We seek to reply to this unprecedented social, economic, environmental, and technological challenge with our call for the Special Issue of *Energies* on ways in which the countryside, and especially the peripheral countryside, and its population could benefit when gradually transformed and regenerated according to green and low-carbon principles. We are primarily interested in social and spatial processes that occur around the occurrence of renewable energy projects, low-carbon regeneration of brownfield sites in the countryside, and agricultural restructuring. We are also keen to learn more about the spreading of innovations in rural conditions and would like to better understand how these innovations are accepted (or refused) by rural populations.

There is no doubt that the transformation of the countryside has to be built on the principles of a green and low-carbon economy, as our future development is highly dependent on our much friendlier behaviour towards the environment.