1 Introduction

This part shows the GPW minimum reachable with actual available resources in Switzerland while minimizing the $TOTEX$. The optimizer is able to compute scenarios until a GWP_{min} at $7693.00 ktCO_2/y$ for which the $TOTEX$ is $30224.95 MCHF/y$. This represents a GWP improvement of X% to the detriment of the $TOTEX$ which increases of Y%. In this scenario, nuclear power and Natural gas CCS take a prominent place. Renewable energies like Geothermal, wind, and solar grow. However, if Switzerland wishes to abandon its nuclear power plants, it can then go down to a GWP of $10422.00 ktCO_2/y$ replacing this lack of energy with Natural gas CCS. In this case, as Natural gas CCS is more expensive than nuclear, the $TOTEX$ reaches $27262.40 MCHF/y$.
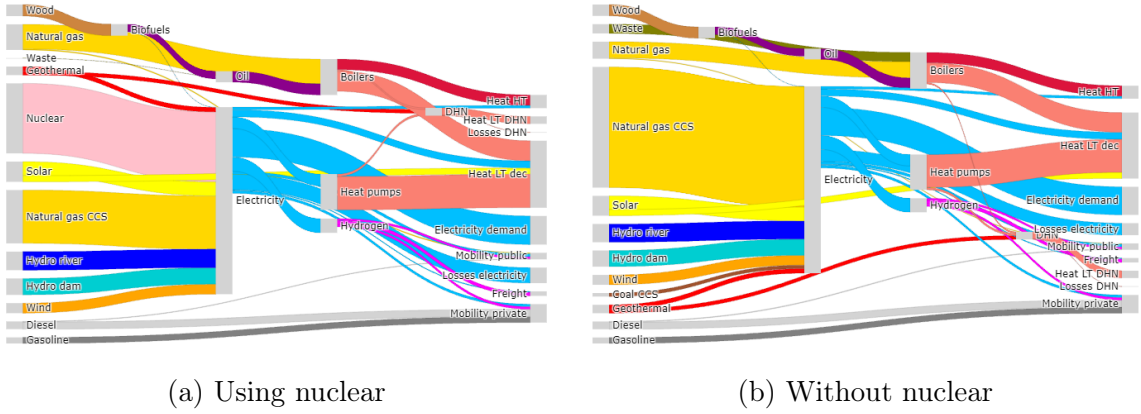

(a) Using nuclear   (b) Without nuclear

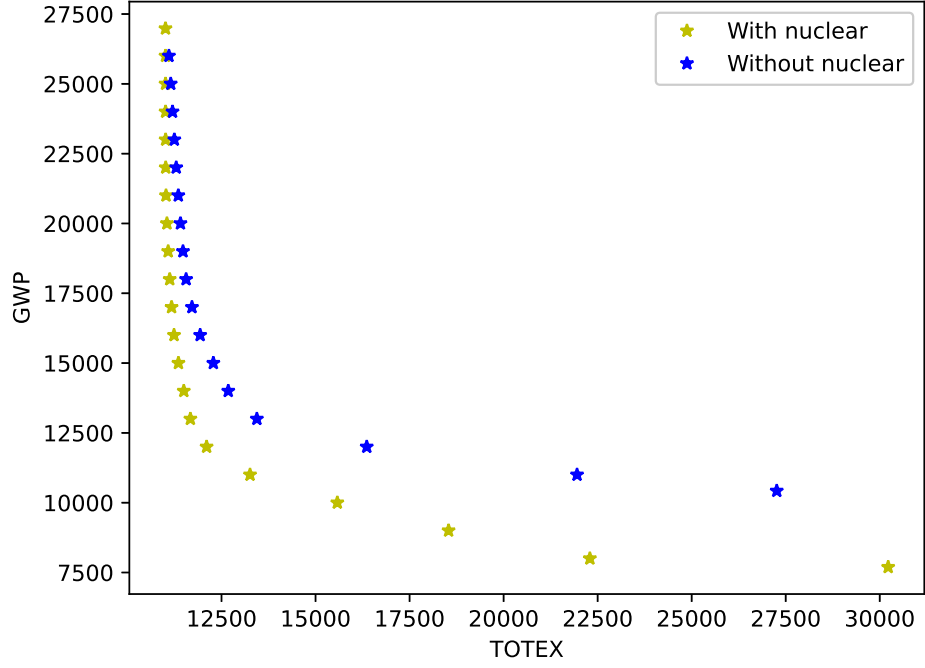Figure 1: Sankey diagrams of power repartition with the GWP_{min}

Figure 2: caption

Figure 1 show the division of energies computing with those GWP_{min}. Figure 2 represent the evolution of the $TOTEX$ with different GWP objective. It shows that wanting to reach the GWP_{min} is not a good solution. Indeed, $TOTEX$ grows exponentially. It, therefore, makes sense to choose a GWP higher than the GWP_{min}.