Clean Energy States Alliance

State Clean Energy Fund Support for Renewable Energy Projects

Key Findings from the CESA National Database

State clean energy funds have emerged as a major driver of renewable energy projects across the United States. These programs have funded thousands of projects representing the full range of renewable energy technologies, including wind, solar, biomass, and hydro. Although the impact of the states is clearly significant, up to now there has been no comprehensive report to assess the total effect of their efforts.

To understand the cumulative impact of the state funds, Clean Energy States Alliance (CESA) has created a national database of state fund-supported renewable energy projects. The database contains approximately 50,000 projects that have been installed and have commenced operation with state fund support. This paper summarizes the key, initial findings from that database.*

FIGURE 1A **State Clean Energy Fund Projects Completed by Year**

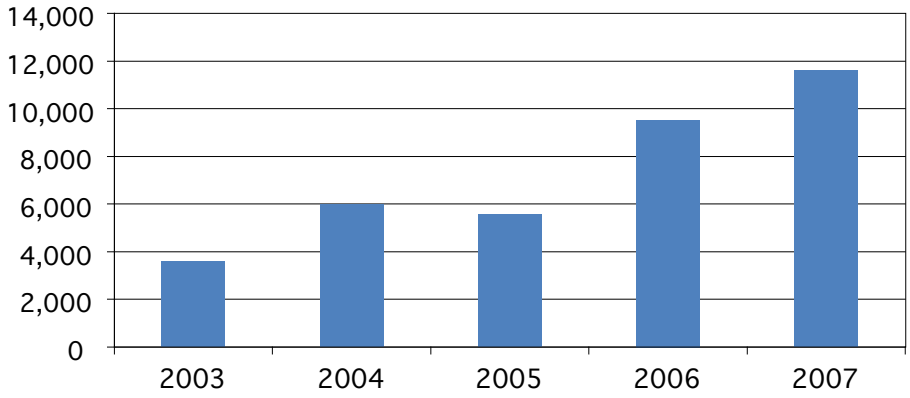
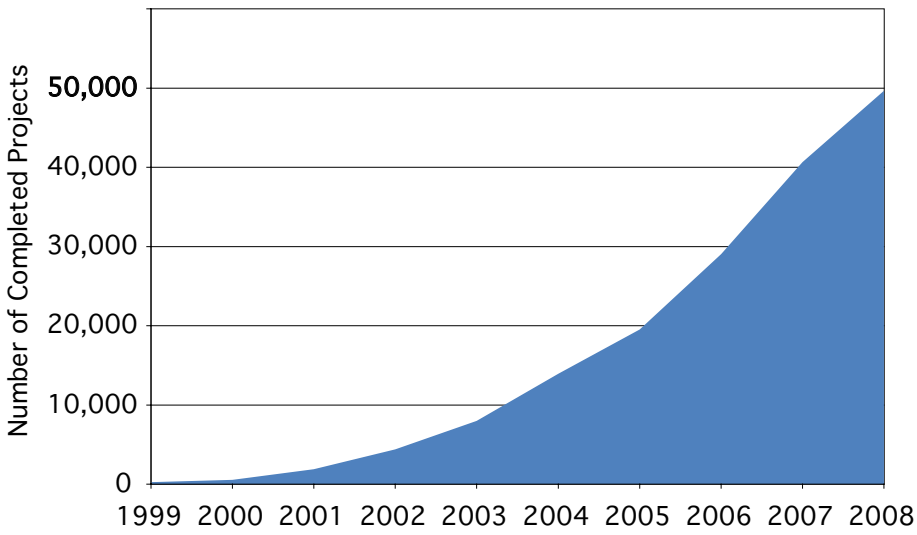


FIGURE 1B **Cumulative Number of State Clean Energy Fund Projects**



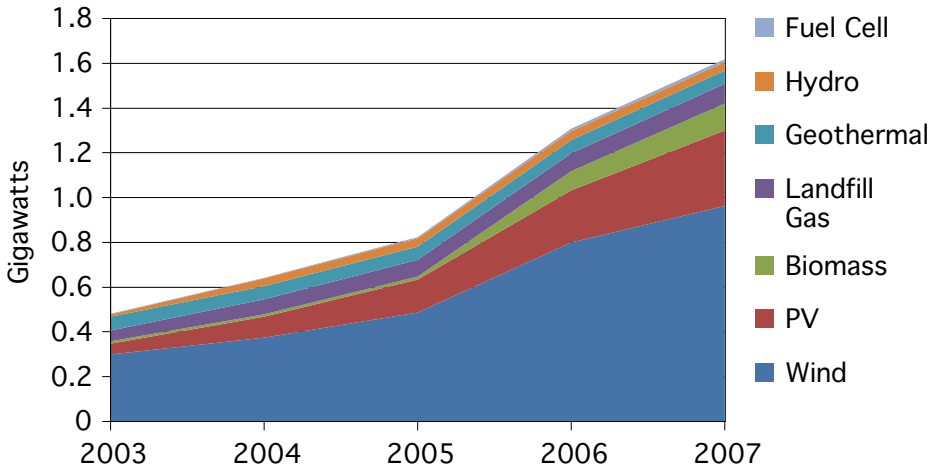
1 The impact of the state clean energy funds is significant and is accelerating. The state clean energy funds have had a significant impact on the development of renewable energy. Since 1998, CESA-member states have supported more than 50,000 new renewable energy projects. The projects included in the database have a total capacity of 1.6 Gigawatts and generate an estimated 5.3 million megawatt-hours of electricity each year, enough to power nearly 500,000 homes. (Note: 1 Gigawatt = 1,000 Megawatts.)

State fund support for renewable energy projects has accelerated rapidly as more and more states create targeted initiatives to advance the clean energy sector as both an economic and environmental strategy. Over

* Because the database focuses on new, electricity-generating projects that have been completed and are operational, it does not capture all of the funds' activity. First, it does not include projects that are still in development. Those projects will not be added to the database until they come online. Second, it includes only new projects, and thus does not reflect the funds' substantial support for existing renewable energy projects. The support for older projects has been essential to keeping several gigawatts of pre-1998 renewable energy generating capacity operating. Finally, it does not capture the many other activities of the funds, including education, training, clean energy business development, and research and development.

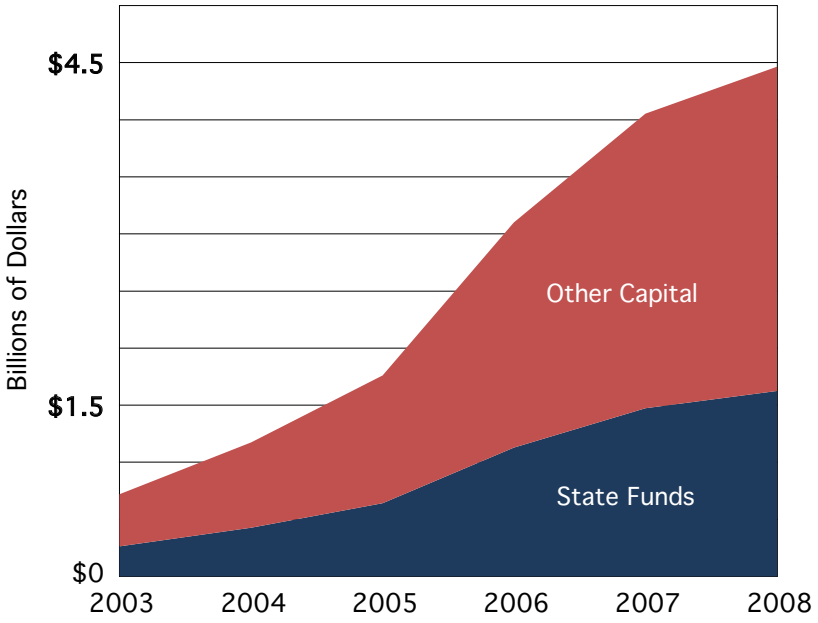
the period 2003–2007, the number of state fund-supported projects increased at a compound annual growth rate of 36% and the number of megawatts supported increased at a compound annual growth rate of 25%. Figure 1A, on the previous page, shows the number of projects completed by year from 2003 through 2007. Figure 1B shows the cumu-lative number of completed state clean energy fund projects from 1999–2008. Based on preliminary data for 2008, we believe that the rate of increase in the number of megawatts continued during that year.

FIGURE 3 **Cumulative Generating Capacity Supported by State Funds by Technology**



2 The state funds invested $1.5 billion in renewable energy projects between 1998 and 2007, and leveraged an additional $2.6 billion. The state clean energy funds have brought substantial financial resources to renewable energy projects, both with their own funds and through leveraging private capital. The state funds are typically funded through a small surcharge on electric bills. From 1998 to 2007, they invested $1.5 billion in renewable energy projects. However, these state-based funds cover only a portion of the total cost of each project. On average, private investors provide $1.75 of capital for every $1 provided by a state fund. Thus, the funds' $1.5 billion investment in clean energy projects leveraged $2.6 billion in other capital, bringing the total investment to over $4 billion. Figure 2, below, shows the investments of state funds and leveraged other capital from 1998–2007.

FIGURE 2 **Total State Clean Energy Fund Investments and Private Capital Leveraged**



3 The state funds have supported a broad range of renewable technologies and have led the nation in the development of photovoltaics. The state funds have supported the full range of renewable technologies, including wind, solar, landfill gas, fuel cells, hydro, and biomass. Of particular note, the funds have been the nation's primary driver of grid-connected photovoltaics (PV). For example, over 75% of the grid-connected PV installed in the U.S. in 2007 was installed in states with a clean energy fund. Figure 3, above, shows the total generating capacity of supported projects by technology.

4 The state funds have focused their financial support on on-site installations. While supporting the full range of clean energy technologies—large and small, the state funds have focused their financial support on "on-site" or "distributed generation" renewable projects. On-site projects are located on a customer's premises and their output is used primarily to meet the customer's energy needs. By contrast, grid-scale projects feed electricity directly into the electric grid and are typically much larger than on-site projects. On-site projects are usually more expensive per unit of installed capacity than grid-

FIGURE 4 **Financial Support from State Funds for Projects**

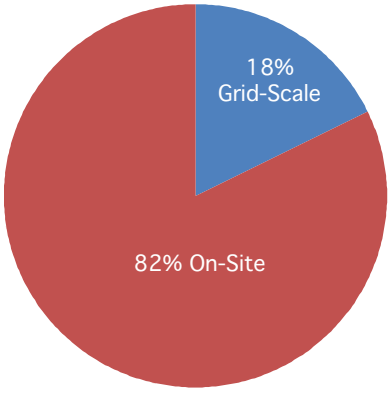
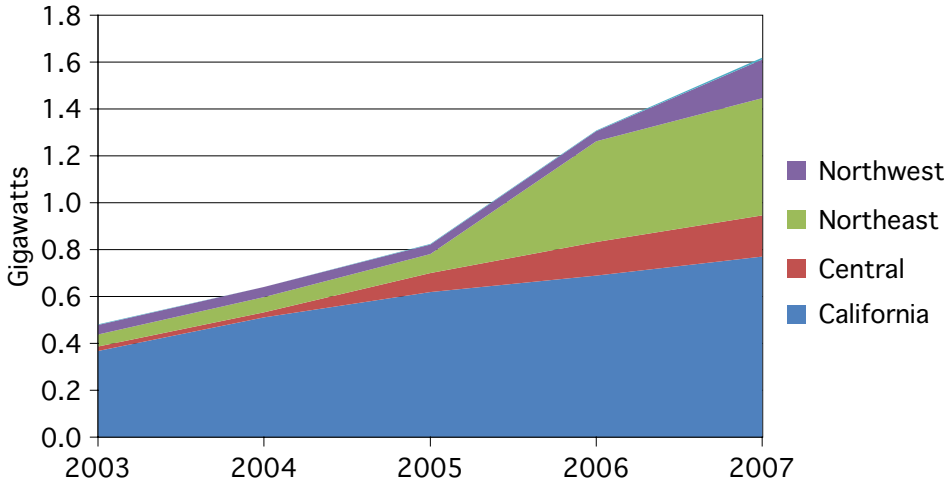


FIGURE 5 **Cumulative Generating Capacity by Region**



scale projects and so have a greater need for the financial support that the clean energy funds can provide. Through their support for on-site systems, states are accelerating market making, driving down the cost of new renewable technologies, and increasing the public's understanding of the benefits of clean energy. To complement this financial support for smaller projects, many of the states with clean energy funds have also established a renewable portfolio standard (RPS), which is a mechanism primarily designed to encourage and support grid-scale projects.

Figure 4, above, shows state clean energy funds' financial support allocated between on-site and grid-scale projects.

5 While California is the largest contributor, states across the country are investing in renewable energy. California has the largest renewable energy fund and has been an early and consistent leader. However, other states throughout the country have also made significant contributions, with increasing numbers of states establishing new and expanding existing clean energy programs each year. Since 2005, states in the Northeast, Northwest, and Central regions have scaled up their programs, creating a truly nationwide effort. Figure 5, above, shows the cumulative generating capacity supported by clean energy funds by region through 2007. Preliminary information about 2008 projects suggests that the trend towards wider geographic distribution in clean energy fund activity is continuing.

Clean Energy States Alliance Membership List

Alaska Energy Authority
Arizona Commerce Commission
California Energy Commission
Colorado Governor's Energy Office
Connecticut Clean Energy Fund
Energy Trust of Oregon
Florida Office of the Chief Financial Officer
Illinois Clean Energy Community Foundation
Maryland Energy Administration
Massachusetts Technology Collaborative
Renewable Energy Trust
New Jersey BPU/DEP Clean Energy Program
New Mexico Energy Conservation and Management
New York State Energy Research &
Development Authority (NYSERDA)
Ohio Energy Office
TRF Sustainable Development Fund (PA)
Vermont Clean Energy Development Fund
West Penn Power Sustainable Energy Fund
Wisconsin Focus on Energy
Xcel Energy Renewable Development Fund (Minnesota)

About Clean Energy States Alliance
Clean Energy States Alliance (CESA) is a national nonprofit organization that works with clean energy funds and state agencies to expand the nation's clean energy infrastructure and advance markets for clean energy technologies. CESA provides information and technical services to its members and shares its knowledge with the federal government and influential policymakers. CESA's member states manage programs that will invest nearly $6 billion in the next ten years to support clean energy. CESA is managed by Clean Energy Group.

About Peregrine Energy Group
This report was prepared for CESA and Clean Energy Group by the Peregrine Energy Group, an energy consulting firm based in Boston, Massachusetts. Founded in 1992, Peregrine provides strategic and technical services to private and public organizations on a broad range of energy supply and demand issues. Services include strategic planning and policy development; project management; market research; regulatory analysis and advocacy; energy program design and administration; and energy information management and performance benchmarking.

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