

Green Energy-Efficient Schools for Albania

June 2, 2015 - A recent study by Arizona State University's Walton Sustainability Solutions Initiatives found that with investments from both the international community and the Albanian government, the country is well-positioned to transform its education system, generate employment opportunities and boost GDP by repairing and improving its schools with innovative green technologies.

The study evaluated the opportunities, challenges, impacts, and costs for “greening” Albania's 3,300+ school buildings and developed a multi-tier series of changes to improve energy efficiency, air quality, indoor/outdoor facilities and other design elements. The report concludes that the improvements will:

- 1. Improve health, safety, and comfort conditions**
- 2. Provide uninterrupted electricity in schools**
- 3. Generate more than 220,000 new jobs**
- 4. Increase GDP by US\$880 million**

Based on this study's findings and the financial resources available for Albania's schools, ASU developed an intervention in stages—requiring more investment and producing greater benefit at each stage—to sustainably address existing energy, comfort and safety challenges in school buildings. Solutions range from repairing existing systems and insulating buildings to installing renewable-energy design elements and expanding indoor/outdoor facilities (see table below).

Tier of Improvement	Summary of Recommended Improvements	Construction Costs (US\$ million)	Employment Opportunities Generated	GDP Increase (US\$ million)
Tier 1	Repairs: Eliminate moisture and mold; repair existing systems	\$175	28,386	\$113
Tier 2	Passive Energy Efficiency: Add passive energy efficiency and water harvesting measures	\$30	9,129	\$30
Tier 3	Heating and Solar PV: Add heating systems, fans and LED lights. Add rooftop solar photovoltaic renewable energy	\$112	18,164	\$73
Tier 4	Green Facility Additions: Add more classrooms and specialized instructional spaces	\$1,014	164,588	\$658
Total		\$1,331	220,267	\$881

ASU recommends minimum improvements through Tier 2, which would cost approximately \$205 million. The cost for implementing all four tiers is estimated at \$1.33 billion, which averages out to an investment of approximately \$2,150 per student. This will bring Albania's schools up to and beyond the standards of most developed countries.

The full report, Green Energy-Efficient Schools for Albania, is available at: sustainabilitysolutions.asu.edu/albania-green-schools.

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