Energy Indicators for Sustainable Development

Mr. Alan McDonald of the IAEA presented 30 energy indicators for sustainable development which have been developed through a project-based inter-agency collaboration of seven volunteer countries. The project also produced guidelines and methodologies for the development of energy indicators, including data collection and analysis. Out of these thirty energy indicators, 4 were classified as social (e.g. those measuring accessibility, affordability), 16 as economic (e.g. those measuring use and production patterns), and 9 as environmental (e.g. those measuring pollution levels). Mr. McDonald emphasized that indicators are quality control tools for analytical thinking and decision-making. Capacity building for energy analysis is essential for countries to make use of available indicators.

Energy indicators could assess the progress of past policies while providing a reality check. It is important to remember that such indicators need to be used in context and are meant for national analysis. Mr. McDonald gave an example of indicators used to measure energy intensity: energy use per GDP, for instance, is not a good indicator. Energy intensity per value added is more appropriate. In his presentation, Mr. McDonald made references to 2005 IAEA publication on Guidelines and Methodologies (http://www-pub.iaea.org/MTCD/publications/PDF/Pub1222_web.pdf) as well as the November 2005 special issue of the Natural Resources Forum on Policy Applications of Energy Indicators (http://www.blackwell-synergy.com/toc/narf/29/4?cookieSet=1).

Mr. Fridtjof Unander of the IEA cautioned the participants that a different choice of energy indicators could create very different energy scenario. He explained how energy indicators help to understand the driving forces behind growth in energy demand, to separate factors related to energy efficiency from those that are not, to identify improvement measures, and to track progress of energy efficiency measures. There are two types of indicators— one that follows activities that drive energy use (e.g. building area, industrial output), and those that follow energy intensity developments (e.g. energy/passenger, space heating energy/floor area). This concept was further explained through case studies.

Both instructors discussed major obstacles that must be overcome for the development of energy indicators, including the lack of good quality, consistent, and disaggregated data.