Environmental Impacts of Using GIS Applications in Energy Industry

Recai Ogur, MD, PhD
Assoc. Prof. of Public Health
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While the countries want to consume more energy, environmental issues resulting from using fossil related fuels have been increasing.
There is a strong positive correlation between energy consumption and development for the countries.
There is an increase in energy-related CO$_2$ emissions through the world, and it is **speculated** that this may change the climate of the earth.
Although there are some controversial findings about climate change, it is clear that energy industry related emissions are one of the most dangerous pollutants for environment.
Energy & Development & Health Issues

Change in water availability compared with average 1981–1990 (%)
2050 based on IPCC scenario A1

- more than 20
- 20 to 0
- 0 to –20
- –20 and more

Energy & Development & Alternatives?

Can we give up energy usage?
Can we give up development?

using renewable energy...
Would it be a solution for everyone?
The main purpose of human-being in the world is to improve himself/herself without getting exhausted.

Managing the sources wisely.
Managing like seeing/being onsite
GIS technology usage in energy industry:
- management of energy resources,
- transmission of energy
- consumption management.
Electricity could be produced from different sources more effectively by using weather oriented geographic information systems. An example from Bandirma, Turkey.

**City power consumption:** 26 MW/month

**Electricity sources:**
- Wind energy (22 turbines, total capacity of 30 MW/m) - local
- Thermal power (coal) – regional
- Natural gas – regional
- hydro-electric - national
GIS & Energy Industry – Source Management
Experiences show that one of the most effective uses of GIS technologies is designing and management of transmission of energy.

GIS technologies give the opportunity to control all line more effectively, and failures and accidents may be corrected more quickly.
Consumption of energy is an effective area for GIS technologies; **energy performance analysis** may help also policy makers, architects and engineers for building better communities.
Benefits of GIS applications in energy industry:

(a) Increase in effectiveness
(b) cost savings
(c) better decision making
(d) better communication
(e) improved data collection and analysis
improved disaster management.
Conclusion

More effective energy management

healthier environment & healthier populations.

Introducing GIS into our daily life more effectively, we may build more habitable surroundings for us and future.
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