It is expected that over the next quarter to half century, the energy generation and transportation systems, increasingly powered by distributed renewable energy resources and operated through smart grid technology, will become integrated and indistinguishable from each other as our dependency on petroleum-based fuel is reduced. This presentation will provide an overall review on some research activities conducted at The University of Alabama related to integration of renewable energy, transportation, and smart grid. It will include a discussion of related issues in the five topic areas, which are renewable energy generation characteristics, transportation electrification, power transmission and distribution, electric power market, and computing and communication. In renewable, the focus will be on wind and solar photovoltaic. In transportation, energy storage and electric vehicle charging infrastructure will be discussed. In power transmission and distribution, HVDC, microgrid, and demand response will be emphasized. In power market, the talk will focus on competitive electricity market and bidding strategy evaluation. In computing and communication, big data issues will be examined.