European Union keeps adopting increasingly stringent regulations and legislations to improve both transport fuels quality and their atmospheric emissions. A new recent European objective, that of progressively reducing crude-derived energy dependency, as well as limiting CO2 emissions, lead to approval of a Community Directive on the promotion of bio-fuels blending into both petrol and gasohol in Europe. Italy can count on several records in the sectors of refining and fuel-ethers manufacturing. These ethers have been proven to be an excellent solution to deliver bio-ethanol into newly formulated European petrol aimed to actually enable the fulfillment of the new “bio” targets. The present paper describes some of the advantages of the use of fuel-ethers, included delivering the prescriptions of the new Italian legislation on bio-fuels.