

the governor to persuade the Legislature to do something bigger. At Rendell's request, the Legislature reactivated a defunct state agency and energy program, the Pennsylvania Energy Development Authority (PEDA), to invest even more in the jobs-energy strategy.

PEDA can now float up to \$1 billion in tax-free bonds to finance construction of energy projects and provides grants and loans to support public-private ventures. In two years, PEDA has awarded \$15 million in grants and loans for 41 clean energy projects expected to leverage \$220 million in private investment and 1,558 permanent and construction jobs. PEDA will begin issuing bonds for large-scale clean power projects in 2007.

For example, one such grant, for \$1.3 million, went to Plextronics, a cutting-edge solar technology company spun off by Carnegie Mellon University. The grant will subsidize continued development of an organic conductive polymer technology. This will replace the more costly silicon wafers that make solar electricity prohibitively expensive. Plextronics already has added 12 jobs to its base of 19 and leased space for a facility to produce the product, Plexcore, which could employ as many as 327 full-time workers within the next five years.

Attracting energy companies requires policy changes as well as investment. Gamesa didn't demand the typical package of tax subsidies. Rather, it asked the state to create a market by becoming a major purchaser of alternative energy. The state legislature passed an advanced energy portfolio standard that requires that 18 percent of the state's electricity come from renewable sources by 2020. Already the largest producer of wind energy east of the Mississippi River, the Gamesa plant positioned the state as the largest producer of wind turbines as well.

Pennsylvania's energy portfolio standard also requires 10 percent of electricity to be generated from waste coal and byproducts from pulping and wood manufacturing. This will help eliminate mine-scarred landscapes and the acid mine drainage and other pollution associated with waste coal. PEDA provided \$400 million in bond financing toward a 272-megawatt waste coal electric generation

facility developed by Robinson Power Co. LLC in Washington County, southwest of Pittsburgh. The facility is scheduled to begin construction in October. It will create 350 permanent unionized jobs and eliminate 60 million tons of waste coal in 25 years. It will produce more than twice the electric power—with lower air emissions—than the plant it is replacing.

The portfolio standard will also increase capacity in solar energy. By 2021 utilities will be required to purchase 700 megawatts of solar-produced electricity, the second largest solar requirement in the nation. Since 2003, the commonwealth has helped to fund over half of the solar photovoltaic installations in Pennsylvania—about 505 kilowatts. The nearly \$3 million in state funding was matched by more than \$10 million from other sources. To encourage continued technological innovation Pennsylvania has invested more than \$2 million in solar research, including \$500,000 in direct funding to Pennsylvania's only solar manufacturer, Solar Power Industries, to enhance its manufacturing capabilities. Talks are under way with a leading German solar energy company about locating a facility in the state. If successful, the commonwealth will gain still more manufacturing jobs and millions in state-of-the-art equipment.

Pennsylvania can attract these high-tech facilities because manufacturing has not been written off. Tom Croft is executive director of the Steel Valley Authority, an economic development agency focused on manufacturing. He explains that building next-generation manufacturing required the commonwealth to fully reassess which of its manufacturers could be suppliers to, and customers for, these new technologies. After an unprecedented accord between labor, business, and community stakeholders, Pennsylvania gave new priorities to retaining and modernizing manufacturing, providing new capital and pension fund investments in the field, investing in incumbent workers, and even addressing the unfair trade crisis. Without a manufacturing infrastructure and skilled workers, we can't build the industries of the future.

CAN THESE POLICIES GO NATIONAL?

As these examples show, states can be both laboratories for creative good-jobs policies and incubators of political coalitions on their behalf. For the moment, a national good-jobs policy is precluded by the Bush administration and the Republican Congress. In the meantime, the Apollo Alliance, a coalition of labor unions, environmentalists, and some business leaders is attempting to push the green jobs agenda forward on the national level.

The Alliance was created after September 11 to promote a national commitment of the magnitude of the Apollo space mission to move the nation toward energy independence and in the process create good jobs in manufacturing and other sectors. The Alliance proposes a \$300 billion national investment over 10 years, which would add more than 3.3 million jobs to the economy and stimulate \$1.4 trillion in new GDP, with the cost being repaid through increased federal tax revenues and earnings.

Pending a more congenial national administration, organizers focused on giving visibility to the notion that clean energy creates good jobs and building a base of state and local coalitions supporting the agenda. These state and local groups have achieved clean energy and green projects and policies, although Apollo may never come up as a player. In Pennsylvania, Apollo represented the United Steelworkers on the Governor's Energy Task Force and were critical in gaining United Mine Workers support for the energy portfolio standard. In Washington state, Apollo helped get the machinists union, which represents woodcutters in the lumber industry, to back the state's green building standard.

All of this is prologue to what needs to be a massive shift in national policy, to put good jobs in both manufacturing and services at the heart of America's economic agenda. **TAP**

Joan Fitzgerald, author of Moving Up in the New Economy, directs the graduate program on law policy and society at Northeastern University.