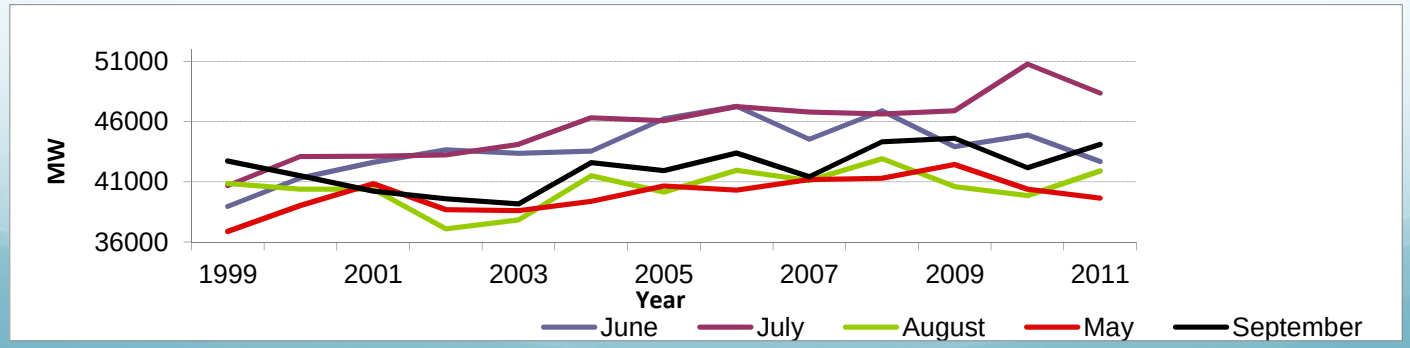
Session on Planning climate adaptation in the energy sector
"*Possible impact of climate change on the Italian energy sector*"
Domenico Gaudioso – ISPRA (http://www.isprambiente.it)

- **Challenge addressed *(Energy demand)***:
  - Increase in the energy demand for cooling (e.g. air conditioners)
  - Shift in peak electricity demand towards summer
- **Barriers**
  - Lifestyles leading to an increase in the demand for space cooling
  - New building codes leading to slight disadvantages in the use of cooling systems
- **Action for the future**
  - Adaptation measures for the building sector aiming at reducing air-conditioning needs
  - Diffusion of more efficient cooling systems (for example through minimum efficiency standards)
  - Demand side management to reduce overall electricity consumption



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- **Challenge addressed (*Electricity generation*)**:
  - More frequent interruptions of electricity generation by thermal power plants due to the influence of extreme events (floods, droughts, increased temperature of water bodies)
  - Decreasing trend in hydroelectricity generation and increase of its variability
- **Barriers**
  - High uncertainty of the local impacts of global climate trends
- **Action for the future**
  - Climate change should be considered in the design of new thermal power plants, through the use of appropriate design criteria and specific technologies
  - Adoption of measures to rationalize, plan and reduce water consumption
  - Replacement of open cycle cooling systems with closed loop systems, and installation of additional air coolers, pumps, or cooling towers
  - For hydroelectric plants, increase in the volume of the storage reservoirs