米国・エネルギー省エネルギー効率・再生可能エネルギー局（DOE-EERE）風力エネルギープログラム（Wind Energy Program）の例

Table 2. Program Logic Model for Wind Program

Project	Large Wind Turbine Technology	Distributed Wind Technology	Transmission & System Integration	Technology Acceptance
Resources	• Appropriations • Industry cost sharing • NWTC facilities • IEA	• Appropriations • Industry cost sharing • NWTC facilities	• Appropriations • State funds • Partners	• Appropriations • State funds (energy offices) • Partners
Activities	• Technology development through public-private partnerships. • Supporting research and testing. • Reliability and performance improvement for existing turbine technologies. • Low wind speed technology development. • Offshore wind and resource assessment.	• Technology development through public-private partnerships. • Supporting research and testing.	• Wind generator modeling. • Wind farm data monitoring. • Resource characterization. • Grid operational impact analysis. • Transmission and generation planning. • Grid rules development. • Institution building through utility partnerships.	• Outreach to state-based organizations. • Small wind. • Institution building through utility partnerships. • Support for Native American interest in wind power. • Environmental and siting mitigation. • Emerging applications. • Resource Assessment.
Outputs	• New components, concepts and wind systems for land-based applications in Class 4 wind regimes. • Basic research tools to assist industry. • COE 3.6 cents/kWh in Class 4 wind by 2012. • Better understanding of offshore wind energy market and technical challenges. • COE 5 cents/kWh in Class 6 wind in shallow water by 2014.	• By 2015 expand by five-fold the number of distributed wind turbines deployed in the U.S. market from a 2007 baseline. • New components, concepts and wind systems for applications of less than 100 kW. • Development of wind turbines to support mid-sized market applications.	• Ability of wind systems to compete without disadvantage in key areas of market rules, interconnection impacts, operating strategies, and system planning. • Development of new transmission to facilitate wind development.	• 30 states with mature markets that support wind industry growth. • Technical and outreach support widely available. • Fewer barriers to large and small wind integration.
Short-term Outcomes 2007–2010	• The use of wind energy in high and low resource areas accelerates due to their improved cost effectiveness.	• Wind turbines for residential (1-2 kW) use and commercial/ community applications (100 kW and above) enter the marketplace.	• Wind becomes a participant in defining the national needs of emerging grid operation and rulemaking processes. • Announcement of 3 new transmission lines to bring low-cost wind to urban load centers.	• 30 states achieve a level of public awareness and policy environment that fosters a vibrant market for wind energy development.
Intermediate Outcomes 2010–2020	• The use of wind energy as a low-cost electricity source, without financial incentives, becomes widespread as technology matures. • Commercial development of shallow water technologies. • Commercial wind turbine technology for transitional water depths is developed and demonstrated in offshore sites.	• Distributed uses of wind energy at all sizes emerge as a significant opportunity for technology deployment and end-users embrace wind for a growing number of uses.	• Utilities and developers gain clear understanding of barriers to integration and know how to address them. • Increased transmission implemented allowing the expanded use of wind technologies.	• Public acceptance of wind technologies in rural areas, supporting local economic development. • 6-8 regional wind collaborative organizations emerge and function to plan and integrate appropriately large amounts of wind energy into regional operating systems.
Long-Term Outcomes and Problem Solutions 2020 and beyond	• The percentage of energy generated from wind exceeds 10%, confirming wind as a major National energy source. • Wind turbine technology for use in deepwater offshore applications is proven economic and becomes a major new electricity source for states bordering coastal zones.	• Wind turbines for emerging applications become available and gain acceptance for specialized uses such as hydrogen production and water supply.	• Wind achieves high grid penetration level and is a nationally accepted part of our energy portfolio. • National transmission infrastructure allows high levels of wind penetration.	• Awareness and acceptance levels are achieved nationally, making further coordination efforts unnecessary.

Source: Wind Energy Multiyear Program Plan For 2007–2012