STATE FINANCIAL AND REGULATORY INCENTIVES: RETURN OF THE POWER?

Henry H. Rogers II
Larry E. Shirley
N.C. Solar Center
Box 7401
N.C. State University
Raleigh, NC 27695-7401

ABSTRACT

The National Database of State Incentives for Renewable Energy (DSIRE) is an ongoing project of the Interstate Renewable Energy Council (IREC), and is managed by the North Carolina Solar Center with funding from the Office of Utility Technologies, U.S. Department of Energy.
This database serves as the nation's one-stop source of information on the status of regulatory and financial incentives for renewable energy that are provided by state governments in the states and territories. Information on existing incentives is provided to industry, government officials, utilities, regulatory officials and the public through written reports, a world wide web site, and a database application on computer diskette.

1. INTRODUCTION

In late 1995, the U.S. Department of Energy initiated a program through the Interstate Renewable Energy Council to survey each of the states and territories for available information on financial and regulatory incentives designed to promote the application of renewable energy technologies.

The financial incentive phase of the DSIRE project has recently been completed. The collected information is available in printed summary reports which detail the incentives on a state-by-state basis, a database application delivered on diskette with incentive contact information and search capability, and access provided to much of the database via the internet. The regulatory incentive phase is now underway. All information available so far on financial and regulatory incentives is presented in this paper.
The Interstate Renewable Energy Council is a nonprofit consortium of state and local government renewable energy officials and is uniquely situated to lead the effort to compile information on state incentives. IREC is sponsoring and overseeing the collection of data from state agencies and ensures that all of the information and products that are produced are disseminated to federal, state and local agencies, federal laboratories, and utilities.

The primary subcontractor to IREC for the DSIRE project is the North Carolina Solar Center at North Carolina State University in Raleigh, North Carolina. Established in 1988, the Solar Center is an organization located in the College of Engineering at N.C. State University and is sponsored by the Energy Division of the N.C. Department of Commerce. The Solar Center presently serves as a clearinghouse for information, education, technical assistance, training and applied research in renewable energy resources.

As information is gathered for the database, it is compiled and recorded in the database application. The information is then available for dissemination to renewable energy industries, government agencies, state legislatures, energy and environmental public interest groups, consumer advocacy groups, regulatory agencies, and utility companies to assist them in developing new programs and incentives.

DSIRE is coordinating this effort with national associations and organizations representing these entities, including the Solar Energy Industries Association (SEIA), National Renewable Energy Laboratory (NREL), National Association of Regulated Utility Commissioners (NARUC), National Conference of State Legislatures (NCSL), American Wind Energy Association (AWEA) and others.

2. BACKGROUND

The situation at the state level with regard to incentives is

extremely volatile. In just the last year, for example, both New York and California have passed utility restructuring legislation, a number of states are considering net metering legislation to follow the lead of 17 other states with such laws or policies in place, several state energy offices have been discontinued or had their functions divided and assigned to other departments, and direct financial incentives, such as tax credits, expire in some states while they are being created anew in others. With utility restructuring heating up to a fever pitch and funding of state energy programs increasingly being shifted from the federal to the state level, the remainder of this decade will be filled with innumerable changes in laws and regulations which support renewable energy development.

For several years, a mechanism was needed for conducting a regular, systematic and comprehensive collection and management of financial and regulatory incentives for renewable energy applications that are provided by state governments and agencies. This information is of great value to: (1) state government agencies and legislatures, which may be considering new programs or incentives, or extensions and expansions of past programs; (2) state regulatory bodies, or utility commissions, which have approval or influence over the creation of regulatory incentives; (3) utility companies, who may be considering the creation of new programs and incentives for renewables; (4) renewable energy industries, which need timely information on such incentives in order to organize their production plans and marketing efforts in the field; (5) membership associations and advocacy groups as they work to promote the use of renewable energy and protect the interests of consumers; and (6) consumers and businesses that will ultimately be taking advantage of the incentives.

Each year, a number of new programs and incentives are created at the state and local government level. In the last year, several states have expanded or deleted their tax and grant/loan incentives, and several utility commissions have grappled with utility cost recovery for renewable energy programs, green pricing and set asides. In fact, activities on the state level are so volatile and subject to change, it becomes necessary to constantly track this activity and widely disseminate this information on a timely basis for it to be useful to the audiences listed above.

3. THE SURVEY AND DATABASE

In order to provide a systematic and efficient method for updating and delivering information on financial and regulatory incentives for renewable energy applications, the DSIRE project has developed a stand-alone database application written in Microsoft Access that provides a fast and convenient method for viewing incentive details, searching for specific incentives, identifying the primary state contact for each incentive and printing reports. This database application, with manual, setup utility, and database viewer, is available on three computer diskettes for a nominal duplication and handling fee. The MS Access datafile itself is also available for downloading from the project web site.

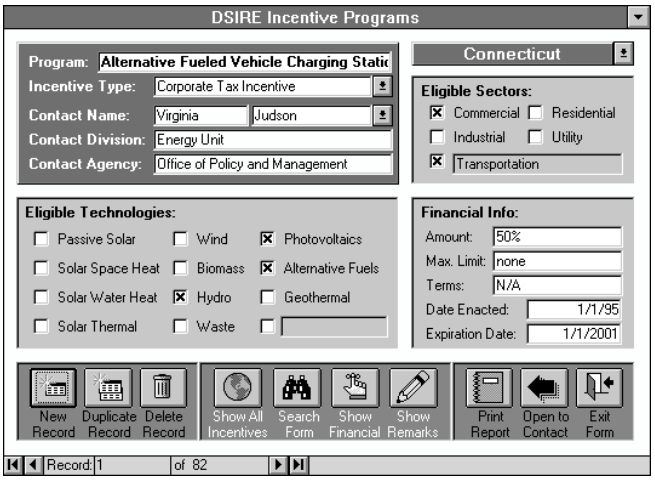


Fig. 1: An intuitive graphical interface enables the user to locate needed information in DSIRE quickly and easily.

As it is gathered, information is entered into the database which then serves as the basis for all printed and electronic access. DSIRE is now in the process of gathering the information base on regulatory incentives through the use of mail and phone surveys. Once an incentive is identified through the survey, the Solar Center will begin to collect all available files and documents pertaining to statutes, rulings and decisions, legislation, fact sheets, reports and other information describing the incentive program. All available legislative statutes regarding state financial incentives have already been collected and digitized. This information is available to any state agency, utility, public interest group or consumer upon request.

Ensuring that an adequate number of surveys are returned and the most significant programs and incentives are identified is a challenging task. Extensive follow-up telephone contact is necessary with many of the key audiences, including state energy offices and utility commissions. In many instances, IREC and NCSC seek the assistance of the chapters of the Solar Energy Industries Association and the American Solar Energy Society in identifying needed information and key contacts. IREC's contacts in each state, as well as members of the Energy and Environment Committee for the National Association of Regulatory Utility Commissioners, and the National Association of State Utility Consumer Advocates are being contacted for leads, referrals and information.

In addition to using surveys as a core base of information, the DSIRE project is also performing electronic searches of several databases which may have useful data. Using a selected group of key search words, a number of electronic sources are being examined through the internet, bulletin boards and databases accessed by fees and subscriptions. Examples include Dialog, Lexis\Nexis, FedWorld, internet web sites operated by such organizations as the National Renewable Energy Laboratory, U.S. Department of Energy, National Conference of State Legislatures, Solar Energy Industries Association and many others. Searches are also made of literature and periodicals that are appropriate.

4. STATE GOVERNMENT FINANCIAL INCENTIVES FOR RENEWABLE ENERGY

The first DSIRE report addresses financial incentives offered by state governments in support of renewable energy technologies and applications. Included among these incentives are the following:

- personal income tax credits and deductions;
- corporate franchise and income tax credits, exemptions and deductions;
- sales tax exemptions and rebates;
- property tax exemptions;
- accelerated depreciation of renewable energy equipment;
- industrial recruitment programs (e.g. Virginia's payment to PV manufacturers for production of modules);
- technology and demonstration project grants; and
- special loan programs.

Each of these incentives is identified in the report by state, incentive type, end use sector (residential, commercial, industrial, etc.), and applicable renewable energy technology. Agencies and contact persons responsible for overseeing the incentive are identified. Also, the mechanics of each financing tool are described, along with information on the volume of users and amounts of funds dispensed or allocated, if available.

5. STATE REGULATORY INCENTIVES FOR RENEWABLE ENERGY

The second DSIRE report to be issued will cover regulatory incentives for renewable energy that have been provided or mandated by state regulatory agencies and legislatures in support of renewable energy technologies and applications. Included among these incentives are the following:

- net billing rules;
- special utility rate structures;
- findings, programs, and directives emanating from Integrated Resource Planning proceedings;
- provisions that require the incorporation of environmental externalities and other societal costs in utility planning;
- set asides;
- green pricing and power programs;
- disclosure and certification of green power;
- line extension analysis and charges;
- DSM programs that include financial incentives for renewables;
- solar access laws or regulations;
- portfolio standards;
- provisions for improving the competitiveness of renewables in state construction bidding;
- contractor licensing and equipment certification requirements;
- incorporation of renewables in state construction projects;
- special programs (e.g. the N.C. Alternative Energy Corporation, which was initiated by the state utility commission and funded as a surcharge to each utility company's rate base);
- support services provided as a result of state funding (e.g. N.C. Solar Center's and Florida Solar Energy Center's design review, information, technical assistance and training programs).

In this report, each incentive will be described in detail. As in the financial incentives report, agencies and contact persons responsible for creating and overseeing the incentive would be identified, along with those utilities or business sectors impacted by the incentive. Only those incentives that are “on the books” will be databased.

The DSIRE reports include graphs and charts that illustrate the incentive information and make it readily accessible. All reports are indexed by program or incentive type, state, end use sector, and renewable energy technology.

6. DISSEMINATING INCENTIVE INFORMATION

Focusing on its primary audiences—regulatory bodies, state agencies and the solar industry—the DSIRE project is using a number of tools to disseminate the databased information. Key activities conducted by the project include:

- sending copies of the reports to survey respondents, state energy offices, utility commissioners and advocates, utility managers, environmental organizations, renewable energy manufacturers, state legislative leaders, and other key decision-makers and appropriate officials;
- distributing the searchable database application on diskette and on the internet website.
- publishing and mailing a brochure which describes DSIRE and its services to utilities, regulatory agencies, state

legislators, state government staff and renewable energy firms and organizations;
- writing papers and articles that summarize the results of the survey and database for publication in trade journals, magazines and/or proceedings of key national and regional associations; and
- making information accessible to industry, utilities, government agencies, and the public through the internet website.

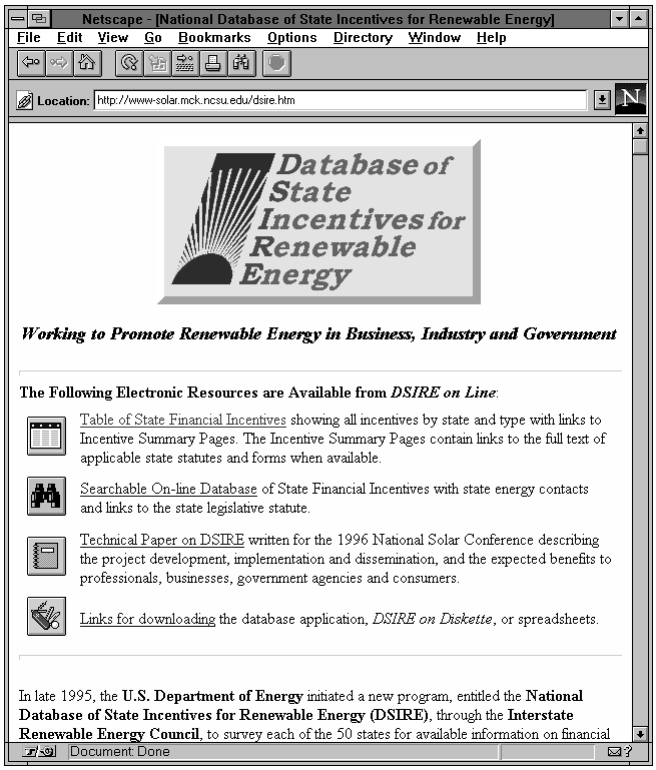


Fig. 2: Screen shot of DSIRE World Wide Web interface.

The internet website offers ever expanding opportunities for distributing information. The DSIRE homepage contains links to project documents, links for downloading files, and two methods for searching the database—through a table or by a web based form. The table presents an immediate picture of the incentive activity in each state and incentive type. The incentive types across the table column headers and the states listed down the row lables provide quick links to the two main search pathways. The form based interface for searching the database adds two additional search pathways—by renewable energy technology or by eligible business sector. The search engine used to link to the Microsoft Access database is Cold Fusion running with O'Reilly's WebSite. The advantage to internet databases is the ability to access the most recent data set. Contrasted with the database application, the disadvantage is that the search capability is not as complex; however, improvements in JAVA and document access techniques like CyberDog will soon make possible innovative and complex applications on the desktop linked to internet information sources. The DSIRE web address is "http://www.ncsc.ncsu.edu/dsire.htm."

Custom searches of the DSIRE database and archives may be made by the project staff upon request and the results provided by electronic mail, computer disk, fax or hard copy. Such searches include information contained in project files but not actually incorporated into the database, including articles and publications describing the incentive, text of statutes, text of regulatory commission rulings, and other appropriate reports and publications.

By utilizing the wide range of dissemination strategies as listed above, information on DSIRE services can be distributed information and services to key constituencies across the U.S.

7. STATUS OF STATE FINANCIAL INCENTIVES

As of March 1997, all state agencies that administer renewable energy incentives had been contacted. Almost all of the 50 states provided detailed information concerning their incentive programs. This information has been entered into the database application and is currently being made available over the internet.

The information obtained so far indicates that 11 states do not have some form of incentive. Of that 11, two have property tax exemptions still in effect for structures built prior to 1985 but not for new buildings, three support alternative fuels programs that do not explicitly mention ethanol, and five have legislation specifically indicating the need to reduce reliance on foreign sources of energy by supporting the development of renewable energy resources.

The most common incentive type is some form of loan or grant program for energy conservation, renewable energy applications, innovative energy projects, and/or energy research. In total, there are separate programs in 31 states. Next common are: property tax incentives, 17; personal income tax credits, 13 states; corporate tax credits, 10; sales tax exemptions, 9; and industry recruitment incentives, 7.

The most volatile incentive program types are loans and grants, where nine new incentives were added and two were lost since a 1993 survey was published by the N.C. Solar Center. This, we believe, is due primarily to the perception that revolving loan programs, lease-to-purchase loan guarantees, and outright grants put financial resources directly into the hands of the customer, business, or institution for the lease or purchase of equipment. Of special note is the recent passage of California Assembly Bill 1890 that created a statewide, non-bypassable separate rate

component that will fund, in part, renewable energy development projects.

Property tax incentives have declined the most, due primarily to the pressure on local and state governments to raise revenue. Personal and corporate income tax incentives have generally maintained their status with new programs in Arizona, Idaho, Texas and Puerto Rico off setting the loss of programs in California, Colorado, Missouri and Utah.

The incentive picture for most states is relatively good. Some states are predicting the elimination of grant programs with the eventual end to petroleum violation escrow funds. However, most states are not experiencing undue pressure to dismantle income, sales or property tax incentives at this time. Refer to Table 1 for a summary of existing financial incentive programs.

8. STATUS OF STATE REGULATORY INCENTIVES

The regulatory picture for renewable energy incentives has been complicated this last year due to the increase of activity in utility restructuring. As a result, the line between market-based, utility-driven incentives and regulatory-based, commission-driven incentives is rapidly blurring.
As utilities position themselves for market share, they are beginning to see the value of representing themselves as "green power" suppliers. This is happening at a frenetic pace in the Northeast. Market posturing is, at times, nothing more substantial than a good ad campaign and a broad definition of what "green power" includes. However, there are real opportunities for expansion of renewable energy markets to meet the consumer demand.

The conventional legislative regulations that affect renewable energy technologies have remained somewhat untouched in the past few years. These regulatory incentives include: requirement of solar energy contractor licensing, funding of research & outreach programs, and solar access laws. However, a new crop of legislative incentives has begun to appear primarily in regards to state construction projects. These include a requirement that, during construction bidding, if a bid contains renewable energy systems, that it be evaluated monetarily at a reduced cost equal to the amount of the renewable energy equipment or by a certain percentage. The other example is a requirement that all state construction projects evaluate the cost effectiveness of renewable energy systems such as daylighting for schools or photovoltaic lighting for parks.

TABLE 1. SUMMARY OF STATE INCENTIVES 2/28/97

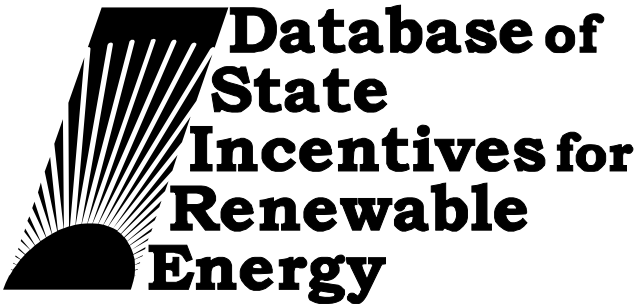
State	Income Tax	Corporate Tax	Sales Tax	Property Tax	Industry Recruit.	Accel. Deprec.	Special Grants	Loan Programs
Alabama	■							■
Alaska		■						■
Arizona	■	■	■		■			■
Arkansas							■	
California							■	■
Colorado							■	
Connecticut	■	■	■		■			■
Delaware								
District of Columbia								
Florida								
Georgia								
Hawaii	■	■	■					
Idaho	■							■
Illinois				■			■	
Indiana				■				
Iowa			■	■			■	■
Kansas							■	
Kentucky								
Louisiana								
Maine								
Maryland			■	■				■
Massachusetts	■	■	■	■	■		■	
Michigan								
Minnesota			■	■		■		■
Mississippi								■
Missouri								■
Montana	■			■			■	■
Nebraska								■
Nevada				■	■			
New Hampshire				■				■
New Jersey			■					
New Mexico								
New York							■	■
North Carolina	■	■		■	■			■
North Dakota	■			■				■
Ohio								
Oklahoma	■	■						
Oregon	■	■		■				■
Pennsylvania							■	
Puerto Rico	■							
Rhode Island	■	■		■				
South Carolina								
South Dakota				■				■
Tennessee								■
Texas		■		■	■			
Utah								
Vermont							■	
Virgin Islands							■	
Virginia				■	■			■
Washington			■					
West Virginia								
Wisconsin				■			■	
Wyoming								■
Totals	13	10	9	17	7	1	12	22

On the public utility commission side of regulatory incentives, there are the more conventional type of incentives, such as the required incorporation of renewables into utility demand side management programs; set asides, portfolio standards, and the required assessment of environmental externalities into utility planning procedures; and integrated resource planning findings, programs and directives. These incentives are becoming less relevant as PUC's move toward open competition among energy suppliers through deregulation and restructuring.

The newer variety of regulatory incentive addresses the concerns of equal access to the distribution and consumer pool by renewable energy independent power producers. In addition, new incentives cover the availability of net metering to small-scale residential and commercial renewable energy systems.

Another issue that is being considered at the PUC level are consumer protection controls that may become necessary as competition amongst utility companies heats up. With more utilities selling "green power," there is a need, on behalf of the consumer, to certify that the source of the power is environmentally beneficial and that the source of the energy purchased under these programs be disclosed. Whether or not PUC's will intervene in the setting of special rate structures that support the devleopment of renewable energy is not clear.

The distinction by PUC's between protecting the consumer and interfering in corporate business decisions is becoming more and more difficult under restructuring. Advances in the implementation of net metering, green pricing and marketing, special utility rate structures, and line extension analysis are examples of market-based incentives that were formerly utility implemented, but are now often developed as part of a broader utility restructuring legislative mandate. Today, the certification of green power, allocation of system benefit charges to renewables projects, and development of portfolio standards are regulatory incentives promoted as part of utility restructuring but usually administered by non-utility entities. This reshuffling of roles and responsibilities will take years to settle out.

The DSIRE project expects to complete its initial survey of regulatory incentives and post this information on its website by June, 1997. The full report on regulatory incentives will be available in July, 1997.

For additional information on DSIRE, contact the N.C. Solar Center: tel: 919-515-3480, fax: 919-515-5778, email: ncsun@ncsu.edu, or http://www.ncsc.ncsu.edu/dsire.htm.