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Impact of electric mobility

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Electric vehicles (EVs) have the potential to bring environmental, supply security and socio-economic benefits. However, they may also have negative impacts. For example, they could lead to an in increase CO_2 emissions in case of a high share of coal in the electricity mix, or a reduction in employment, since EVs require less maintenance than gasoline vehicles. They can also haver an impact on the electric grid related to a possible increase of peak power demand. The overall impact of EV penetration is highly context dependent, and should be assessed within a comprehensive framework. In this lecture, we will discuss the overall economic and environmental performance of EVs and compare these to both incumbent ICE technologies and alternative novel technologies such as fuel cell vehicles. We will also discuss the global EV market and the reason why the EV penetration differs widely between regions. This will lead us to determine the socio-economic barriers to deployment.

Bio: Dr. François Vuille
François is Director Development at the Energy Center of the Ecole Polytechnique Fédérale de Lausanne (EPFL), where he acts as business developer, research catalyst and lecturer. He holds an MSc. in physics, an MSc in Energy Engineering, and a PhD in Astrophysics.

François is a founder of technologies start-ups Softcar that develops advanced electric vehicles and Proxipel, a company that develops innovative biomass conversion technology.

François sits as expert in several official Swiss government commissions related to energy as well as in an expert group of the Swiss Academies of sciences. He is lead author of two major reports commissioned by the International Energy Agency (IEA), is author or co-author on over 30 scientific publications and journal articles, and lead author of two books on the energy transition.