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Integrated Decision Support for Energy/Water Planning in Zayandeh Rud River Basin in Iran

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Abstract : In order to make well-informed decisions respecting long-term system planning, resource managers and policy creators necessitate to comprehend the interconnections among energy and water utilization and manufacture—and also the energy-water nexus. Planning and assessment issues contain the enhancement of strategies for declining the water and energy system's vulnerabilities to climate alteration with also emissions of decreasing greenhouse gas. In order to deliver beneficial decision support for climate adjustment policy and planning, understanding the regionally-specific features of the energy-water nexus, and the history-future of the water and energy source systems serving is essential. It will be helpful for decision makers understand the nature of current water-energy system conditions and capacity for adaptation plans for future. This research shows an integrated hydrology/energy modeling platform which is able to extend water-energy examines based on a detailed illustration of local circumstances. The modeling links the Water Evaluation and Planning (WEAP) and the Long Range Energy Alternatives Planning (LEAP) system to create full picture of water-energy processes. This will allow water managers and policy-decision makers to simply understand links between energy system improvements and hydrological processing and realize how future climate change will effect on water-energy systems. The Zayandeh Rud river basin in Iran is selected as a case study to show the results and application of the analysis. This region is known as an area with large integration of both the electric power and water sectors. The linkages between water, energy and climate change and possible adaptation strategies are described along with early insights from applications of the integration modeling system.

Keywords : climate impacts, hydrology, water systems, adaptation planning, electricity, integrated modeling
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