EDA

Allan

2023-06-14

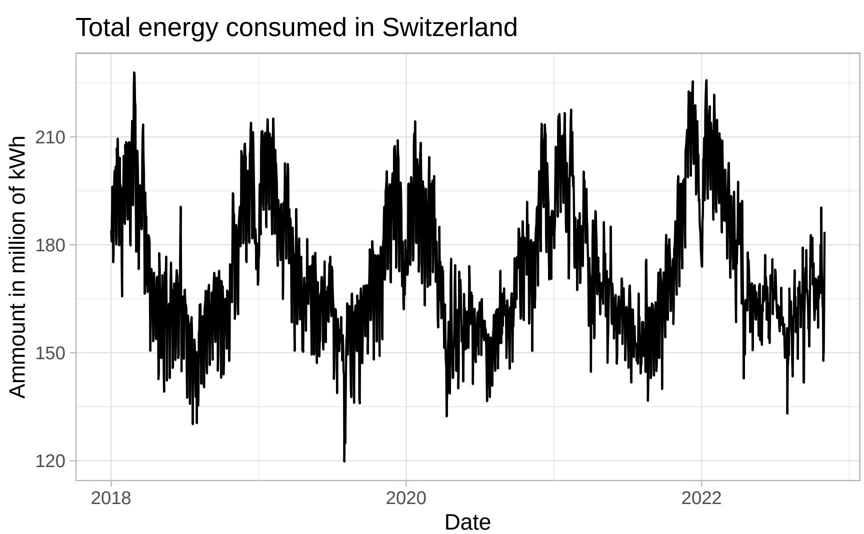
Contents

The Data we have :

time	end_users_cons	energy_prod	energy_cons	pos_second	neg_second	pos_tertiary	neg_tertiary
2015-01-01 00:15:00	1790683	1697772	1922526	37500	0	0	0
2015-01-01 00:30:00	1777126	1686388	1907138	22200	0	0	0
2015-01-01 00:45:00	1807976	1724777	1940146	36100	0	0	0
2015-01-01 01:00:00	1784944	1690007	1918599	16400	0	0	0
2015-01-01 01:15:00	1813997	1681642	1954830	52700	0	0	0

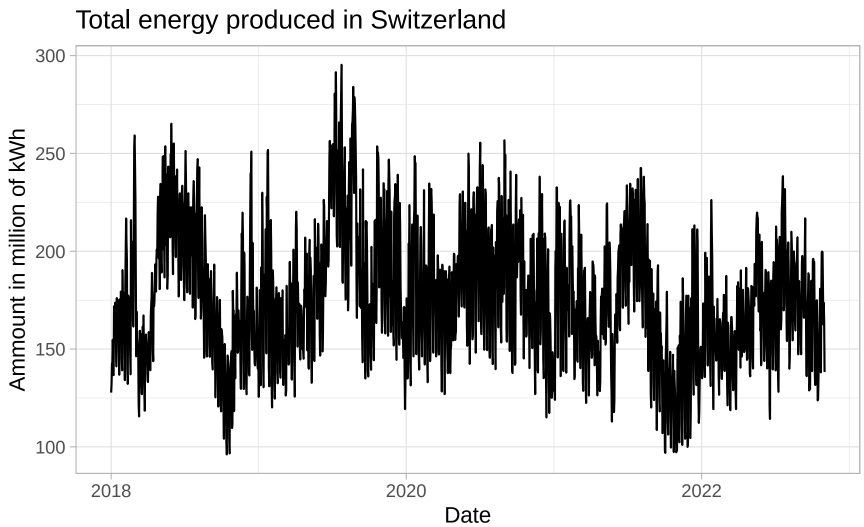
Quick overlook :

Dayly Consumption in Million



-> Strong seasonlity, no obvious trend -> seems to have diffent level of seasonility but hard to get due to the scope

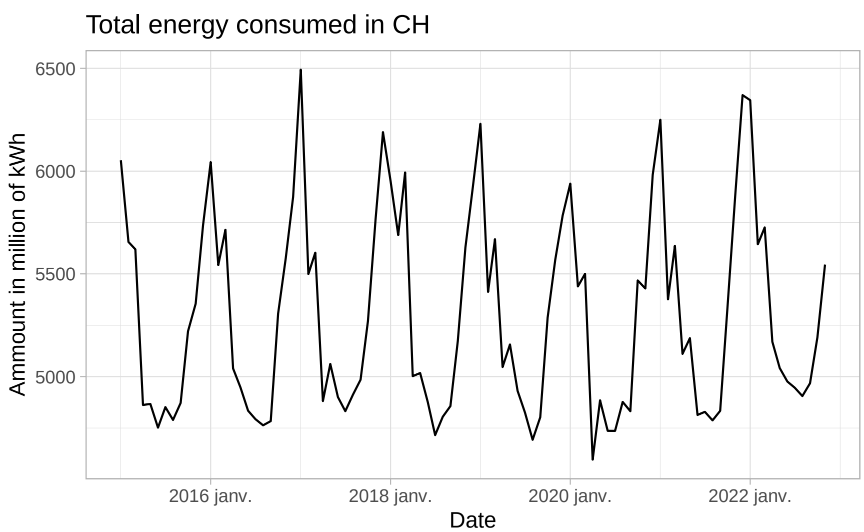
Dayly Production



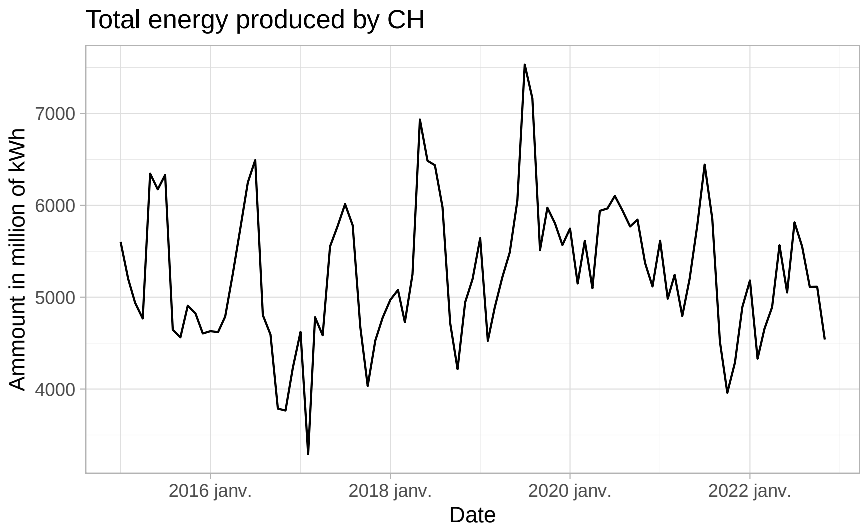
-> also Strong seasonlity, no obvious trend but more messy -> seems to have diffent level of seasonility but hard to get due to the scope

Zoom in to see the monthly seasonality

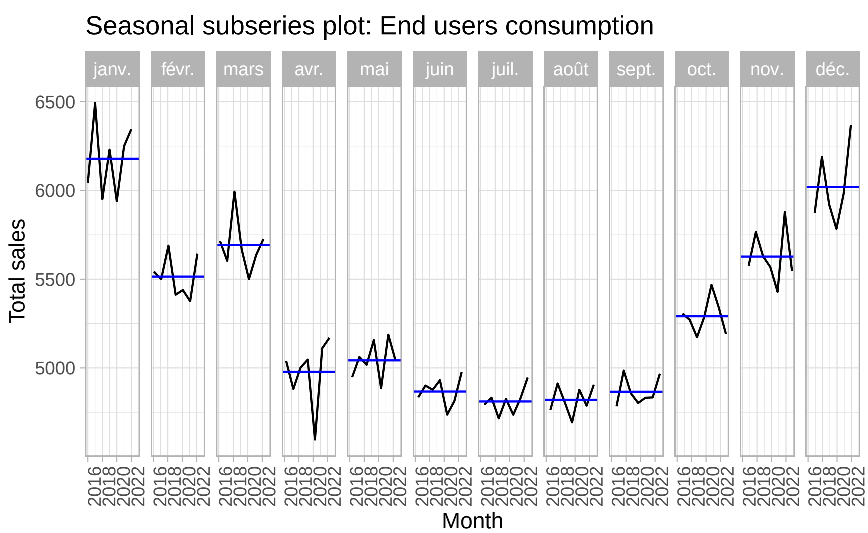
Monthly



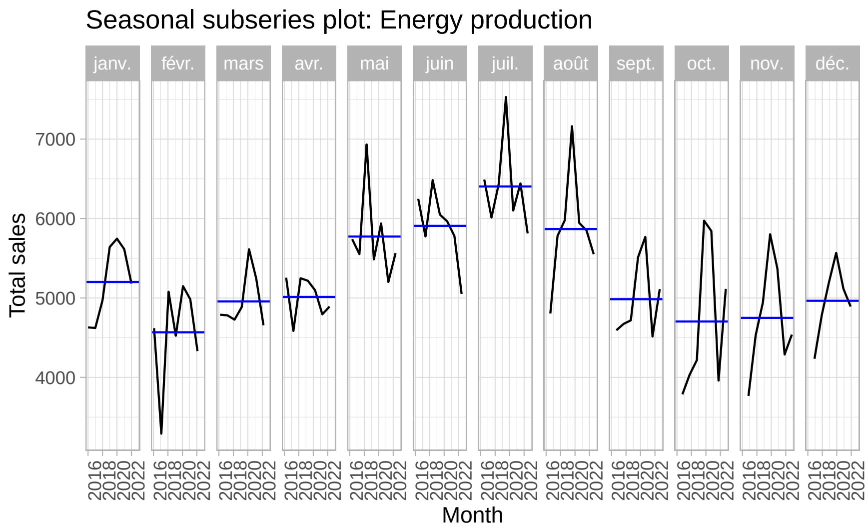
Strong seasonality, no trend, peaks in Winter, lowest in sommer



opposite of consumption, Strong seasonality, no trend, peaks in Summer, lowest in winter

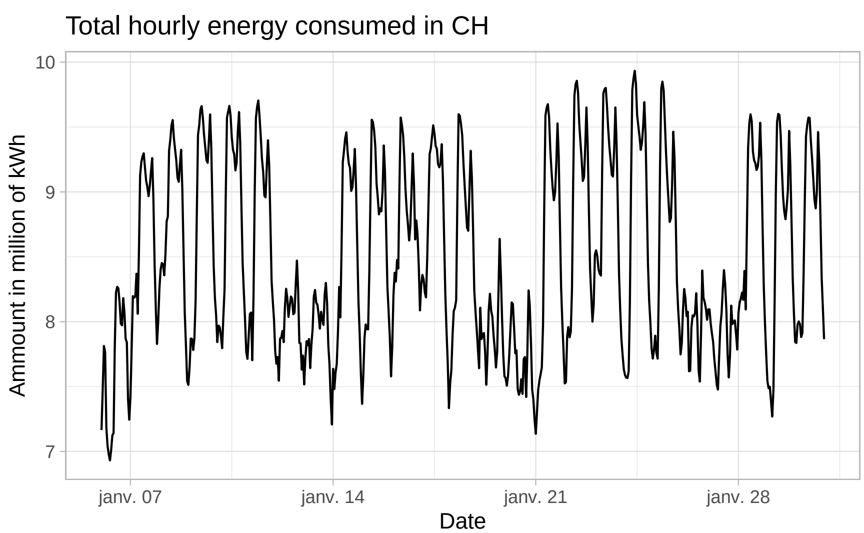


Better view that confirmed what we previous said for consumption

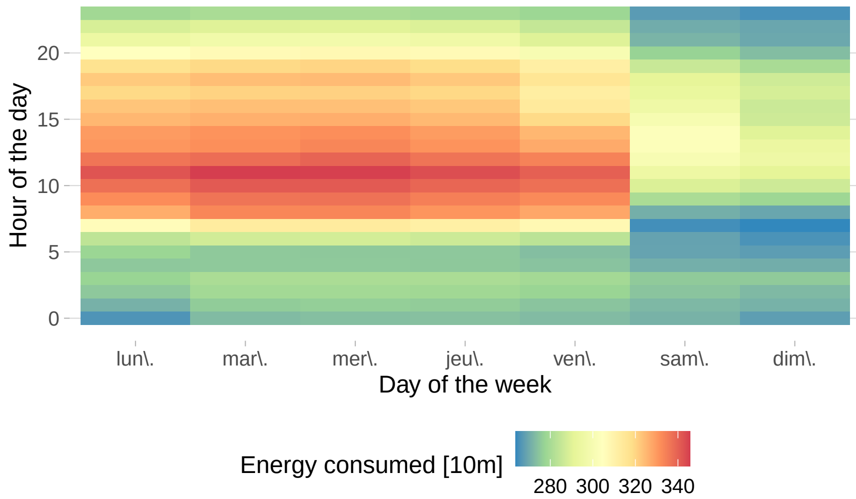


Better view that confirmed what we previous said for prodcution

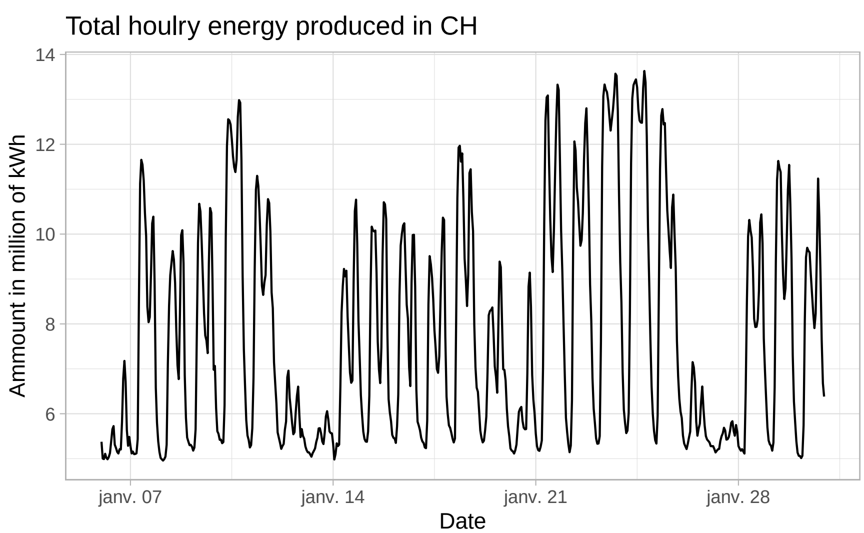
Zoom in to see the weekly seasonality



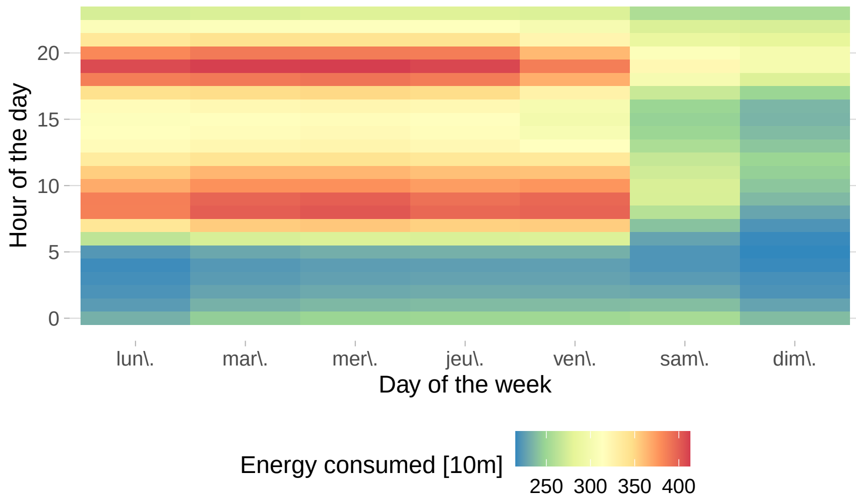
We can see here both weelky and daily seasonlaty : With peaks during days (morning and end of afternoon) and during week with higher volume on weekday (no significant difference among days themselves)



Trend is generalized through the whole period, peaks around noon

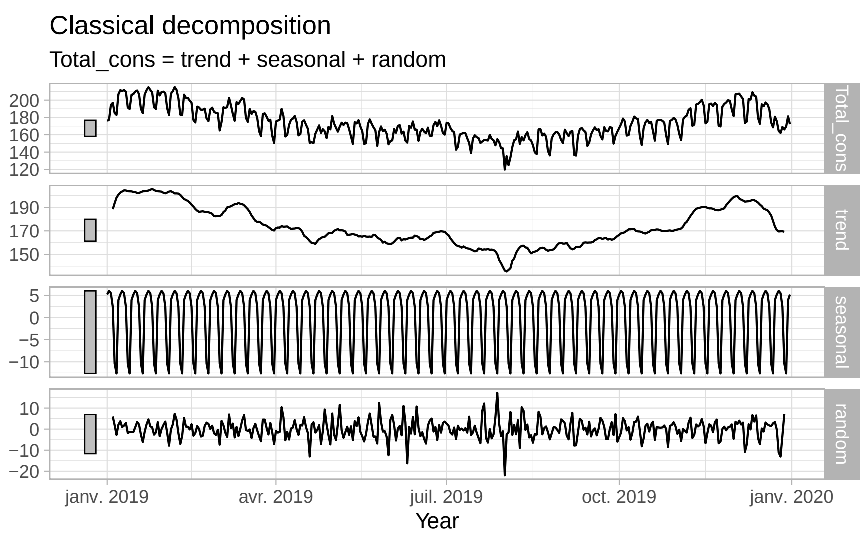


same conclusion as consumption

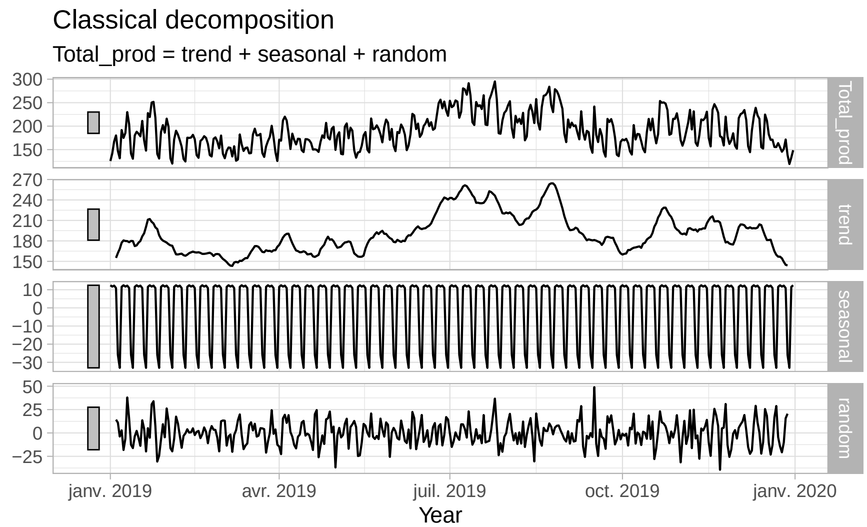


Trend is generalized through the whole period, peaks around 9am and 7pm, almost 0 prod btw 0 and 5 am -> noise and poeple aint working

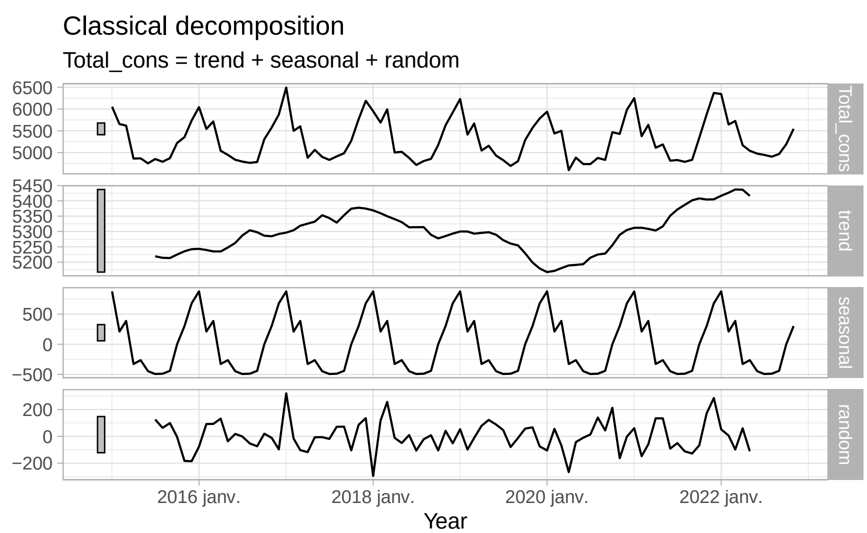
We can now build the stl decomp with additive paramater due to no change over time in the seasonlity :



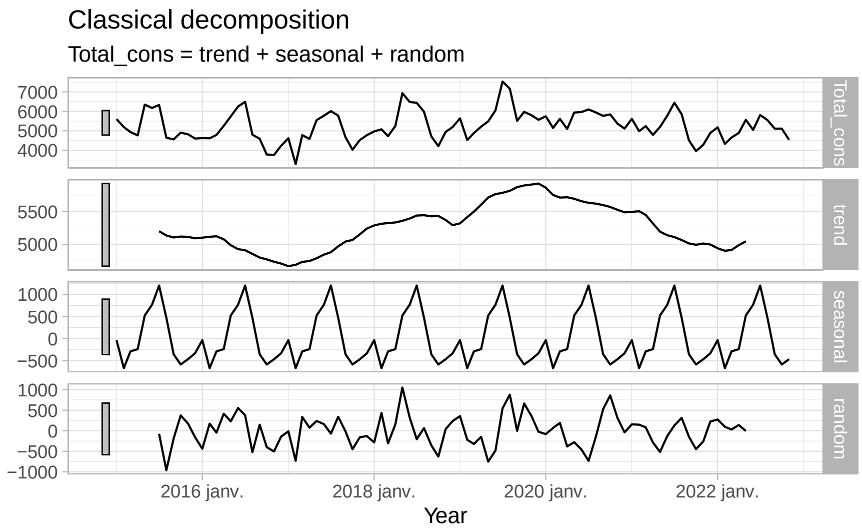
We reduce the scope to a year the have a better a view of the data, we have shown that seasonality was constant over the year. also show us the weekly seasonality



Same for production

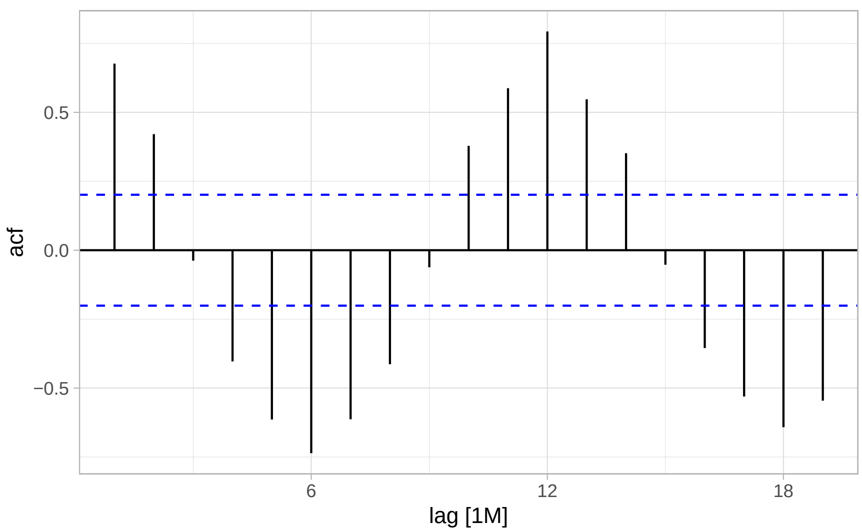


Monthly seasonality for cons

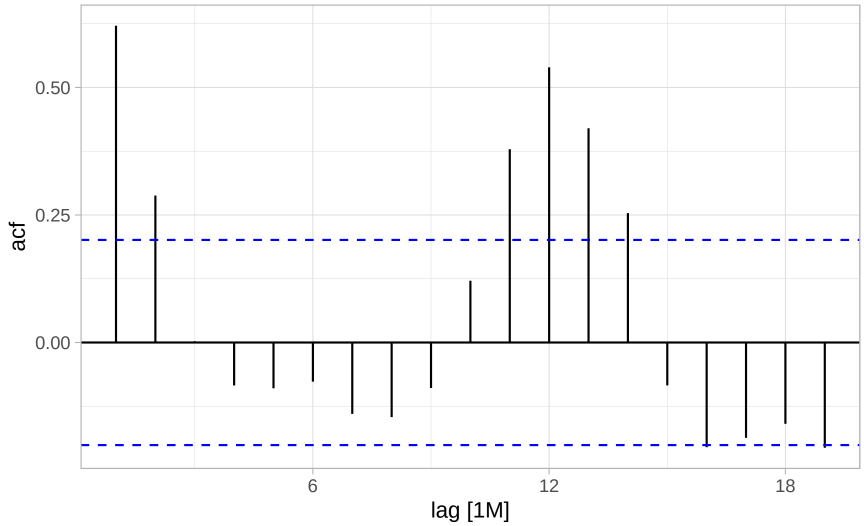


Monthly seasonality for prod

Let's have a look at the residuals :

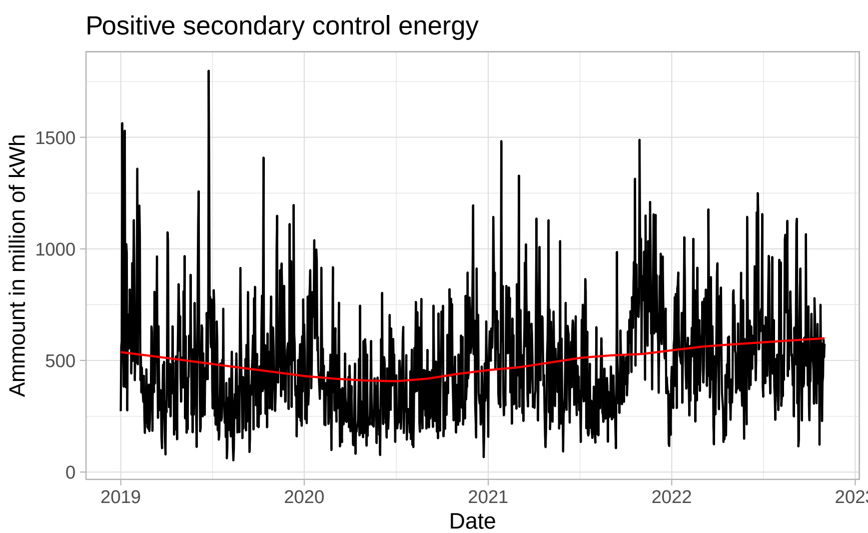


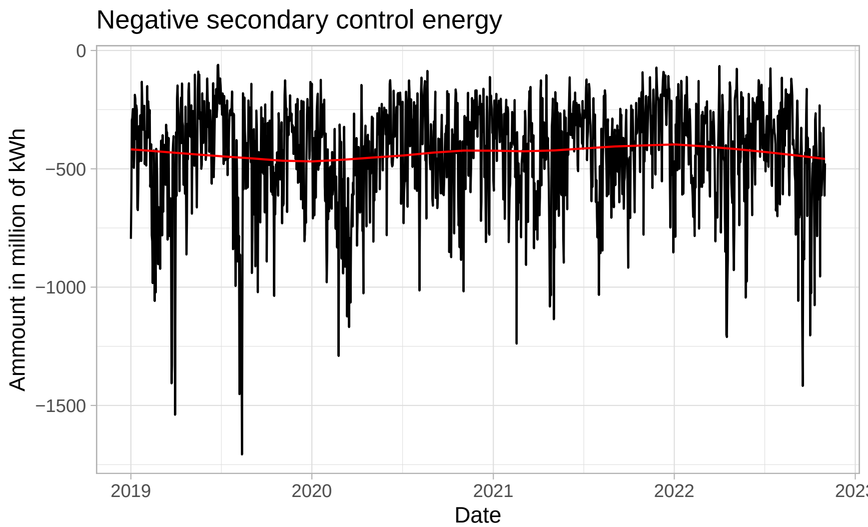
for cons



for prod

Positive and Negative Secondary control with trend





Positive and Negative Tertiary control with trend