



A R I Z O N A

Increasing Energy Efficiency in New Buildings in the Southwest: Energy Codes and Best Practices examines the potential for and benefits from adopting and enforcing up-to-date residential and commercial energy codes and “best practice” building techniques in the Southwest states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming. The study examines three scenarios – business-as-usual, moderate improvement, and strong improvement – modeling costs and energy savings for all three scenarios in 2010 and 2020. The study also makes a series of policy recommendations to promote energy codes and the construction of highly-efficient buildings.

Following are Arizona-specific data and results:

Status of Energy Codes

The most populous state in the Southwest, Arizona adds over 50,000 new dwellings to the energy grids each year. A home rule state, many jurisdictions do not have any energy codes at all, including the City of Phoenix. Tucson implemented the 2000 version of the International Energy Conservation Code (IECC 2000) in July of 2003, and a number of other smaller jurisdictions have adopted this or a similar up-to-date code. Phoenix appears to be on a course to adopt the National Fire Protection Association 5000 (NFPA 5000) code, probably by the end of 2003.

Status of “Best Practices” Efforts

Arizona has over 61 ENERGY STAR[®] certified builders and has produced 20,000 ENERGY STAR homes through July 2003, over 20% of the nation’s total. Tucson’s more than 50% market share for ENERGY STAR new homes leads the nation, due in large part to well-designed, effective utility programs.

Building Stock and Projected Growth

	Housing units 2000	Housing units 2020	Growth 2000-2020 (%)	Commercial area in 2000 (ft ² x 10 ⁶)	Commercial area in 2020 (ft ² x 10 ⁶)	Growth 2000-2020 (%)
AZ	2,189,189	3,315,965	51	1,183	2,287	93
Region	6,597,710	9,543,226	45	3,969	7,085	79
AZ as % of Region	33	35	-	30	32	-

Source: U.S. Census; Tellus Institute



Energy Savings Potential – Residential Sector

Scenario	2010			2020		
	Total Savings (TBtu)	Total Elec Savings (GWh)	Total Gas Savings (TBtu)	Total Savings (TBtu)	Total Elec Savings (GWh)	Total Gas Savings (TBtu)
Moderate Improvement	3.1	724.5	0.6	4.8	813.3	2.0
Strong Improvement	6.9	1,622.5	1.4	16.8	2,863.7	7.0

Energy Savings Potential – Commercial Sector

Scenario	2010			2020		
	Total Savings (TBtu)	Total Elec Savings (GWh)	Total Gas Savings (TBtu)	Total Savings (TBtu)	Total Elec Savings (GWh)	Total Gas Savings (TBtu)
Moderate Improvement	4.4	1,146.5	0.5	9.8	2,546.0	1.2
Strong Improvement	9.5	2,533.0	0.8	24.1	6,543.0	1.7

Combined Residential and Commercial Costs and Savings (millions of constant 2003 dollars)

Scenario	2010			2020		
	Costs	Savings	Net Savings	Costs	Savings	Net Savings
Moderate Improvement	78.9	121.6	42.7	79.6	235.2	155.6
Strong Improvement	166.4	264.7	98.2	226.5	658.9	432.4

Net Economic Savings during 2001-2020 (billion dollars)

State	SCENARIO	
	Moderate Improvement	Strong Improvement
Arizona	1.08	2.84
Region	2.85	8.36
AZ as % of Region	38	34