

Energy: the Next Fifty Years

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Energy is undergoing an historic transition, from predominantly fossil to more diverse and sustainable sources including wind, solar, bio-fuels and nuclear which interchangeably serve a variety of uses including transportation, lighting, refrigeration, heating, entertainment, communication and industry. Science and technology lead the energy transition through discovery of new phenomena and development of new technologies for production, storage and use. The next fifty years of energy transition and innovation will be examined from the point of view of societal needs, international relationships, and promising science directions. The roles of electricity, chemical fuels and photons as sustainable and fungible energy carriers will be emphasized.