

LICENSING POLICY OF WIND POWER SYSTEMS

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INTRODUCTION

The recent 2005 energy bill in the USA included provisions to expand access to the grid for wind power installations and upgrades to power lines. Though the capital to build those lines initially would be borne by investors, electricity users would eventually have to bear the cost. Any head to head cost comparison of alternative sources has to include the cost of transmission to move wind power from its production sites to its consumers.

The cost of wind power is getting closer to that of power generated from fossil fuels. Since the cost of conventionally generated electricity varies widely from less than 5 cents per kilowatt-hour in Kentucky to more than 15 cents that in Hawaii, wind energy can be a cheaper source of energy than fossil fuels at the higher cost sites. While cutting pollution is a major benefit, economics are going to be the biggest driver of the future growth of wind power. Before the system could become self sustaining, government support through regulation, licensing and tax credits subsidies are needed by the reborn industry.

RENEWABLE PORTFOLIO STANDARDS

In the USA, more than 90 percent of the installed wind generation capacity exists in just 12 states. But this concentration may be changing. Some 2,500 MWe of new wind power is expected to be installed by 2005, expanding the total capacity by a third. The expansion of wind power generation is being helped in 18 states by rulings designated as the "Renewable Portfolio Standards," which require utilities to generate a minimum percentage of their power from non-polluting, renewable sources within a target date.

A similar provision on the federal level, calling for ten percent of power generated from renewable sources by 2020, was approved by the USA Senate but dropped in the final version of the recently enacted energy bill. The White House also opposed the idea, on the basis that it would raise consumer costs and was better left to the states. The present planning is opting for a policy of reducing the rate of growth in the use of fossil fuels, stabilizing it to a zero growth level, and then gradually turning it into a negative slope by replacing it with alternative energy sources including wind, solar, biomass, ethanol, biodiesel, clean coal and nuclear energy. Such a gradual approach is advocated to avoid sudden dislocations to the existing economical system if fossil fuel sources are suddenly curtailed to satisfy the provisions of the Kyoto global warming treaty that the USA opted against joining.

Wind power is turning out to be a popular way to satisfy those renewable fuel requirements because it is already cost-competitive in many regions. But there is no doubt that government subsidies still give wind power a substantial boost. In the USA, the wind power industry enjoys the tail wind of a special tax depreciation schedule for

wind turbines, and a production tax credit for equipment used to generate wind power.

In Germany, by far the biggest generator of wind power with about a third of the world's total wind power capacity, the Renewable Energy Sources Act, passed in 2000, aims at increasing the share of power covered by renewable energy sources to 12.5 percent by 2010, and to 20 percent by 2020.

TAX CREDITS

Government incentives are a mixed blessing. The latest production tax credit for wind power in the USA, for instance, expired in December of 2003 and was not renewed until September of 2004, causing a dislocation in the supply chain.

Congress renewed the tax credit through 2007, in the recent energy bill, helping to maintain the momentum behind the business. Some 90 companies in 25 states now make wind turbine compensation, according to the American Wind Energy Association.

As manufacturers turn out new units, the economies of scale take effect, and factories become more efficient and the cost of manufacturing falls lower. As alternative energy equipment makers ramp up to produce those extra units, the industry has begun to consolidate around fewer, bigger players.

Larger installations also induce larger efficiencies and economies of scale. Setting up 200 windmills at a site reduces the cost per unit from that of setting up just 10 units from savings in the cost of access roads, operation and maintenance and transmission lines.

LICENSING

The National Environmental Policy Act (NEPA) of 1969 was implemented by Executive Order on March 5, 1970, and the guidelines of the Council on Environmental Quality of August 1, 1973 require that agencies of the USA Federal Government prepare detailed environmental statements on major Federal actions significantly affecting the quality of the human environment. The back bone of the compliance program involves the preparation and review by the government agencies and the public of documents covering the environmental aspects of programs and projects potentially affecting the environment. Three important documents are the Environmental development Plans, Environmental Impact assessments, and Environmental Impact Statements.

ENVIRONMENTAL DEVELOPMENT PLAN, EDP

This is the basic document for planning, budgeting, managing and reviewing of the broad environmental implications for each energy technology alternative. It is designed to identify environmental issues, problems, and concerns as early as possible during an energy program. It aims at analyzing the available data and assessing the current state of knowledge related to each issue, problem and concern, and to set forth strategies to resolve them, and to set forth the processes by which the public gets involved in the identification and resolution of these issues. It designates significant milestones for the resolution of the identified issues, problems and concerns. The timing of the milestones reflects the sequencing of the technology development, and once completed,

is made available for inspection by the public.

ENVIRONMENTAL IMPACT ASSESSMENT, EIA

This is a written report which evaluates the environmental impacts of a proposed energy project. It assures that the environmental values are considered at the earliest meaningful point in the decision making process. Based upon the evaluation, a determination is made on whether or not an environmental impact statement should be prepared. It is intended to be a brief factual and objective document describing the proposed action, the environment which may be impacted, the potential environmental impacts during construction, operations, site restoration, potential conflicts with Federal, State, regional or local plans and the environmental implications of alternatives.

ENVIRONMENTAL IMPACT STATEMENT, EIS

This document analyzes the anticipated environmental impacts of proposed projects and of reasonably available alternatives. It goes through four steps during its preparation: The preliminary draft is reviewed internally, the draft is distributed to the public for review and comment, the preliminary final incorporating the submitted comments, and the final EIS is issued reflecting the final review and deliberations.

The final EIS is filed with the Council on Environmental Quality and is distributed to the public. The document reflects the utilization of a systematic interdisciplinary approach which ensures the integrated usage of the natural and social sciences and the environmental design arts.

The contents of the report cover a description of the proposed action and alternatives, a description of the existing environment, an analysis of environmental impacts of the proposed action and its alternatives, and a specific review of the unavoidable adverse effects, resource use, land use implications, and the environmental tradeoffs represented by the proposed action and the alternatives.