

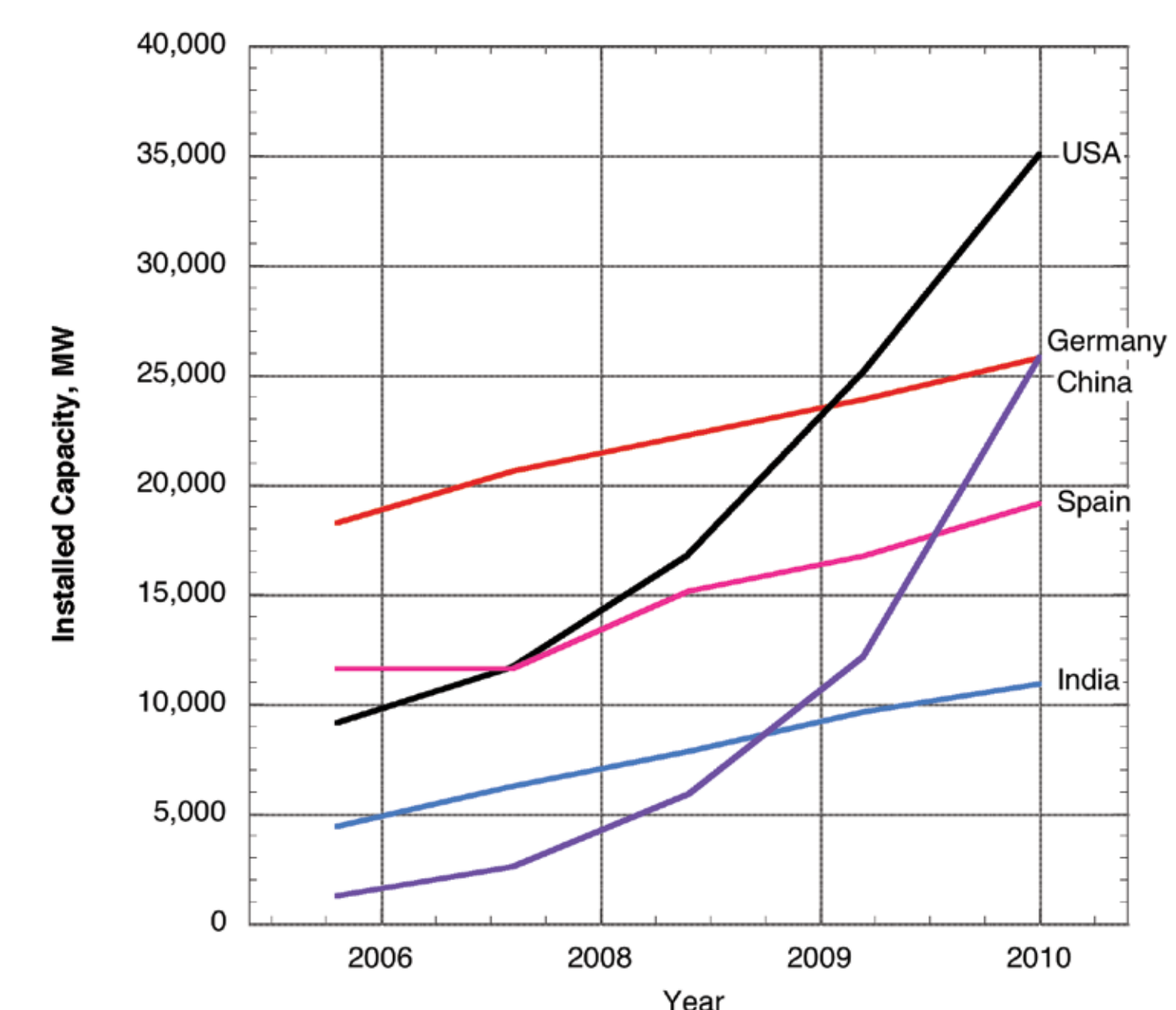
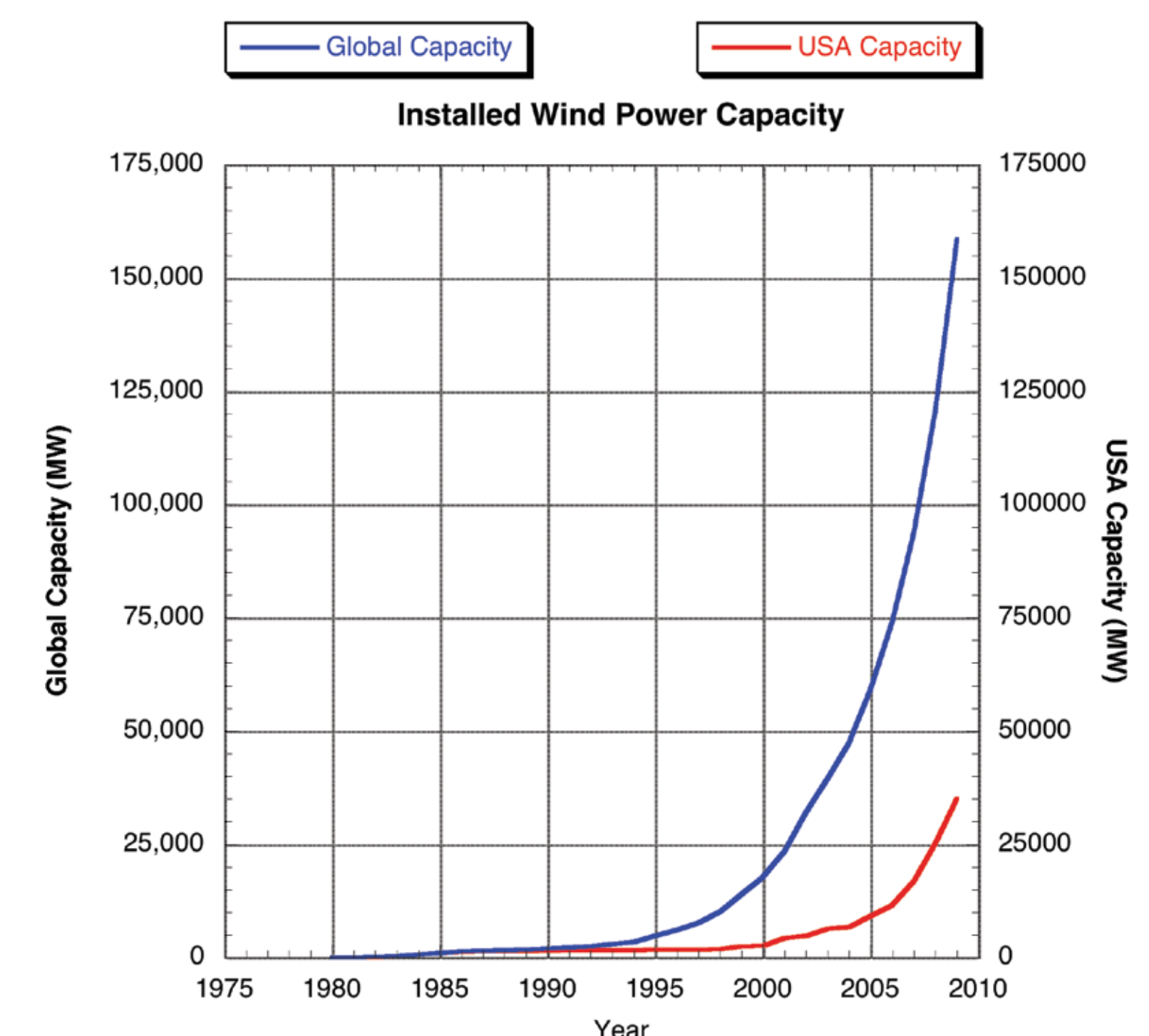
Managing Wind Energy

The California Wind Energy Collaborative supports the development of sustainable and affordable wind generation capacity for California.

THE CALIFORNIA Wind Energy Collaborative manages a focused, statewide program of scientific research, technology development and deployments, and technical training. It is a partnership between the University of California and the California Energy Commission.

This effort is conducted in close cooperation with the California Energy Commission's PIER Program, industry, state and federal agencies, academia, and other organizations to maximize the benefits of California's wind energy resources for its citizens.

Economic and environmental factors have combined to spur massive growth in the installation of wind turbines. In the 1980s, USA was the leader in installed capacity. From the 1990s until recently, other countries outpaced the USA. Over the last few years, pace of installation in the USA has increased rapidly due to increases and uncertainty in fossil fuel prices, as well as renewable energy mandates and financial incentive programs.



ACTIVITIES

RESEARCH:

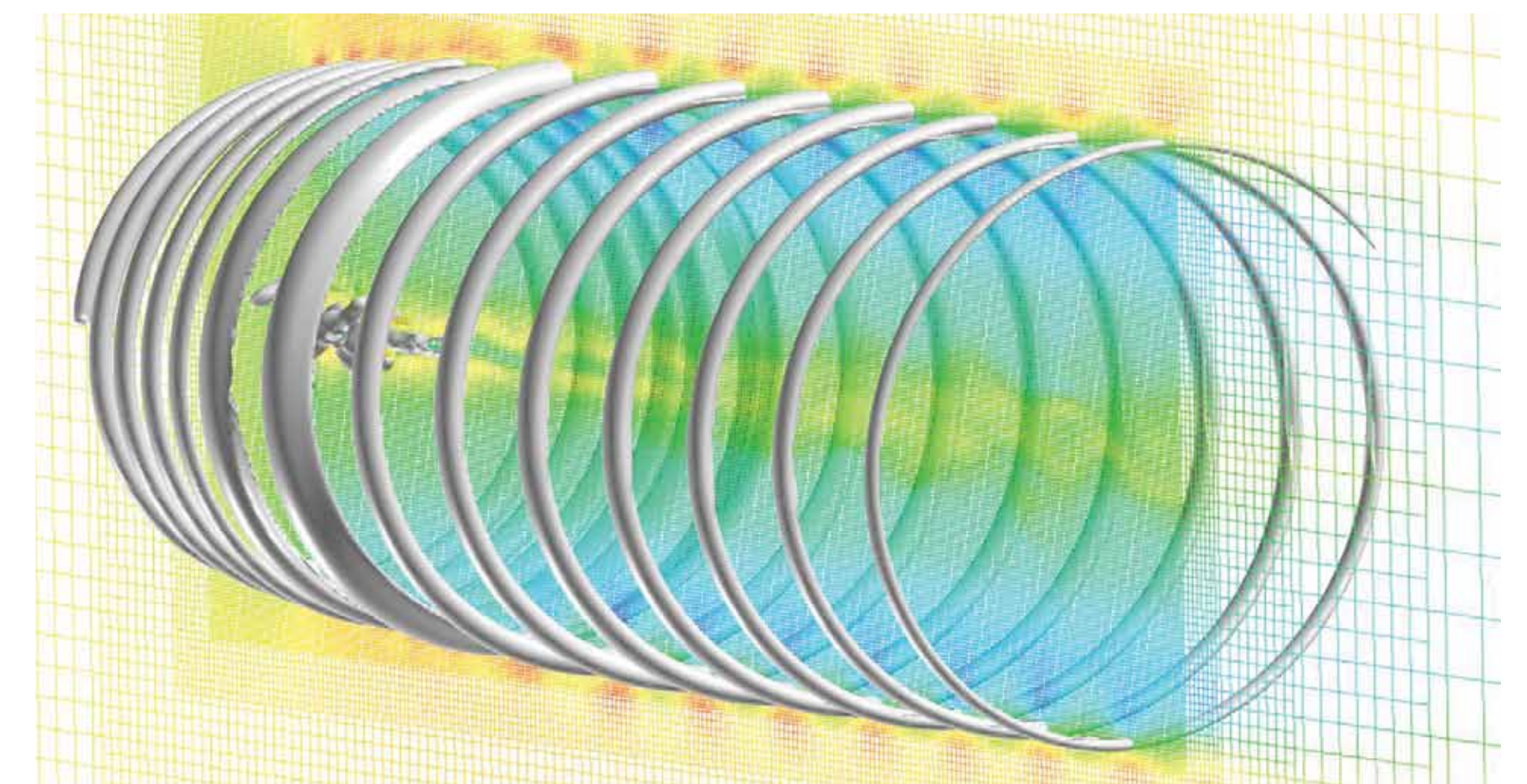
- Wind Plant Development—Improving wind resource assessment and addressing permitting issues.
- Conversion Technology—Advanced rotor designs for passive load control and structural efficiency.
- Grid Integration—Studying the effects of incorporating wind and other renewable into the existing electric grid.

COORDINATION:

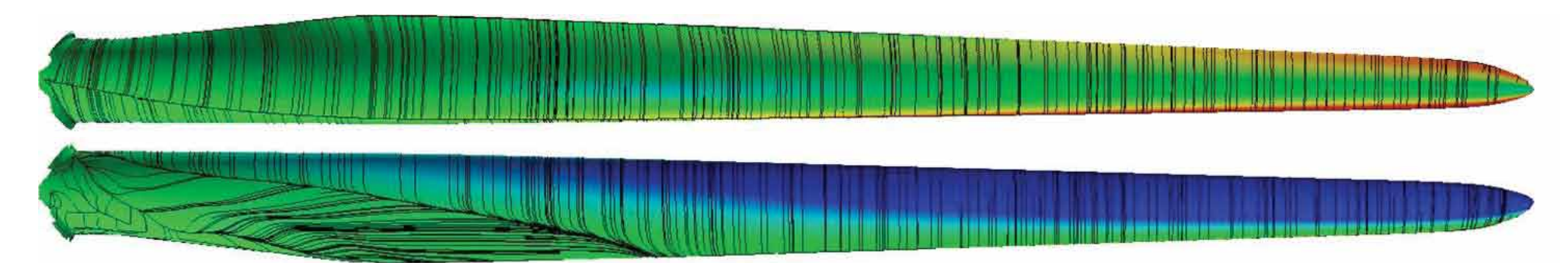
- Host annual forum on wind power in California.
- Conduct workshops to address specific topics like the Wind Energy Research Plan Workshop to help build a research agenda for the state.
- Convene an advisory board to steer collaborative strategic goals.

EDUCATION:

- Graduate level wind power engineering course.
- Two-day wind energy technology and industry primer targeted towards wind plant technicians, engineers and business people.
- Small Wind Energy course targeted at prospective small wind system owners.



Computational Fluid Dynamics (CFD) simulation of wind turbine rotor and its wake.



CFD-based visualization of turbine blade surface flow. Upwind side (top), downwind side (bottom)

CONTACT:

C.P. (Case) van Dam

Warren and Leta Giedt Endowed Professor

Chair, Department of Mechanical and Aerospace Engineering

Director, California Wind Energy Collaborative

University of California, Davis

info@cwec.ucdavis.edu

cwec.ucdavis.edu