

**Energy and the Environment:
Technological and economic aspects**

**Lecturer: Prof. Jozef M. Pacyna
Date of lecturing: 11 – 14 December, 2012**

Summary

The following subjects will be lectured:

1. Technologies to produce energy for stationary and mobile use. Production of energy from fossil fuels. Current situation and future projections. How serious is the “gas supply” issue in a view of recent natural gas shortage in Europe.
2. Energy production and energy consumption as major drivers of environmental change. Emissions of various gases and particles from energy sources to the atmosphere. Releases of contaminants and nutrients to aquatic and terrestrial ecosystems
3. Energy production as a source of changes of ecosystem goods and services. Description of goods and services within various environmental compartments. The impact of energy production and use on the concentration levels of chemicals in various environmental compartments on global, European and local scale.
4. Waste disposal management in the energy production sector.
5. Renewable energy sources as a way to improve the quality of the environment. Current use of renewable to meet the energy demands in Europe and worldwide and future projections.
6. Economic aspects of environmental management systems in the energy production and use sectors. Description of the concept of best available technology (BAT) for the reduction of air and water pollution and waste with examples for various international strategies for the improvement of environmental quality. Major aspects of economic and environmental scenario development.
7. Social aspects of environmental change due to emissions from energy production and use sectors. Various models of energy demands, population rate change, and employment index. Relations between the environmental management and employment change.
8. Role of monitoring networks in implementation of environmental management strategies in the power production sector. General concept of monitoring at various scales. Examples of various monitoring systems.
9. Implementation of international agreements on pollution reduction from power production sector. Global and regional agreements on the reduction of environmental pollution. Major factors hampering implementation of these agreements.

Termin	Dzień tygodnia	Godzina	Miejsce
10.12.2012	Poniedziałek	9.15 – 12.00	Sala 300 GG
11.12.2012	Wtorek	9.15 – 12.00	Sala 300 GG
12.12.2012	Środa	9.15 – 12.00	Sala 300 GG
13.12.2012	Czwartek	9.15 – 12.00	Sala 300 GG
14.12.2012	Piątek	9.15 – 12.00	Sala 300 GG