

SUMMARY OF PRESENTATION

Energy Efficiency Policy and Research Trends towards a Global Clean Energy Economy

Won-young PARK

Scientific Engineering Associate, International Energy Analysis Department,
Lawrence Berkeley National Laboratory, USA

Abstract:

The Paris Agreement aims to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Under the Kigali Amendment to the Montreal Protocol, countries committed to cut the production and consumption of hydrofluorocarbons (HFCs) — potent greenhouse gases (GHG) used in refrigeration and air conditioning — by more than 80 percent over the next 30 years. Increasing incomes and urbanization — as well as a warming climate — are driving up the global stock of air conditioners (ACs), particularly in emerging economies with hot climates. Because AC energy consumption is expected to increase substantially as the stock of ACs rises, improving AC energy efficiency will be critical to reducing AC energy, peak load, and emissions impacts. LBNL studies find that it is highly beneficial to pursue high energy-efficiency in concert with the transition to lower global warming potential (GWP) refrigerants to achieve maximal GHG reductions with the least amount of equipment re-design and replacement, and suggest that policy action and market transformation can be accelerated and effectively harmonized with international effort. This talk provides an overview of LBNL studies on AC energy-efficiency with the transition to lower GWP refrigerants, and select energy research trends.