co2\_ser\_2","ems\_ci\_co2\_trsf\_2","ems\_ci\_co2\_ele\_2")  
secteur0 <- c("ems\_ci\_co2\_ind\_0","ems\_ci\_co2\_trsp\_0","ems\_ci\_co2\_ser\_0","ems\_ci\_co2\_trsf\_0","ems\_ci\_co2\_ele\_0")  
kayaname <- c("S\_ind","S\_trsp","S\_ser","S\_trsf","S\_ele","I\_ind","I\_trsp","I\_ser","I\_trsf","I\_ele","U\_ind","U\_trsp","U\_ser","U\_trsf","U\_ele","VA","ind","trsp","ser","trsf","ele","S","I","U")  
  
for (i in 1:6) {  
   
 w <- as.data.frame(array(,dim=c(36,16)))  
   
 for (j in 1:5) {  
 w[,c(j,j+5,j+10)] <- (DataBase[[i]][,secteur[j]]-Baseline[,secteur0[j]])/  
 log(DataBase[[i]][,secteur[j]]/Baseline[,secteur0[j]])  
 }  
   
 w[,16] <- w[,1]+ w[,2]+ w[,3]+ w[,4]+ w[,5]  
 data <- w\*log(Kaya\_Base[[i]]/KAYA\_Baseline)  
 data <- rapply( data, f=function(x) ifelse(is.nan(x),0,x), how="replace" )  
   
 for (k in 1:8) {  
 if (k < 6) {  
 data <- data %>% add\_column(newColname = data[,k] + data[,k+5] + data[,k+10])   
 }  
 else if (k == 6) {  
 data <- data %>% add\_column(newColname = data[,k-5]+data[,k-4]+data[,k-3]+data[,k-2]+data[,k-1])   
 }  
 else if (k == 7) {  
 data <- data %>% add\_column(newColname = data[,k-1]+data[,k]+data[,k+1]+data[,k+2]+data[,k+3])   
 }  
 else if (k == 8) {  
 data <- data %>% add\_column(newColname = data[,k+3]+data[,k+4]+data[,k+5]+data[,k+6]+data[,k+7])   
 }  
 }  
   
 colnames(data) <- kayaname  
 data$year <- c(2015:2050)  
 jin <- name[i]  
 assign(jin,data)  
}  
  
Dif <- list(D1,D2,D3,D4,D5,D6)  
  
rm(i,j,jin,name,secteur,secteur0,w,data,D1,D2,D3,D4,D5,D6)

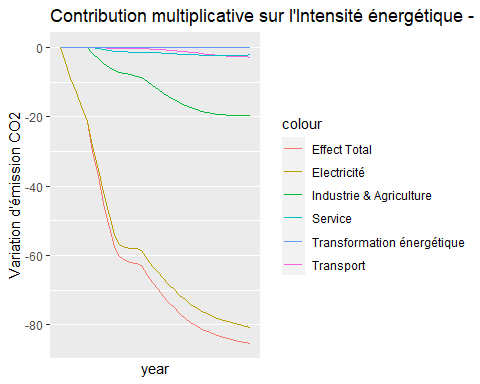
ggplot() +   
 geom\_line( aes(x = Det[[1]][,"year"],y = S1[,"ems\_ci\_co2\_2"]/Baseline[,"ems\_ci\_co2\_0"]\*100 - 100, group = 1, color = "Baisse totale")) +   
 geom\_line( aes(x = Det[[1]][,"year"],y = Det[[6]][,"VA"], group = 1, color = "Activité économique")) +   
 geom\_line( aes(x = Det[[1]][,"year"],y = Det[[6]][,"U"], group = 1, color = "Intensité carbone")) +   
 geom\_line( aes(x = Det[[1]][,"year"],y = Det[[6]][,"S"], group = 1, color = "Structure économique")) +   
 geom\_line( aes(x = Det[[1]][,"year"],y = Det[[6]][,"I"], group = 1, color = "Intensité énergétique")) +   
 labs(x = "year", y = "Variation d'émission CO2", title = "Contribution multiplicative sur l'émission - Melange politique") +  
 scale\_x\_continuous(breaks=seq(2015,2050,5))



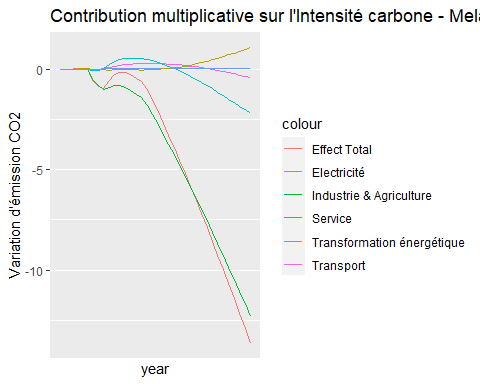
ggplot() +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"S"], group = 1, color = "Effect Total")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"S\_ind"], group = 1, color = "Industrie & Agriculture")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"S\_trsp"], group = 1, color = "Transport")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"S\_ser"], group = 1, color = "Service")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"S\_trsf"], group = 1, color = "Transformation énergétique")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"S\_ele"], group = 1, color = "Electricité")) +  
 labs(x = "year", y = "Variation d'émission CO2", title = "Contribution multiplicative sur la structure economique Melange politique") +   
 scale\_x\_continuous(breaks=seq(2015,2050,5))

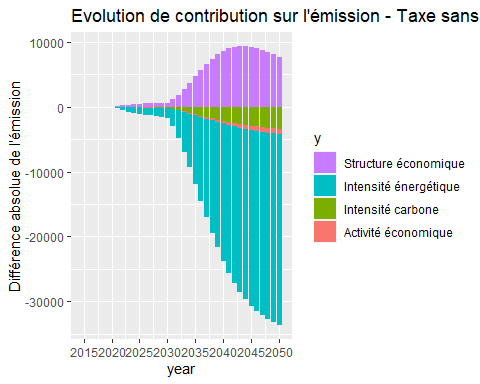


ggplot() +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"I"], group = 1, color = "Effect Total")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"I\_ind"], group = 1, color = "Industrie & Agriculture")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"I\_trsp"], group = 1, color = "Transport")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"I\_ser"], group = 1, color = "Service")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"I\_trsf"], group = 1, color = "Transformation énergétique")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"I\_ele"], group = 1, color = "Electricité")) +  
 labs(x = "year", y = "Variation d'émission CO2", title = "Contribution multiplicative sur l'Intensité énergétique - Melange politique") +   
 scale\_x\_continuous(breaks=seq(2015,2050,5))



ggplot() +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"U"], group = 1, color = "Effect Total")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"U\_ind"], group = 1, color = "Industrie & Agriculture")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"U\_trsp"], group = 1, color = "Transport")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"U\_ser"], group = 1, color = "Service")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"U\_trsf"], group = 1, color = "Transformation énergétique")) +   
 geom\_line( aes(x = Det[[5]][,"year"],y = Det[[6]][,"U\_ele"], group = 1, color = "Electricité")) +  
 labs(x = "year", y = "Variation d'émission CO2", title = "Contribution multiplicative sur l'Intensité carbone - Melange politique") +   
 scale\_x\_continuous(breaks=seq(2015,2050,5))





# IV. Economie

sheet\_names <- excel\_sheets("Page Macro.xlsx")  
nb\_sheets <- length(sheet\_names)  
for (i in 1:nb\_sheets){   
 name <- sheet\_names[i]   
 name2 <- paste0(name,"\_Macro")   
 data <- read\_excel("Page Macro.xlsx", sheet = i)   
 data <- column\_to\_rownames(data, var = '\_date\_')  
 colnames(data) <- c(2015:2050)  
 data <- data.frame(t(data))  
 data$year <- c(2015:2050)  
 assign(name2,data)  
 rm(name,name2,data)  
}

