

## **ABSTRACT**

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### **SHALE GAS DEVELOPMENT: MANAGING ECONOMIC TRANSITIONS**

Shifts in populations and economic structure are as old as population settlements themselves. As technologies change and economies adapt, regional comparative advantages also evolve. Among the most consequential of recently developed new technologies is horizontal drilling, which has opened vast regions of the world to the extraction, development, and use of low-cost energy from shale gas. Economic transitions and structural change are inevitable. The challenge for regional economists, policymakers, and economic developers lies in the identifying and managing these transitions in ways that maximize benefits and minimize the costs that accompany them. Complicating this challenge is the recognition that the geographic distributions of costs and benefits of economic development often do not coincide. This spatial mismatch of costs and benefits has been prominent historically in regional resource boom and bust cycles, many of which have been fed specifically by energy resources. The resources of energy rich regions have often been exploited in ways that provide short-term regional economic benefits and disruption, longer-term economic development often accompanied by environmental and physical infrastructural degradation. Recognizing that we are entering the early stages of one of the most substantial resource based shifts in economic structure in the history of energy resource development, we have the opportunity and the obligation to learn from successes and failures of previous economic transition management efforts, and to design strategies that will maximize the benefits and minimize the negative consequences of shale gas development. This contribution identifies and elaborates upon four critical dimensions of the transition management challenge. The first dimension includes the economic and environmental aspects of the extraction activities including drilling, materials assembly and usage including employment, income, capital equipment, and consumables, both manufactured and natural. The second dimension identifies the negative externalities of impacts on off-site physical infrastructure, with a special emphasis

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on transport infrastructure. In attempting to minimize negative consequences, programs should be developed to leave affected areas no worse off, at worst, and better off if possible. The road network involved in support drilling can extend well beyond the obvious transport arteries, even to jurisdictions that are not direct beneficiaries of severance taxes or impacts fees. The third dimension centers on economic structural changes related to upstream and downstream activities in the production and supply chains, and the fourth dimension concerns the roles of and impacts upon social and institutional structures.