AI technology for sustainable policy making

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Abstract. Policy-making is an extremely complex process that takes place in complex dynamic environments and affects the three pillars of sustainable development: society, economy and the environment. Every political decision process covers strategic and tactical planning along with operation control and monitoring. It requires taking into account an enormous amount of data concerning the impacts the policy has on environment and on the economic development of a region or a country. In addition, participation of citizens and interested stakeholers to the design of policy issues is becoming more and more important to assess social acceptance. There are a number of artificial intelligence techniques that can play an important role in improving the policy-making process, e.g. decision support systems, optimization, game theory, data and opinion mining, and multi-agent systems. We outline some potential uses of AI technology as it has emerged within the EU-funded FP7 project *ePolicy – Engineering the Policy-Making Life-cycle*, and we identify some potential research challenges. The case study considered in ePolicy concerns the design of sustainable energy policies considering the production of energy from renewable energy sources, the energy efficiency measures along with their cost and incentive design processes. The talk will traverse the several phases of the policy making life cycle and shows on the case studies how AI techniques can be employed and merged to come up with a usable system in the hands of policy makers.

Related material

The project web site is `http://www.epolicy-project.eu/`.

Related papers are *Sustainable Policy Making: a strategic Challenge for AI* by Michela Milano, Barry O'Sullivan and Marco Gavanelli to appear on AI Magazine and *Sustainable Energy Policies: research challenges and Opportunities* by Michela Milano at DATE 2013, Design and Automation in Europe Conference, 2013.

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