

JUL 12 1983

TO: LL Presidents, please forward 2nd copy to
Energy or NR Chairman; DPM
FROM: Laura Keever, Energy Director
10515 Laneview
Houston, TX 77070
(713) 469-0036

LWV-Texas
July 1983
LL Pres. Mailing (2); DPM
II. A. l. b.
Program - Energy, Nuclear

With the demise of the Texas Energy and Natural Resources Advisory Council (TENRAC), which failed to pass the Sunset process, my attention has been given to the surviving parts. Specifically, the Energy Efficiency Division will be moving to the Public Utility Commission by the end of the summer. Its survival is due to federal funds which underwrite it--not to an inspired legislature!

In addition, the personnel in the High Level Nuclear Waste Division have already been moved to the Governor's office. Therefore, if you need to reach either Steve Frishman or Danny Smith, their address and telephone number are:

Governor's Office of General Council
Nuclear Waste Projects Office
P. O. Box 12428
Austin, TX 78711
(512) 475-4444

This office is closely watching developments in high level nuclear waste as well as low level waste.

I presented a statement in May at the Department of Energy hearing in Austin (hearings were also held in Tulia and Hereford) concerning the possibility of a high level waste site in Swisher or Deaf Smith county. I have sent a copy to selected Leagues. If your League hasn't received one and would like to have one please contact the state League office.

Studies are proceeding by the Texas Low Level Radioactive Waste Disposal Authority so that several potential sites can be identified by August 1, with a final site being recommended by October 1. The public hearing is also projected for October. I am following these developments closely, and your League should be receiving a mailing from the Authority soon containing informational materials. Their address is:

Texas Low Level Radioactive Waste Disposal Authority
1300-C East Anderson Lane, Suite 175
Austin, TX 78752
(512) 835-6795

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ENERGY 26

Natural Gas

In short

Natural gas is a premium source of energy-- clean, efficient, and versatile. It supplies 27% of U.S. energy requirements (second only to oil), serving 160 million consumers. Concern mounted when, in the 1970s, our domestic supplies of this convenient resource were being used up faster than new reserves were being discovered. Today the outlook for gas supplies is brighter, so attention is focused on the need to achieve a political consensus on how to encourage the most efficient use of this valuable finite energy source.

Background

Under heat and pressure and in the absence of oxygen for long periods of time, organic matter decomposes and converts into a variety of fossil fuels, including methane (the principal component of natural gas). Of all the fossil fuels, methane contains the most hydrogen, making it the most efficient. It also has the simplest and most stable chemical structure, so it is the least polluting fossil energy source.

It is no surprise, then, that when a million-mile transcontinental underground pipeline and distribution system was completed after World War II, natural gas became a major fuel for American homes, businesses, farms and factories. By the 1970s, natural gas-- almost all produced domestically-- accounted for a third of our national energy use.

In the intensive national investigation of our energy diet conducted in the wake of the Arab oil embargo of 1973, the decreasing production of domestic natural gas drew at least as much attention as did our growing reliance on imported oil. At that time, we were using twice as much as we were discovering. Some contended that the shortages were the result of federal price controls that made exploration an unattractive investment. Nonetheless, dire predictions of pending shortages and the rapid depletion of known reserves led to the adoption of some strict measures, notably, the *Power Plant and Industrial Fuel Act of 1978*, which restricted use of natural gas. Such steps, combined with consumer conservation, did produce results: the percentage of natural gas in the energy mix dropped from one third to about one quarter of the total. All the same, natural gas still heats the majority of U.S. homes and businesses and fuels nearly 40% of American industrial and agricultural processing facilities.

Supply outlook

The supply picture for the eighties differs significantly from the bleak forecasts of the seventies. Since passage of the *Natural Gas Policy Act of 1978*, which began the phased decontrol process for new natural gas, the decline in domestic production of natural gas has levelled off. Technical advances and

rising prices have also made some difficult-to-recover, expensive gas supplies cost-effective; others are on the verge of becoming competitive.

Current projections for gas supplies are based on three types of domestic gas resources--conventional, unconventional, and synthetic gas--and imports--via pipeline from Canada and Mexico or liquefied natural gas (LNG) from around the world. Each is discussed briefly below.

Conventional gas

Conventional gas supplies are those geological deposits of natural gas economically recoverable through commonplace technology. Until now, most conventional gas supplies have come from relatively shallow, on-shore deposits, primarily in Texas and Louisiana. In the future, however, the following new conventional sources are expected to play a larger role.

- *Deep onshore deposits*--gas obtained from depths greater than 15,000 feet beneath the earth's surface.
- *Offshore drilling*--gas recovered from the Outer Continental Shelf, the ocean bed surrounding the 21 coastal states and Alaska.
- *Alaskan gas*--this gas has not been used much because of transportation difficulties.

Conventional gas resources will last for 50-60 years at current consumption rates; of that, 66% would come from the "lower 48" states, 16% from Alaska and 17% from offshore drilling.

Unconventional gas

Unconventional sources of natural gas are those in less permeable rock formations and/or under great pressures and temperatures. This makes the gas costly to drill and to produce, so little commercial development has occurred to date. Industry is looking for better ways of fracturing the rock and increasing the recovery rate in order to produce this gas at a competitive price. The four unconventional sources are:

- *Tight sands*--In parts of the West and Southwest, thin layers of natural gas produced by the decomposition of river sediments are sandwiched between blankets of other minerals. Small amounts have been produced commercially, but the density of the intervening rock makes extraction slow and costly.
- *Devonian shales*--Large deposits of thick shale rock exist in the Appalachian, Michigan and Illinois basins in eastern United States. The low production rates and difficulty of fracturing the shale have slowed development of this source.
- *Coal seams*--Methane gas is a by-product of coal formation and production, but gas trapped in coal beds is often allowed to escape because it is difficult and expensive to collect it.
- *Geopressured brines*--Coasts in the Gulf of Mexico contain huge underground sandstone and shale reser-

voirs saturated with hot salt water (brine) and natural gas. But the difficulties of dealing with the high temperatures and pressures involved send the price of recovering this gas soaring.

While estimates of the potential for unconventional gas are very speculative, some experts predict that such sources could contribute between 200 and 3,000 trillion cubic feet of gas (10-150 years of current demand) and that by the year 2000, production of unconventional resources could nearly equal one-third the present production of conventional gas.

Synthetic gas (SNG)

Other materials, primarily coal and renewable resources such as municipal garbage and sewage, livestock and agricultural waste and energy crops or "biomass," can be transformed into methane. (For more information see Coal Gasification: An Uncertain Future, LWVEF pub. #550, 20¢.) SNG has great potential: both coal and renewable resources abound, and SNG technologies are fairly straight-forward. Several pioneer commercial projects for SNG are currently underway and should be operational by 2000. But unanswered questions about environmental and land use impacts and economic feasibility dim the outlook for SNG. Experience to date indicates that SNG will not be cost effective unless the prices of other energy sources rise substantially.

Gas imports

Currently, the United States imports about 5% of the gas we use, most from Canada via pipeline. The rest comes from Mexico, also by pipeline, or from Algeria in the form of liquefied natural gas or LNG natural gas converted to its liquid form, 1/600th of its original volume, for reduced transportation costs. There are now enough excess supplies worldwide that the U.S. could double or triple its gas imports. The primary obstacles are not technical but political--whether other countries will invest in LNG equipment and whether the U.S. wants to increase its reliance on foreign energy.

How much will it cost?

How much of this potential is actually realized depends largely on the economics involved--how much it costs to obtain the gas, how much the producers and distributors can charge for it, and how consumers react to the price. This leads into the highly contentious issue of pricing natural gas. The federal government has been grappling with this problem since 1938, when the beginnings of the gas pipeline system brought natural gas into the realm of interstate commerce. At that time, Congress began regulating the price gas pipeline companies could charge for interstate service. An historic 1954 Supreme Court decision extended federal price controls to the producers of interstate gas. Gas produced and sold within the same state was not under federal price regulation.

Although price controls were always controversial, it was not until gas supplies became tight that the vagaries of this system were revealed. By the 1970s, when demand for gas exceeded supply, producers could and did get higher prices from intrastate customers than in the interstate market, with its price controls. As a result, most of the gas not already under contract flowed into the intrastate markets. The interstate gas system experienced supply shortages, disrupting businesses dependent on this energy source. Many main-

tained that federal price controls kept natural gas prices artificially low, discouraging production of new gas and conservation of existing gas. In response to these problems, Congress passed the *Natural Gas Policy Act of 1978* (NGPA), after an intense legislative battle. This law provides for the gradual deregulation of most "new gas" (gas from wells drilled from 1977 on) by 1985, but keeps price controls on most "old gas" (pre-1977) until supplies are exhausted (probably in the 1990s). NGPA also subjected intrastate gas to the same price controls as interstate gas, and immediately decontrolled some categories of gas.

NGPA has not quelled disputes over natural gas pricing. Today the debate goes on, centering on questions like:

Should the pace of deregulation be stepped up?

The NGPA intended to increase the price of gas gradually to bring it up to the price of oil, but its pricing schedule was based on projections of \$15 per barrel of oil in 1985 (constant 1977 dollars); today's oil is selling for almost double that. Consequently, natural gas remains an energy bargain. Many fear that total decontrol in 1985 will cause gas prices to shoot up, damaging the economy; they want Congress to increase prices more rapidly now to avoid a steep "price hike" later on. They also argue that since the present law underprices gas, this valuable resource is still being used inefficiently. But others contend that gas prices are rising at an adequate rate and that 1985 will not bring a large price hike. They say any further increase would only fan inflation.

Should gas prices be tied to OPEC oil prices?

Part of the argument over accelerating the NGPA schedule lies in differences over this question. Some think that natural gas should be priced according to the costs of home heating oil, the closest substitute to natural gas. Only by charging the full market value or "replacement cost" for gas, they say, will gas be used efficiently and will producers develop the high-cost categories of gas necessary to free us from dependence on imported oil. But others counter that the United States should not allow an international oil cartel to set prices for our domestic gas resources, especially since this will cause great hardship for industries and individuals (particularly low-income households).

Should old gas be deregulated?

Advocates of a free market system for natural gas object to continued price controls on any gas, even old gas. They claim that complete decontrol is necessary for efficient production and use of natural gas. Opponents respond that removing controls on this existing gas doesn't add to gas supplies--only to the coffers of the gas producers.

Should a "windfall profits" tax accompany decontrol?

Again, free market adherents oppose any such interference in the market. Others are convinced that a tax on gas at the wellhead is required to eliminate a massive transfer of wealth from consumers to producers and to gather funds to mitigate the effects of rising gas prices on the poor.

Strong differences of opinion over such questions have stymied attempts to establish a coherent national policy on regulating the production and use of this valuable finite national resource.



energy file

5/25/82

memorandum

This goes on DPM

TO: State and Local League Presidents

FROM: Dorothy K. Powers, Energy Chair

RE: Scientific American article that cites survey of LWV on risks

In the February 1982 edition of Scientific American, a chart on risk perception appears in Arthur C. Upton's "The Biological Effects of Low-Level Ionizing Radiation." The chart summarizes the results of a survey in which members of three groups, including the League of Women Voters, were asked to rank 30 sources of risks. The article implies that a representative sample of the LWV's national membership participated in the survey. However, the survey, which was conducted in 1979, only included 40 members of the local League of Women Voters of Eugene, Oregon. These LWV members ranked nuclear power first among sources of risk -- that is, they believed that nuclear power had the potential for causing more deaths annually than smoking, handguns, and other activities.

The article and survey results have caused great confusion among many Leagues and the general public. To help clarify the situation, Ruth Hinerfeld has submitted a letter to the editors of Scientific American pointing out the shortcomings of the survey and stating: "We believe that the way in which the survey results are presented in this chart suggests that the opinions presented were those held by League membership in general, rather than the personal views of a few. This presentation is inaccurate and misleading, and does an injustice to our nationwide membership. Therefore, we ask that you correct the record by bringing these facts to the attention of your readers."

ENERGY 8

Tapping Our Coal Reserves

In short

Ever since 1974, the inception of President Nixon's Project Independence, government policy has promoted coal as a means to reduce U.S. reliance on imported oil. Nevertheless, the potential for this vast resource remains largely unrealized. This publication gives an overview of some of the issues involved in expanding use of this plentiful domestic energy source.

Background

From 1850-1950, coal was America's premier energy source, contributing nearly three-quarters of the total energy mix. This continued until 1950, when the U.S. began consuming more petroleum (oil and natural gas) than coal. The switch was triggered not by a shortage of coal--which was and still is in abundant supply--but by the attractions of petroleum: cleanliness, ease of extraction, transportation and use, and versatility, all at a low price. Reliance on coal dropped, until in 1973 it was supplying only 18% of the total U.S. energy use.

The 1973 Arab oil embargo was the catalyst for a renewed search for domestic energy supplies to replace imported oil. Chief among them is coal, which accounts for over 80% of recoverable U.S. energy reserves (that is, resources we can technically develop at today's prices). America's 166 billion tons of coal reserves--the world's largest reservoir--would last for 350 years at current consumption rates.

However, by 1980 coal was still only supplying just over 20% of total U.S. energy usage. This low figure is not due to an inability to recover the coal. In 1980, the U.S. coal industry produced a record 792 million tons, and claims it could have mined another 100 million tons. Nor is the problem purely economics. In fact, coal sold in 1980 for \$1.42 per million BTUs (the standard measure for heat)--a real bargain compared to imported oil, which cost \$5.40 per million BTUs in 1980.

Instead, the major roadblock to greatly increased usage of coal is coal itself--its physical and chemical nature. Raw coal, a solid fossil fuel lacking the versatility of oil or gas, cannot replace petroleum in many of its major uses (for example, it can't substitute for gasoline to run cars). In addition, coal is a relatively "dirty" fuel. Burning it produces a host of life-threatening or health-impairing airborne pollutants, so coal-fired plants require fairly complex and expensive environmental protection technology. Thus, much of the cost of using coal lies not in the resource itself, but in the high capital costs of the equipment needed to handle it and to capture its efflu-

ents. Therefore, coal is usually most cost-effective in facilities that consume or produce large amounts of energy, such as electric utilities, which burned 80% of U.S. coal in 1980.

How should we use our coal?

In the quest for ways to expand coal use without severe social, environmental or economic disruptions, debate has centered on the following four options:

Increased industrial consumption

In 1980, 18% of the coal used fueled industries or was used for coke in making steel. Increased American coke production is unlikely, but gains in other industrial areas are possible. Coal can be cost-effective in big industrial boilers as compared to oil and gas.

The *Fuel Use Act of 1978* promotes this use of coal by prohibiting the construction of new large oil- or gas-fired industrial boilers. However, since this law applies only to new or replacement boilers, it will be awhile before it has much impact on the coal market. Nor does it affect the many smaller industrial facilities throughout the country. But some new technologies such as fluidized bed combustion (see below) may make coal more practical for smaller-scale use.

Coal conversion technologies

Another option for increasing coal use is to transform it into a substance that can substitute directly for oil or gas. The two processes for turning coal into such a fuel are:

Coal Gasification A technique for changing coal into a synthetic natural gas has been around for 150 years, but additional work is needed on a commercial-scale process for coal gas that is interchangeable with pipeline-quality natural gas.

Coal Liquefaction Coal can also be made into a liquid fuel by adding hydrogen through a series of chemical processes or by liquefying coal gas.

These processes, while they look promising, are still under development. So there remain many questions about the cost-effectiveness and the environmental effects of such coal conversion techniques. In addition, a major policy question currently at issue is how much money (if any) the government should spend to foster the development of these technologies.

Conversion of existing electric plants

Half of the electrical generation in America in 1980 was fueled by coal; the other half was fairly evenly split between oil-burning plants, gas-fired plants,

nuclear power and hydroelectricity. Many believe that converting electric power plants that now burn oil or gas to coal-fired facilities presents the greatest near-term opportunity to increase coal use. To do so, however, requires making substantial alterations in the plant. Even so, it is often cost-effective for a utility to make these changes because of the price advantage domestic coal has over imported oil. But two things can prevent a utility from making the switch:

Environmental Concerns Plants in congested areas may lack the necessary space for proper handling of coal wastes and other pollutants, while plants in localities with poor air quality may have difficulty getting permits in view of the sulfur and other emissions.

Financial Problems Utilities in poor financial condition lack the up-front capital to pay for the plant changes and thus must borrow the necessary money at unacceptably high interest rates. In addition, many state utility commissions will not allow utilities to charge customers for such plant alterations until the facility starts generating electricity, but will allow them to pass on hikes in fuel prices to consumers immediately through a fuel adjustment clause.

New coal-fired electrical power plants

Since the *Powerplant and Industrial Fuel Use Act of 1978* forbids utilities to construct new facilities that burn oil or gas, coal and nuclear power will probably fuel the majority of new plants. Decisions on building a coal versus a nuclear power plant will be based on a number of considerations, not the least of which is economics. Which fuel has the economic edge varies from plant to plant and is dependent on many factors that turn on federal policy and regulatory decisions. Some are outlined below:

Air pollution control To address the effects of coal burning on public health and the environment, the *Clean Air Act of 1970* (as amended in 1977) put stringent limits on the amounts of pollutants coal facilities could release into the air. To meet these limitations, new coal-fired power plants must incorporate pollution control features, such as flue-gas scrubbers (which bring coal combustion gases into contact with a substance that removes sulfur oxides through chemical reaction); improved boiler design (which reduces nitrogen oxide emissions); and electrostatic precipitators or fabric filter baghouses (which filter out particulate matter from flue gases).

Such pollution control devices are quite effective. But, unfortunately, they are costly and difficult to maintain; they also reduce the efficiency, and hence the energy output, of the facilities. Scrubbers alone add about 15-20% to the capital and operating costs of a coal-fired plant. So investigations into cheaper, more effective ways to control the environmental impacts of burning coal are ongoing. One promising new technique is fluidized-bed combustion, in which coal suspended in a stream of air is burned in a mixture with limestone that absorbs the sulfur. Fluidized-bed combustion, which reduces both sulfur and nitrogen oxide emissions, appears to be cheaper, more efficient and more reliable than scrubbers, but it is still only in the developmental stage.

Mining There are two methods of getting coal--surface or strip mining and underground mining. Surface min-

ing, which uses powerful machinery to remove a relatively thin layer of rock, soil and vegetation (the "overburden") that covers the coal seam, is the cheaper and more efficient technique (although it can't be used in all mining areas). However, strip mining can pollute the water, destroy the land and contribute to floods and landslides.

To combat these ecological problems, Congress enacted the *Federal Surface Mining Control and Reclamation Act of 1977*, which mandates specific environmental protection measures for mining operations and requires restoration of the land once mining is completed. But some claim that the regulations as formulated are overly restrictive and needlessly escalate costs without enhancing environmental quality.

Underground mining produces less environmental disruption, but is more expensive, leaves more coal in the ground, and exacts a high toll in human lives due to explosions, flooding, cave-ins and respiratory diseases such as black lung. The *Coal Mine Health and Safety Act of 1969* has cut fatalities from deep mining in half by requiring better safety equipment and ventilation in the mines. But the improved safety measures have contributed to the declining productivity of American mines and have boosted coal costs.

Transportation Shipping, especially for western coal delivered to the major coal markets in the East, can be a substantial portion of the price of coal. Railroads transport 65% of American coal, but at rates higher than charged for some other cargo. The rail industry says that deregulation of its business will bring lower prices, but some fear that an uncontrolled rail industry will discontinue service on less profitable coal routes. In addition, debate exists over who should pay for the capital improvements necessary to accommodate substantially increased coal traffic.

A major alternative to rail transport is coal slurry pipelines, in which pulverized coal in water is piped to interstate coal markets. While theoretically inexpensive, the technique presents severe water-use problems in the water-scarce West. Also, coal slurry routes must almost inevitably cross land over which railroads have the right-of-way, and the railroads have refused to cede their rights to a competitor. Federal legislation to bring about this concession have failed to date.

Unresolved issues

Regardless of which expansion option is pursued, worrisome questions will arise, including:

Carbon dioxide build-up All fossil fuels release carbon dioxide (CO₂) when burned, but coal emits twice as much as any other fossil fuel. Many scientists believe that the atmospheric accumulation of CO₂ may cause a gradual warming of the earth's climate which could lead to serious changes in our ecosystem.

Acid rain The sulfur dioxides and nitrogen oxides emitted into the air by coal combustion can undergo chemical transformation and return to the earth as dry acid particles or as acid rain. The resultant increase in acidity can wreak havoc with the environment.

Water use Aspects of increased coal development--particularly coal slurry pipelines and converting coal to a gas or a liquid--require much water, which may strain water resources, especially in the West.

ENERGY 25

The Squeeze Toward Global Energy Cooperation

In short

Many developing countries now face an energy crisis of major proportions that is affecting all aspects of their economic and social development. Every dollar they must spend to import the oil they need to grow means one less available for building industrial and agricultural infrastructure, improving housing, health and education programs and meeting other basic needs of an expanding population. But the energy crisis is not limited to oil. Even those developing societies that rely on forest and farm-based fuels are facing serious energy-related problems. Nor are the oil-exporting developing nations immune from the consequences of today's energy crisis. While each developing country struggles on its own to choose among many competing economic, social and political priorities, there is a collective concern among energy-rich and energy-poor countries about the importance of easing the worldwide pressure of the energy crisis. However, just as there is no short route to development, there are no quick fixes for the energy crunch.

Background

At the moment, the oil-importing developing countries account for only a small part--approximately 14 percent--of the world's total oil consumption. As their economies grow, however, consumption of energy is expected to increase, rising by more than 80 percent during the 80s (compared to 30 percent in the industrialized countries), according to the World Bank. For 90-plus developing countries that rely almost totally on imported oil to meet their energy needs, this will mean correspondingly greater spending for oil imports--rising from \$74 billion in 1980 to about \$200 billion in 1990, according to the World Development Report 1980. As a result, their trade deficits can be expected to exceed the 1980 level of \$70 billion.

Important though oil is for industrial development, three-quarters of the developing world's population still depend on firewood, charcoal, crop residues and animal dung for cooking and heating their homes. Though wood makes up about 5 percent of the global energy budget, it supplies roughly one quarter of the energy used in developing countries. In some countries such as Mali, Tanzania, Nepal, Ethiopia, Haiti and even oil-rich Nigeria, 90 percent or more of the people cook with this traditional fuel. In larger towns and cities, wood is used in the form of charcoal because it is lighter and cheaper to transport.

At present rates of use, experts estimate that forests in developing countries are likely to shrink by 40 percent in the next two decades. Some observers see in this rate of deforestation early signs of a "second energy crisis." Coming in the midst of adjustments to the era of more expensive oil imports, the firewood problem has raised its own set of economic, social

and environmental concerns. As forests disappear, costs rise and the time women and children spend gathering wood increases. The secondary effects of the squeeze on forests may be an even greater cause for concern. Deforestation leads to erosion, siltation and desertification, and these reduce the amount of arable lands as well as the water supplies needed for irrigation, sanitation and electricity. As fuelwood supplies are exhausted, people burn animal and crop residues, depriving the soil of valuable nutrients.

Though less hampered by money shortages, the 25-plus oil-exporting developing nations must cope with inflation and its impact on plans to diversify their economies. Most are in a feverish race to industrialize before their one resource runs dry. With one-fifth of the developing world's population, some of the oil-exporting nations are strapped with large, rapidly growing populations--Indonesia, Nigeria and Mexico, for example. Most are underdeveloped, with low literacy rates, short life expectancies, unskilled labor forces, low levels of technology and little diversified development outside the oil sector.

Differing viewpoints

These all-too-evident trends--ever-increasing energy bills and scarcity of some conventional energy sources--have begun to focus attention on the need to develop a global energy strategy. Views on such a strategy, however, are as varied as are opinions on the sources of the energy problem.

Developing countries see in the energy situation a symptom of a more comprehensive problem: the structure of the international economy established by the industrialized nations in the Bretton Woods agreement concluded after World War II. That structure, they argue, puts developing countries at a disadvantage in trade, international finance and investment and in the decision-making institutions that govern the world economy. They want to link energy discussions to reform of the international economic system as part of a package leading to a "new international economic order" (NIEO).

Having gained sovereignty in the 1970s over their petroleum resources, the oil-exporting developing countries view with great suspicion any attempts to draw them into political agreements that would once more limit their freedom of action on price and supply. Through the Organization of Petroleum Exporting Countries (OPEC), which includes 13 oil-producing countries, the oil producers have taken a leadership role in advancing proposals for economic reforms. The exporting countries with a capital surplus (Saudi Arabia, Kuwait, United Arab Emirates, Qatar, Libya and Iraq) are also providing financial assistance to developing countries, contributing an average of 4 percent of their Gross National Product (GNP) during 1974-79 (compared to .35 percent of GNP by the industrialized

nations). Mexico and Venezuela have also set up their own system to supply Central American and Caribbean developing countries with oil at prices effectively discounted by one-third.

The industrialized nations resist linking energy negotiations to discussions about NIEO. And, they have avoided using UN forums for discussing energy issues, preferring to meet within developed-country groups like the European Community, Organization for Economic Cooperation and Development and specially convened summit meetings where the agendas reflect industrial nation concerns. With the exception of an emergency oil-sharing plan, the developed countries have failed to agree on a unified strategy. For them, energy use is a national responsibility. Conservation, alternative sources and pricing policy are seen as tools for reaching energy self sufficiency--the oil importers' goal.

A search for solutions

Despite their differing viewpoints, oil-producing and oil-consuming nations have a mutual interest in keeping the world economy performing well, speeding the transition from oil to renewable and other more plentiful sources of energy and resolving common energy problems in ways that protect the world's ecosystems. These common concerns have not produced a global energy strategy, but there are many efforts underway to improve international cooperation and to provide assistance to oil-importing developing nations.

At the August 1981 UN Conference on New and Renewable Sources of Energy held in Nairobi, 125 participating nations agreed to a Plan of Action calling for rich and poor nations "to make a rapid transition to more sustainable patterns of energy use." The plan, which was drafted during two years of preparation and finalized at the conference, highlights the pressing need to overcome fuelwood shortages in many regions of the Third World, calls for increased research and development and training to develop renewable energy technologies and urges stepped-up technology transfers from industrialized to developing countries.

Much of the political dynamite of the conference had been removed early in the planning phase by excluding oil, nuclear power and other conventional sources of energy, including conservation, from the agenda. But other controversies, most notably disagreement over how to finance development of renewable resources in developing countries, proved to be divisive. The United States, in particular, stressed the need to involve the private sector in financing renewable energy projects and in transferring technology. This stance clashed with developing-country desires to see an international effort coordinated and funded through the United Nations. In the end, delegates agreed to disagree by establishing a relatively powerless body within the United Nations to coordinate UN renewable energy programs and to report within a year on the need for new institutional or funding arrangements.

One funding arrangement that has not gotten off the ground is an expansion of the World Bank's lending for energy development through a separate, new Energy Affiliate. The United States has repeatedly rejected this proposal, arguing that it is costly and unnecessary. The United States emphasizes that the private sector should be given financial incentives to invest in energy development, and that the World Bank should use its leverage to prod developing countries to remove impediments to private exploration.

At present, the World Bank is the largest investor in all aspects of developing-country energy development,

including oil exploration, the generation, transmission and distribution of electric power, and, most recently, renewable energy. It has established a special forestry program aimed at helping countries improve their management of forest resources.

Other UN organizations are also working on energy development. The Food and Agriculture Organization, for example, has programs on wood fuels, forestry management and biomass production. And, the UN Development Program provides technical aid in oil exploration and coal liquefaction. In addition to these UN initiatives, there are many bilateral and multilateral aid programs giving financial and technical support to energy programs in developing countries.

As with other aspects of economic development, implementing an energy strategy is primarily a task for the developing country itself, a point emphasized at the Nairobi energy conference, as well as at the October 1981 Cancun Summit meeting of world leaders from rich and poor nations. This summit meeting ended with an endorsement by 22 world leaders of yet another possible avenue for improving cooperation on energy--global negotiations. Though the specifics of these negotiations were left undefined, they are expected to deal with issues of mutual interest to rich and poor countries. Energy will, in all probability, be high on the list.

The energy picture, like the world in which it is observed, is a composite of many competing demands. It is a symbol of something greater than itself and a sum of many smaller parts. It is clear that each nation working to fulfill its needs does not operate in a vacuum, separate from the rest. Yet, energy problems are most visible at the local level, where energy is used to grow and cook food, to transport people and materials and to industrialize and diversify the economy. Easing the energy crisis in developing countries is, therefore, of fundamental importance to their achieving many other social and economic goals, goals in which all nations have a stake.

People are saying

The challenge and the opportunity confronting the international community is to achieve an orderly and peaceful energy transition from the present international economy based primarily on hydrocarbons to one based increasingly on new and renewable sources of energy, in a manner which...is socially equitable, economically and technically viable and environmentally sustainable. World Plan of Action on New and Renewable Sources of Energy.

Energy must become the shared responsibility of the whole world community...all our futures could depend on the success which attends such global efforts. North-South: A Program for Survival, the Report of the Independent Commission on International Development Issues.

FYI

Energy in the Developing Countries, World Bank. August 1980. World Bank, 1818 H Street, N.W. Washington, D.C. 20433. Free.

World Development Report 1981, World Bank. \$6.95. (World Development Report 1980. Free.)

Wood: An Ancient Fuel with a New Future, Nigel Smith. January 1981. Worldwatch Institute, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036. \$2.00.

World Energy Survey, Ruth Leger Sivard. 1981. World Priorities, Leesburg, Virginia 22075. \$5.00.

JAN. 26 1982

THE LEAGUE OF WOMEN VOTERS OF THE UNITED STATES
1730 M Street, N.W., Washington, D.C. 20036

MEMORANDUM

December 1981
This will go on DPM.

TO: State and Local League Presidents
FROM: Dorothy K. Powers, Energy Chair
RE: The United Nations Conference on New and Renewable Sources
of Energy (UNERG), August 10-21, 1981, Nairobi, Kenya

In late July, I was invited to be a member of the U.S. Delegation to UNERG, a conference called by the UN General Assembly to focus national and international attention on new and renewable sources of energy. The U.S. delegation, small in size compared to previous conference delegations, included personnel from the Departments of State and Energy, Congressional representatives and staff, and four public sector advisors, including the League of Women Voters. It was headed by the President's personal envoy, Stanton Anderson, and James Stronayer, the U.S. Coordinator for the Conference.

The conference marks the first time in two decades that representatives of the industrialized nations, oil exporting and oil importing developing countries have met where the discussion of energy matters was the sole agenda. UNERG was set in motion by a vote of the UN General Assembly in December 1978, largely at the instigation of the government of Kenya. The purpose of the conference was to consider the many implications of future energy supply and use throughout the world and to examine the nature of the transition to new energy patterns, with emphasis on the problems and needs of developing countries. The focus was on a full range of new and renewable sources of energy--fourteen in all--ranging from such traditional sources as fuelwood and draft animal power to highly technical sources such as oil shale. It is significant to note the absence of oil and gas, coal, nuclear power and conservation on the agenda. One might question the logic of this, but the fact of the matter is that the highly political and economically sensitive issues surrounding these conventional sources of energy made discussion in a world forum untenable.

The fourteen sources of energy identified by the UN General Assembly are: solar energy, geothermal energy, wind power, hydro-power, biomass, fuelwood and charcoal, oil shale, tar sands, ocean energy (including thermal gradients, wave power and tidal

power), peat and energy from draft animals. During the two and a half years of planning for the conference, committees of experts analyzed the potential of these energy sources, identified their application, sociological and environmental impact, technical feasibility and major constraints to their use. Institutional and financial requirements needed to accelerate the acceptance and use of these energy sources were also explored.

PRELUDE:

"The energy crisis in the developing countries is a crisis of finance and global cooperation, not of energy. There are plenty of energy sources awaiting to be exploited. What is really missing is finance, management and global cooperation."

--Dr. Mahbub Ul Haq, Director of
Policy Planning, World Bank

A basic premise underlying Conference deliberations was that the rate of increase in oil consumption must slow down and the shift away from oil to new energy mixes will be required sooner than had been anticipated. The impact of this situation falls most heavily on the developing countries. To meet their development targets, developing countries will require a threefold increase in energy supply over the next two decades. While higher energy prices affect all countries, developing countries face an even tighter squeeze as higher prices for oil drain export earnings. When combined with declining levels of assistance from commercial and development lending institutions, this means there will be a shortage of capital to develop indigenous energy sources.

The conference also emphasized that the crisis is not limited to oil. Increased energy demand has also spawned "a second energy crisis" involving traditional energy sources, such as fuelwood and draft animal power. Three-quarters of the developing world's population still depends on these energy resources for cooking and heating their homes. With higher costs of imported oil, others are also turning to this resource. As a result of this and other demands for forest products, experts estimate that forests will shrink by 40 percent in the next two decades. And many argue that the costs in terms of environmental degradation, declining agricultural productivity and overall economic and social development may even further reduce growth in the developing countries.

These concerns were reflected on the eve of the Conference opening in a discussion by the prestigious North-South Energy Roundtable. At this discussion, the participants from rich and poor countries were not constrained by the narrow parameters of the Conference agenda, and therefore were able to lay out in more concise terms some of the underlying issues, including points such as:

--Energy and development are inextricably linked and energy is interconnected to all international economic issues.

-- The poorer energy importing countries' development goals are at risk because of higher energy prices.

-- The developed countries that benefited from cheap, abundant energy should stand ready to assist developing nations in meeting the challenge of higher energy prices, but first they must put their own houses in order to ease the pressure on existing energy sources.

-- International cooperation is essential to provide an integrated approach and practical solutions.

-- The financing issues are overriding and of a priority nature.

These points were to serve as a constant reminder to me throughout the conference of the dimension of the problems we faced in our deliberations.

THE CONFERENCE AGENDA

"In their pursuit of technological advance, industrialized countries have exploited conventional energy so recklessly that they cannot now evade the responsibility of helping the developing world in its confrontation of this crippling crisis."

-- Indira Gandhi, Prime Minister
of India

The Conference began with high hopes and a definite mood of optimism. A number of factors contributed to this auspicious beginning. For example, the UN Secretariat had thrown its full weight behind the Conference and its preparation and had appointed a very able Secretary General, Enrique Iglesias. As a result, the preliminary work was exemplary. Issues in contention were clearly defined and negotiating positions were public knowledge. The participation of high ranking officials, heads of state and energy ministers from 125 countries lent political authority to the proceedings.

As the Conference progressed, delegates met each day in plenary session to hear statements by participating member nations, UN agencies and multilateral organizations. They reported on their energy situations and described plans and measures being undertaken to cope with their problems. In some instances these statements were used to introduce extraneous political issues and make foreign policy statements. Old hats at the UN, however, noted that politicizing was held to a minimum.

The basic work of the Conference -- to develop a final draft of the Programme of Action to be submitted for plenary

(full conference) approval -- was turned over to two committees which met simultaneously with plenary sessions. Each committee was assigned specific chapters to work on through a painfully tedious process of negotiation which went word for word and was subject to counter proposals and counter-counter proposals.

The major unresolved issues were of a policy nature and involved questions of institutional and financial arrangements. Fundamentally differing approaches were put forward by the industrialized countries and the Group of 77 (G77), the major voice of the developing countries. While all agreed on the need for an intergovernmental body to implement a Programme of Action, the level and authority was in contention. The G77 felt that only a new committee and secretariat unit could get the job done, while the U.S. with some support of other industrialized countries, contended that better management and coordination of existing institutions would suffice. It was a tug-of-war for and against the status quo.

Widely disparate views on the questions of financing were even more vigorously disputed and defended. The G77 called for a new financial institution (an energy affiliate of the World Bank was most favored), but the United States adamantly opposed this proposal. The thorny question of increased funding to meet third world development needs was also a subject of intense debate. The United States took the position that more efficient utilization of private mechanisms and resources would help the most, while the G77 called for "additionality" or new funding and the setting of economic assistance targets.

National versus international action; public versus private sector role; bilateral versus multilateral aid were sticky issues that required delicate negotiations. The United States remained a staunch supporter of national solutions, championed the role of the private sector and promoted reliance on bilateral aid.

It was nip and tuck as to whether the outstanding issues would be resolved by the Conference deadline. Committee 2, the so-called technical committee, had the responsibility of developing that part of the document that dealt with priority setting and action strategies. It finished its work first, on the next to last day, with a clear, concise and coherent text--a solid agenda for action ready to be implemented.

Resolution of the more abrasive issues of institutional and financial matters, the province of Committee 1, the political committee, was very much in doubt. In a last ditch effort, negotiations continued throughout the last night of the Conference. Fate hinged on the willingness of G77 to accept a compromise of sorts that would delegate resolution of these issues to an interim committee patterned after the Conference's preparatory committee. The real question was, if we can't resolve the issues here, how will we be able to resolve them in

New York? In the end, the G77 conceded and a compromise text was submitted to the plenary session at the last hour. The Programme of Action was approved unanimously (with only a few reservations entered by various nations).

THE PROGRAMME OF ACTION

"All countries share a common interest in ensuring an effective energy transition. Such a transition if based on equitable and open cooperation, would offer new opportunities for accelerating economic and social development of developing countries in particular, and reducing the present pattern of economic and technological dependence."

-- The Programme of Action

The Programme of Action establishes priorities and suggests specific strategies to accelerate the use of new and renewable sources of energy.

Highlights of the Programme include:

-- Setting as a priority the energy needs of people in rural areas where the crisis, particularly that of fuelwood, is "assuming alarming dimensions."

-- Recognizing that efforts are needed to meet urban and industrial requirements, particularly those of developing countries.

-- Calling for an energy information center on the premise that adequate information is a pre-requisite for sound decision making.

-- Establishing an intergovernmental body in the United Nations open to all member States and entrusted with the responsibility for guiding and monitoring the implementation of the Programme of Action. For purposes of continuity between the time of the Conference and the launching of the Programme of Action, a committee patterned after the Preparatory Committee was established. It will meet once in 1982 and report its recommendations to the 37th General Assembly through the Economic and Social Council. At that time, the General Assembly is to make a final decision on institutional measures to implement the Programme. (This was the crucial compromise.)

-- Calling for action in five broad policy areas: energy assessment and planning; information flows; research development and demonstration; transfer, adaptation and application of mature technologies; education and training.

-- Making certain that "every effort should be made to ensure that action involves and benefits both men and women equally."

-- Recognizing that intergovernmental and non-governmental organizations can make a useful contribution to successful implementation of the Programme of Action.

THE NGO FORUM

" NGO's are an integral part of the Conference, acting as a voice of the people. They have a political role to play: this is the battleground."

-- Morris Miller, Deputy Secretary-General of the Conference.

A parallel meeting--the NGO Forum-- was held in Nairobi for representatives of non-governmental organizations associated with the United Nations to consider all aspects of NGO involvement in helping to promote the use of renewable energy sources in developed and developing countries and to facilitate input from NGO's into Conference deliberations. Participants from 51 countries numbered over 500.

Many panels and workshops were held not only to discuss use and development of the energy sources under consideration, but on the more controversial and overriding issues of the new international economic order (NIEO), technology transfer, the role of transnational corporations, the role of women and yes, even the role of non-governmental organizations.

The quality of the meetings was uneven, but they served as a vehicle for lively debate and exchange of information. They also provided a mechanism for formulating areas for action and developing a strategy for an organized lobbying effort to influence the wording of the Programme of Action.

During the course of the forum, a number of major concerns surfaced: the fuelwood crisis, the role of women as producers and users of energy, the need to integrate development with environmental and natural resources management, the need for industrial nations to reduce energy consumption and, finally, the need for a better understanding of the value of human energy. These were the areas of concentrated action to influence the shape of the Programme of Action. In the final document, it was clear that the NGO's had been successful in securing strong language, particularly in the areas of the role of women and consideration of environmental impacts.

One of the most effective and inspiring actions taken by the NGO's was the Fuel March organized by Kenyan NGO's. The marchers were led by a Police Band followed by uniformed members of Boy Scouts and Girl Guides and groups of traditional dancers in their colorful costumes. The plaques carried by the various NGOs succinctly and poignantly said it all: "Daylong Journey for Fuel--Relieve Back-Breaking Labor", and "Our Energy Crisis--Fuelwood", and "Mandaleo (Women) and Energy," to cite a few among many.

At the close of the NGO Forum, the Conference Secretary-General invited NGO Forum representatives to present a summary statement to the delegates at the official conference center. This was a precedent setting meeting and could go a long way towards institutionalizing NGO's role in future UN Conferences.

A PERSONAL POINT OF VIEW

"Building public awareness of growing energy demands that the world will face over the next several decades is essential.... To accomplish this task, the composition of the U.S. delegation should, we believe, be broadly representative of American interests...it should include individuals representing organizations known for their work and expertise in the energy arena."

--- Dot Ridings, First Vice-President,
LWVUS, in a letter to Alexander
Haig, Jr., Secretary of State

I found the Nairobi Conference a most rewarding and enriching experience. I am not an old hat on the United Nations beat and perhaps that may account for some of my starry-eyed enthusiasm. But for me it was exhilarating to see people from so many cultures and backgrounds, with different ways of thinking and doing come together in open negotiations and achieve even a modicum of success.

Serving as one of four public sector advisors on the U.S. delegation had its moments of pride-- and misgivings. The delegation met each morning at the U.S. Embassy to review activities of the previous day and to be briefed on the "official U.S. line." Each of us had responsibilities; mine was to act as liaison to the U.S. NGO's and to sit in plenary, as time permitted. So, I spent my days shuttling back and forth between the Conference Center and the Polytechnic, site of the NGO Forum.

The most difficult time for me came over the rift that developed between some of the U.S. NGO's, who organized into a caucus, and the U.S. delegation. Highly critical of the U.S. position held at the Conference, the caucus issued a Nairobi Declaration publically scoring the Reagan administration as "fast becoming one of the major obstacles to the worldwide use of renewable energy." They also characterized the U.S. position at the Conference as lacking public support, citing as evidence the results of recent polls and the bipartisan Congressional rejection of the Reagan Energy Budget. The Congressional advisors, Richard Ottinger (D, New York) and Berkley Bedell (D, Iowa), were openly sympathetic to the caucus ideology and severely criticized the U.S. position on issues of financing.

On the other hand, it was most gratifying that the delegation, particularly our representatives on Committees 1 and 2, were open and receptive to meetings and consultations with U.S. NGO's. These discussions provided invaluable input for Conference negotiations as well as information and insights which assisted NGOs in their lobbying efforts.

Was the Conference a success? What little coverage was given by the media in this country was generally critical and negative. To be sure, it was at best only partially successful. We will have to wait and see how the issues surrounding implementation of the Programme of Action will be resolved. Yet many of the stated objectives of the Conference were achieved; building public awareness of the critical nature

of the developing countries' energy problems, raising consciousness about these energy sources and developing a better understanding of their potential contribution. In fact, some observers have suggested that UNERG succeeded in focusing attention on renewable sources of energy in much the same way that the 1972 Stockholm Conference did on environmental issues. This could well be the most important and lasting effect of the Conference. Only time will tell. We can be sure however that a seed was planted. If it sprouts, it could represent a minor miracle, a distant hope that the inevitable energy transition will be met in a spirit of global understanding and cooperation with goals of equity and security for all.

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December 1981
LL Pres. (2); DPM
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Program - Energy

SOLAR TAX CREDIT ALERT

The Reagan Administration, in a continuing effort to lessen the deficit, has recommended scrapping the tax credits now given for use of active-solar and conservation practices (40% of up to \$10,000 for homeowners, 15% for businesses). This incentive resulted in a 40% growth last year in the solar industry, one of the few bright spots in the very bleak housing industry. The employment provided per unit of energy made available is far greater in the solar industry than in other energy-producing activities, and the lead time for making the energy available is short, unlike large power plants. Use of solar energy and conservation is the quickest way to make the U.S. energy independent.

WRITE TODAY urging your U.S. Representative and Senators to oppose this move to eliminate these tax credits.

OTHER DEVELOPMENTS

The Building Energy Performance Standards have been entirely abandoned, though five states in their energy plans have developed performance standards using some of the research. Texas is not one of the five. Texas is, however, proceeding to implement its Residential Conservation Service (RCS). Regulated utilities will provide energy audits on request to their customers for a nominal fee and will then assist in providing installers to complete the recommended conservation measures. Whether any assistance in financing arrangements will be provided I don't know yet; in some states monthly installments have been added to the utility bill. This plan should begin early in 1982.

Also early in 1982 the Texas Energy Extension Service will begin a series of "build it yourself" solar water heater workshops through some college or university in the Dallas-Fort Worth area. After this series has been completed and evaluated, they intend to offer the plan in other regions of Texas.

Solar water heating, especially where electricity is now being used to heat water, is very advantageous financially.

#

Taking Nuclear Issues to the Village Square

A Guide for Community Leaders

Our representatives depend ultimately on decisions made in the village square . . . to the village square we must carry the facts of atomic energy. From there must come America's voice.

Albert Einstein

Albert Einstein was an extraordinary scientific genius who was also remarkable in his early recognition of the fact that many areas of scientific inquiry, such as nuclear energy, have major implications for society at large. Thus, he argued that decisions in such fields should not be left to scientists or to bureaucrats but need to be made by the entire citizenry.

It is ironic that the typical village square today (especially one close to a proposed nuclear site or an existing facility) is often the scene of divisive debate characterized by slogans and symbols rather than reasoned discussion. More often than not communities faced with decisions on nuclear facilities are split into two groups, with the vocal few who are strongly for or against a nuclear measure battling each other with contradictory sets of data and philosophies about nuclear power.

But where does this leave the great middle—the citizens who are trying to arrive at informed opinions? What can they get out of this cacophony of protests and promises, of claims and counterclaims? When they see politicians, scientists, community leaders and other neighbors squaring off into “pro” and “anti” nuclear camps, will they give up the attempt to help resolve the disagreements over nuclear power? Or will they be willing to get involved if they have access to balanced, reliable information about nuclear power and the consequences of using it—and not using it?

How to provide the basis for rational, nonpolarized debate on nuclear issues is the major challenge facing concerned citizen groups that agree with Einstein that decisions on nuclear energy must come from “America’s voice”—the voice of all the people.

To answer this need, the League of Women Voters Education Fund (LWVEF) has launched a national nuclear energy education program aimed at providing objective information and a reasoned approach that will help preserve and expand the middle ground on nuclear issues. Through a series of publications, conferences and local outreach projects, the LWVEF aims to familiarize citizen leaders with the meaning and significance of major nuclear issues, with a particular focus on comparing the social, environmental and economic impacts of nuclear power with those of other energy options. (For more information on this program, or to order publications on nuclear power, contact the League of Women Voters, 1730 M Street, NW, Washington, DC 20036. (202) 296-1770.)

Some background

Discussions of nuclear power should proceed from the same basic premises that apply to effective consideration of other energy options: to wit, that the American people face some hard choices about energy sources in the coming years. Con-

sider the current energy situation and the ripple effects it is having on our nation.

- The stocks of nonrenewable energy sources, such as oil and gas, (which currently provide 75 percent of America’s energy) are being depleted at a rapid rate—and forecasters say that world production will peak by the end of the century.

- The United States relies on imported oil for one-quarter of its total energy supply—making the nation dangerously vulnerable to a sudden cutoff in supplies with its attendant shock to the economy.

- Other conventional domestic energy sources, such as coal, have a number of social and environmental problems (including acid rain and the build-up of carbon dioxide in the atmosphere that may cause dramatic changes in climate). Alternative energy sources and technologies, such as synthetic fuels and solar photovoltaic cells, are either undeveloped and/or not considered economically competitive at this time.

- While conservation has made a big dent in our energy growth rate, predictions differ over how much more energy can be conserved.

- The international image of American leadership is being compromised by U.S. dependence on other countries for a substantial percentage of its oil requirements, the deterioration of the dollar and the hostility of other nations that see the United States consuming an inordinate amount of the world’s energy resources and keeping the demand/price high.

- The cost of living and the unemployment rate continue to go up—driven, in part, by rising energy costs.

- The disadvantaged, the lower-middle class, the elderly and those on fixed incomes in our own country and in other nations are losing hope for the future—for not only do rising energy prices weigh disproportionately on them, but many also feel that only an expanding economy, fueled by high levels of energy consumption, can provide the financial resources needed to ease their burden.

Nuclear power, like all energy options, has both advantages and drawbacks. But nuclear power has never been treated as “just another option” by either proponents or opponents. In its infancy, nuclear power was promoted, often unqualifiedly, by a U.S. government and an industry that saw nuclear power as the great hope for America’s energy future. But as the decade of the eighties begins, this vision has blurred and receded. These days, *any* proposal regarding nuclear power tends to spark opposition, arousing not only those who say “not in my backyard,” but also those who say “not in anybody’s backyard”—in other words, they say nuclear power has no place in the U.S. energy mix. Many supporters of nuclear power are equally dedicated to this source as the only way out of our energy predicament. Still others argue for maintaining our current commitment to nuclear power in order to keep *all* of our options open.

Why the impasse?

What makes nuclear energy such a difficult and contentious issue? The answer has several parts.

■ Nuclear power is a relatively new and still-evolving technology; thus, there are many *technical* questions for which there are no conclusive answers. While unresolved problems are not restricted to nuclear energy, the high capital costs and the long-range nature of some social and environmental effects of this energy source make the stakes high.

■ A nuclear power plant presents the potential for a catastrophic accident. While the probability of such an accident is remote, public concern over *safety* is greater with regard to nuclear power than with other energy sources.

■ The nuclear fuel cycle is much more complex than fuel cycles of other energy options. Furthermore, it has a major missing piece: there is still no permanent waste disposal system in the United States.

■ Nuclear energy's link to weapons proliferation adds a unique technical and political dimension to the risks associated with nuclear power.

■ Many of the arguments over nuclear energy aren't really about the technology but about larger social and political concerns. They center on two related questions: the role of economic growth in our society and the types of technologies and resultant social arrangements we wish to pursue. For example, must the United States have an expanding economy, sustained by large-system nuclear power, to ensure that people have jobs and enjoy a high standard of living, or can a low-growth, decentralized, non-nuclear-powered economy provide equal or even better opportunities for social progress?

Given its multi-faceted nature, the nuclear controversy raises some deep-seated subjective responses. The prospects for nuclear power, as described by proponents—a clean, cheap, inexhaustible source of energy—are tantalizing; its dangers, as detailed by critics—the connection with nuclear war, the threat of a nuclear meltdown—are terrifying. Those who wish to formulate a nuclear power policy should be prepared to deal with such hopes and fears and with such widely differing perceptions about the issues.

Unfortunately, however, people too often allow their subjective responses to the nuclear power controversy to hinder resolution—or even understanding—of the issues. Citizens are often frustrated in trying to participate in decisions on this issue, for it is highly technological and requires dealing with a large federal bureaucracy. Moreover, some citizens use official hearings, meetings and other forums to vent their frustrations, rather than to engage in productive discussion of the matter at hand. Many highly trained scientists, not accustomed to responding to the public, can become impatient with the basic questions and concerns raised by citizens. Industry leaders, utility officials and bureaucrats, anxious to move ahead, too frequently view extensive public participation in the development of nuclear policy as unnecessary or as an impediment to decision making. And all sides tend to depict the others as “villains” or as stereotypes—capitalist “fat cats” interested only in profits, politicians who cater to “special interests,” “ivory-tower” scientists or single-minded “environmentalists” who oppose technological progress. Such caricatures make fruitful communication and compromises virtually impossible.

Why does it matter?

Faced with these difficulties, community leaders considering an educational program on nuclear power may wonder if it is worth the effort. Nevertheless, here are important reasons for taking on this challenge.

■ It is imperative that we as a nation plan ahead to shape our

energy future, rather than continuing to let crises force decisions upon us.

■ The decisions we make on nuclear power should not be by default but should come from a conscious and informed process, involving a careful assessment of acceptable risks vs. expected benefits and a thoughtful consideration of nuclear power and its alternatives.

■ Little comprehensible, objective information is now available to citizens—information they need to become informed and active in helping to resolve some of the complex issues in the nuclear debate.

■ Nuclear energy is balanced on a political knife-edge; decisions as to whether to close down the nuclear option, to keep on our present course or to commit ourselves to greater reliance on nuclear power will be made in the next few years.

■ Too often, the only means for settling disputes over nuclear facilities is through litigation, which is lengthy, expensive and usually highly unsatisfactory for all involved.

■ Nuclear power is only one of a series of highly technological subjects, such as genetic engineering, with which our society will have to deal. Finding an effective way to handle decisions about nuclear energy should assist us in similar technological/social debates that we will soon be facing.

This Community Guide can help you in designing a successful educational campaign on nuclear issues for your community. It provides ideas for presenting balanced, objective programs, contains tips for defusing highly charged emotions that hinder discussion of this polarized topic and suggests ways to move beyond the present stalemate.

Where to begin

Once convinced of the worth of taking on this project, community leaders will want to become familiar with objective information that lays out the basic components of the arguments. We have some recommendations:

■ Read *A Nuclear Waste Primer* (LWVEF Pub #391, \$1.25) by the LWVEF's nuclear energy education program. (A second booklet presenting an overview of nuclear issues will be published in summer 1981.) Also review *Nuclear Power: An Annotated Bibliography*, 1981 Energy Brief.

■ For detailed analysis and research data, turn to the major energy studies published recently (see Resources, p. 8). They are written in language that interested citizens can understand and should be useful to you in conducting your community education project.

■ Supplement these materials with articles from newspapers, magazines and other sources.

■ Refer to the LWVEF Energy Booklets, *Energy Dilemmas* (LWVEF Pub #688, \$1.00) and *Energy Options* (LWVEF Pub #628, \$1.00) for additional perspective on the overall energy picture.

Taken together, these resources should equip you with sufficient background to sponsor effective community education projects on nuclear issues.

Tackling the material

As the box, “Nuclear Power 101: A Basic Text” illustrates, the subject of nuclear power includes many wide-ranging and varied subtopics.

Since you can't say or do everything about such a broad and complex matter, focus on the issues and information that are most important for the audience you want to reach. Are you aiming for a general audience, made up mostly of people who

know little about nuclear power? If so, you will want to cover "the basics," which are highlighted in the "101" outline. With more knowledgeable audiences, you may be able to skip much of the background and focus on one aspect of the subject, such as nuclear waste disposal or nuclear weapons proliferation. Keying your presentations to your area's needs, concerns and level of interest will help your project have a larger impact.

The agendas included in this guide (p. 4) provide examples of ways to organize your presentation on nuclear power. Whether your project consists of a one-hour meeting, a one-page factsheet or a one-day seminar, these outlines will give you ideas on how to cover a great deal of ground—whether focusing on one aspect of the issue or providing general background.

Getting the message across

Once you have decided what issue(s) have the greatest interest for your community, you need to settle on the best way to convey that information. Mull over the possibilities and then select the appropriate forum for the ideas and material you want to cover. Be creative! Some ideas you may consider:

Meetings The agendas included in this guide can be covered in one-and-a-half or two-hour meetings. A member of your organizing committee could speak or lead a discussion, or you may choose to invite a guest lecturer from a nearby university, related industry, utility, government office or concerned citizen group to address your audience. The program will probably be more lively and objective, however, if several people give presentations. Different formats such as skits and role-playing also help liven up the material. You may even want to sponsor a series of talks on nuclear energy issues, to cover more ground.

Keep in mind that successful meetings require a lot of preparation, not only in researching the material but in publicizing the event, making arrangements, aggressively pursuing an interested audience, etc. For ideas, turn to *Citizens: The Untapped Energy Source* (LWVEF Pub #436, 50¢) and *Meaningful Meetings: The Role of the Resource Committee* (LWVUS Pub #319, 40¢).

In addition, think of ways to follow up your meeting. For example, organize a visit to a nearby nuclear facility in conjunction with your discussion or arrange a display of materials and information on nuclear issues in your schools, libraries or

Nuclear power 101: a basic text

Components of the nuclear power issue that citizens need to be familiar with for informed participation in this field.

I. BASIC FACTS

Technological background

What is nuclear power? How does it work?

- explanation of fission process
- explanation of nuclear reactor technologies
- explanation of nuclear fuel cycle

Current status of U.S. nuclear power

Do we need nuclear power? Can other energy sources do the job?

- figures on the amount of electricity and the percentage of total energy supplies provided by nuclear power in the United States as well as in the region and community in question
- figures on the possible contributions to the energy supply by alternative energy sources
- discussion of energy growth rate figures

Current international status of nuclear power

Do other nations need nuclear power? Can other energy sources do the job?

- figures on contribution of nuclear power to other countries' energy supplies
- discussion of other countries' future plans for nuclear power

II. MAJOR POLICY ISSUES

Risks of accidents

How do the risks of accidents at nuclear power plants compare to those of other energy facilities?

- description of nuclear power plant safety systems/features
- technical assessments of risks
- risks of terrorist attack

Social, economic and environmental costs

What are the social, economic and environmental (including the effects on human health) tradeoffs involved in producing nuclear power as compared to other energy sources?

- social, economic and environmental costs of different steps in nuclear power generation such as mining, plant operation, waste disposal, etc.

- social, economic and environmental costs of use of oil, gas, coal, solar and other energy sources

Regulation/Institutional Credibility

Can our institutions adequately supervise and regulate commercial use of nuclear power?

- brief history
- role of existing institutions
- major problems and proposed changes

Nuclear Fuel Cycle

What are the aspects of the entire nuclear cycle that call into question nuclear power's role as an energy source?

- resource adequacy
- policy regarding reprocessing/breeder reactors
- debate over waste management

Proliferation

Will the use of nuclear power lead to the proliferation of nuclear weapons? Will the international use of nuclear power contribute to, or detract from, the goal of world peace?

- link between nuclear fuel cycle and nuclear weapons capability
- current policies regarding international proliferation
- technological considerations such as reprocessing
- possible institutional solutions

III. LARGER SOCIAL QUESTIONS

How will the energy technologies we choose influence the social and political fabric of our society—our values, our lifestyles, etc.?

What role does economic growth play in social progress? What level of energy consumption will our society require in the years to come?

What are our responsibilities to future generations in terms of environmental quality and supply of natural resources?

How can we equitably allocate energy resources and share the risks associated with the production and utilization of these resources—on both the national and international levels?

How and by whom will these decisions be made?

To fill out this bare-bones outline, turn to the Resources section of this Community Guide.

in a state considering a nuclear ballot issue or some type of nuclear legislation. Schools often look for inexpensive materials that brief students beyond the textbook and suggest discussion topics.

And don't neglect the newspapers! Consider approaching a local newspaper about doing a special supplement or pull-out section on nuclear energy and other energy sources (similar to the Voters Guides many Leagues do at election time). You can reach a large audience this way. Or you could write an article (or a series of articles) and persuade the local paper to print it. The sky's the limit!

Audiovisuals Audiovisuals (AV) such as slide shows and films are also excellent educational tools. Be forewarned, however, that these formats take a *lot* of time, money and effort. Be sure that you have the resources you need before taking on such a project.

Other audiovisual formats may be more appropriate for your group's time, resources and objectives. For example, local radio and television talk shows would probably be very interested in a good objective presentation of nuclear issues. If you have one or two good speakers with solid information on the topic (assisted by some clear and interesting graphics, if you will be appearing on television), explore the possibilities in your area. You will reach many more people than through numerous meetings, conferences and publications.

Citizens: The Untapped Energy Source contains many more tips and techniques for conducting a wide variety of community education projects. Check this source for formats as well as for ways to make your meeting, conference, or other program live up to its full potential.

Carrying it off

These are only a few of the many types of projects you may consider. But no matter what method of communication you eventually select, many of the same factors will determine whether your project is a feat or a fiasco. Here are some tips to ensure a successful program:

Set up a committee. A well-organized, smoothly functioning working committee is the key to success for any project. It is the committee's responsibility to analyze the community's needs, decide on the goals and type of project needed and ensure that each part of the plan is implemented properly. Be sure that the committee includes people with a variety of skills who can give the required time and who will follow through on assignments.

Don't try to cover too much too fast. It is better to have a satisfying discussion on one area than to rush people through the entire gamut of issues.

Choose a format that doesn't intensify opposition. "Pro vs. anti" nuclear debates pit one set of "experts" with one set of "facts" against another, confusing citizens who don't know which side to believe and who are too often swayed by the rhetoric instead of the evidence. If you feel it is necessary to present "pro" and "anti" arguments, it is better to ask representatives from each camp to serve on a panel—to give their perspectives, not to dispute each other's claims. See if you can also include someone with a "middle of the road" view or someone who approaches the topic from an entirely different perspective—a government official who must deal with the problem, an academician who has a broad perspective on energy sources, etc.

Tackle the tough questions. What social values do different energy sources promote? What level of economic growth is desirable? If nuclear facilities increase in number, will the security measures needed pose dangers to our civil liberties? Granted, such questions are hard to deal with, but past avoid-

Considering cosponsors?

Pulling off a successful community education program on nuclear power takes a lot of resources, so you may want to cosponsor your event or project with another group or groups. Cosponsorship can cut down on expenses and help spread the work, but at the same time could result in disaster if you and your cosponsors do not share the same goals for the project. If your aim is to educate the public in an unbiased fashion, be wary of cosponsoring projects with organizations that are actively promoting either a pro- or anti-nuclear position, unless the total list of cosponsors is sufficiently well-balanced and the importance of objectivity is accepted by all. And you may wish to retain the final say about the project in case clashing perceptions of objectivity prove to be irresolvable.

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Incorporate participation into your program. Many citizens feel that they are always being lectured to, never listened to, on the subject of nuclear power. If you are putting on a conference, a radio talk show or a public meeting, lay out the facts, the issues and the questions being addressed at the outset, but be sure to allow time for people to ask questions and to express their opinions. In a publication or other project that can't directly elicit citizen response, mention how people can have input into the decisions on this issue.

Put the basics on paper. A factsheet or a set of graphs and pie charts—whether in the form of a handout or wall display—can give people the facts they need to understand some basic issues in a readily comprehensible form. Such written material or graphic display ensures that everyone is working from a common data base; it also frees up time during a public meeting, enabling participants to spend most of the time discussing the interesting policy issues, rather than listening to a recitation of basic information. If your program is aimed at your own members, include the factsheet with your newsletter in order to brief your audience before the meeting. And a factsheet that people can take home with them serves to reinforce what they learned at the meeting or conference—and can be passed on to others.

Differentiate the issues. Wherever possible, separate the technical questions from the social issues, the economic arguments from the political disputes, etc. While the issues are so interrelated that none can be considered in a vacuum, it is more productive to take on one aspect of the question at a time.

Above all, keep things in perspective. Always include some mention of the general energy situation. Don't focus exclusively on nuclear power; compare it with our other energy alternatives. Remember that all energy sources have risks, costs, benefits, social implications, etc.

Dealing with conflict

The challenge to leaders of community programs is to make any meeting, panel discussion, radio talk show, etc., into a constructive exchange of thoughts and feelings as well as information. But raising the social issues that are an integral part of much of the nuclear controversy can be a double-edged sword: it can hold the promise of more far-reaching and pro-

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ways to direct discussion participants towards cooperative efforts.

How about mediation?

Adoption of the above suggestions should go a long way towards facilitating a productive dialogue on nuclear issues. But how should you proceed if your forums have cleared the air but have not resolved basic conflicts? One option you might consider is getting some professional help in conflict management. The burgeoning number of conflicts over environmental issues has spawned a new alternative to settling the issue in court (which is still the traditional American form of conflict resolution). Often called *environmental mediation*, this approach takes negotiation techniques, such as arbitration, that have been used in handling labor-management disputes and applies them to conflicts over land use, air quality standards, pollution control, waste repositories and other issues.

Environmental mediators have also racked up some success stories in the field of energy. The Center for Energy Policy (CEP), for example, mediated the dispute over the conversion to coal of the largest oil-fired power plant in New England. The federal energy agencies, first the Federal Energy Agency (FEA) and then the Department of Energy (DOE), mandated this switch as part of U.S. energy policy to cut oil consumption. The plant owner, New England Power Company

Conflict anticipation

As experienced community leaders know, the best way to handle a conflict over use of resources is to acknowledge it and attempt to deal with it before it becomes a full-blown fight. One group that has been particularly successful in the field of "conflict anticipation" is ROMCOE, Center for Environmental Problem Solving. ROMCOE is experienced at bringing citizens of a community together to consider a potential problem before it develops, enabling different constituencies to work towards the option that they all can live with.

For example, the League of Women Voters of Delta County, Colorado, concerned that their county would be undergoing rapid growth due to increased coal mining, worked with ROMCOE and a variety of other groups to organize a workshop among potentially conflicting viewpoints—coal company executives, miners, farmers, ranchers and citizens—to share values and concerns and to explore ways to direct the growth towards mutually held goals. This workshop was only the first part of an ongoing effort by the citizens to maintain the quality of life they desire for their community.

ROMCOE also organized an ambitious project entitled, "Future Power: A Project to Empower Communities to Create Their Own Energy Futures." In this project, ROMCOE worked with inhabitants of three different types of communities to identify their energy supply and demand options, explore the short- and long-term implications of the different options, choose what energy future they preferred, develop a plan to achieve that energy future and start to implement that plan. By starting early, tackling the situation before lines were drawn, involving the entire community in the effort, considering all aspects of the question and following up their deliberations with action, these communities have begun to solve their "energy crises" without the rancor and delay that have plagued similar situations. Such foresighted and widespread community involvement in questions over nuclear facilities could measurably improve the decision-making process in this field.

Consensus building on nuclear waste management

Perhaps the greatest strides towards resolving seemingly irresolvable differences have been made in the area of nuclear waste management (NWM). Some of the conflict resolution efforts that have taken place include:

The Interagency Review Group (IRG), a committee of representatives from the 14 different federal agencies involved in nuclear waste management, was created by President Carter to bring together the different federal perspectives on NWM and to arrive at a joint plan. Their work, completed in March 1978, is generally heralded as producing the greatest *technical* consensus on this issue to date.

The Keystone Center for Continuing Education sponsored a series of symposia and workshops that included representatives of the entire spectrum of opinion on nuclear energy. The participants reviewed the IRG draft report, discussed the key issues and eventually concurred on a specific *technological strategy* for NWM. Keystone's work is continuing; participants are now looking at public participation in NWM policy making.

The Aspen Institute held a conference on the "governance issues concerned with siting of radioactive waste," which brought together representatives from environmental groups, industry, utilities, state and federal government, academia, the media, unions and citizen groups to exchange opinions on this important topic.

RESOLVE, Center for Environmental Conflict Resolution supplemented previous forums by convening a cross-section of the public to work on the *processes* by which NWM policy is made. After several working sessions, this group agreed to an ultimate goal for waste management policy (separating that from their particular opinions on nuclear energy policy in general) and identified key aspects of the way that policy is made. They focused on ways to construct a productive role for citizen participation.

(NEPCO), argued that Massachusetts' stringent air pollution standards made conversion economically impossible. Federal and state environmental protection agencies wanted to uphold the hard-won environmental quality of the area. It sounded like another case headed for litigation. Instead, with CEP as moderator, arrangements acceptable to all parties were worked out, and the conversion went through, with a savings of 12 million barrels of oil per year.

While some nuclear controversies, especially those over specific nuclear power plants, are not amenable to mediation, conflict-resolution techniques can produce real progress in others, particularly at the policy level (see boxes, "Conflict Anticipation," and "Consensus Building on Nuclear Waste Management," p. 7,). Even if environmental mediators cannot resolve your dispute, they may be able to help you to reduce polarization and hostility within the community.

Making America's voice heard

If you've done a good job on your forums, publications, workshops or other educational projects, people are going to want to use what they've learned to participate in the policy-making process on nuclear issues, indeed, on overall energy issues. When asked, "What can I do? How can I make my views known?" here are a range of suggestions you can give:

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Environmental Protection Agency and the Departments of Energy, Transportation, State, Defense and Interior propose regulations on many aspects of nuclear power—from transport of nuclear materials to siting of nuclear power plants. Attend hearings in your area. Inform yourself on any proposed regulations and comment on them.

Design public participation mechanisms. Though most of the laws and implementing rules regarding nuclear power issues contain provisions for citizen involvement, these procedures have not always been adequately carried out. If you have some innovative ideas for ways to incorporate productive citizen participation into these procedures, let the responsible agencies know about them. See if you can devise a way to discuss and make decisions about the issues that have not had much formal public input, particularly the larger social questions such as, "What is our society's desired rate of energy growth?" or "How should we allocate the social and economic risks of energy production?"

Focus on licensing reform. Too often the present licensing procedures for nuclear facilities have satisfied no one. In many cases, citizens have felt that their opinions and concerns were not listened to; utilities thought the process produced nothing but opportunities for delay and obstructions; and government officials felt battered from all sides. Explore ways that licensing hearings could be made more constructive and share your suggestions with federal regulators, legislators and industry and citizen groups.

Read *A Nuclear Waste Primer*. If nuclear waste management is your particular interest, this publication points out the many opportunities for citizen involvement.

Get involved at the state level. Besides passing laws to regulate nuclear power facilities, several states have held referendums on issues such as nuclear waste management, transportation of nuclear materials and proposed moratoriums on the operation and construction of nuclear power plants. If such questions are being considered by your legislature or electorate, a well-balanced factsheet, delineating the pros and cons of the issue at hand, can serve to inform the citizens and encourage everyone to participate in the decision.

Use your vote wisely. Find out what stance candidates for public office in your area have taken on nuclear power and other energy issues, and publicize that information for other voters. Get in touch with your elected officials and ask them what nuclear issues, laws, etc., fall within their purview. Express your interest in nuclear issues and ask them to keep you informed about any nuclear events that arise.

Keep track of the debates over the federal budget. Appropriations both shape and are shaped by nuclear policy. For example, the battle over the breeder reactor is fought every year between those who wish to end funding for the Clinch River breeder reactor and those who wish to continue support for the project.

Review the nominees to key posts in agencies dealing with nuclear topics (such as the Commissioners to the Nuclear Regulatory Commission).

Consider doing a project on the Price-Anderson Act, the section of the Atomic Energy Act that regulates public compensation in the case of a nuclear power plant accident. Since several bills to amend this act are pending before Congress, it is one area of nuclear policy that is particularly ripe for citizen education (and involvement) at this time.

Serve on your utility's consumer advisory board or on your town's energy commission. If your utility doesn't have such a board, press for the creation of one. Keep up with your community's plans for its energy future—especially if it is conducting an assessment of the need for power on which to base

future construction. It is better to work with the assessment study all the way through its development, rather than to voice your criticisms after it is completed.

Support the efforts of those who attempt to overcome the stalemate. Consider how attempts at conflict resolution on nuclear issues should be funded. Work to implement the recommendations of groups such as RESOLVE, Center for Environmental Conflict Resolution, if you find them to be sound.

Resources

Five Major Studies:

ENERGY IN AMERICA'S FUTURE: THE CHOICES BEFORE US. A study prepared for the Resources for the Future National Energy Strategies Project. Sam H. Schurr and others. The John Hopkins University Press, 1979. 544 pp. \$10.95, paper.

ENERGY FUTURE: REPORT OF THE ENERGY PROJECT AT THE HARVARD BUSINESS SCHOOL. Edited by Robert Stobaugh and Daniel Yergin. Random House, Inc., 1979. 399 pp. \$12.95, cloth. \$2.95, paper.

ENERGY: THE NEXT TWENTY YEARS. A report sponsored by the Ford Foundation and administered by Resources for the Future. Ballinger Publishing Company, 1979. 608 pp. \$25, cloth. \$9.95, paper.

ENERGY IN TRANSITION 1985-2010. Final Report of the Committee on Nuclear and Alternative Energy Systems, National Research Council. National Academy of Sciences. W. H. Freeman and Company, 1979. 656 pp. \$11.95, paper.

NUCLEAR POWER ISSUES AND CHOICES. Report of the Nuclear Energy Policy Study Group. Sponsored by the Ford Foundation and administered by the MITRE Corporation. Ballinger Publishing Company, 1977. 418 pp. \$10.95, paper.

Resource Groups:

Americans For Energy Independence, 1629 K St., NW, 12th floor, Washington, DC 20006.

Atomic Industrial Forum, Inc., Public Affairs and Information Program, 7101 Wisconsin Ave., NW, Washington, DC 20014.

Critical Mass Energy Project, P.O. Box 1538, Washington, DC 20013.

Edison Electric Institute, 1111 19th St., NW, Washington, DC 20036.

Electric Power Research Institute, 1800 Massachusetts Ave., NW, Washington, DC 20036.

Environmental Action Foundation, Utility Project, 1346 Connecticut Ave., NW, Washington, DC 20036.

Friends of the Earth, 530 7th St., SE, Washington, DC 20003.

Keystone Center for Continuing Education, Box 38, Keystone, CO 80435.

League of Women Voters Education Fund, 1730 M St., NW, Washington, DC 20036.

National Science Teachers Association, 1742 Connecticut Ave., NW, Washington, DC 20009.

Natural Resources Defense Council, 1725 Eye St., NW, Suite 600, Washington, DC 20006.

Nuclear Energy Women, 7101 Wisconsin Ave., NW, Washington, DC 20014.

Nuclear Information and Resource Service, 1536 Sixteenth St., NW, Washington, DC 20036.

RESOLVE, Center for Environmental Conflict Resolution, 360 Bryant St., Palo Alto, CA 94301.

ROMCOE, Center for Environmental Problem Solving, 5500 Central Ave., Suite A, Boulder, CO 80301.

Sierra Club, 330 Pennsylvania Ave., SE, Washington, DC 20006.

Union of Concerned Scientists, 1725 Eye St., NW, Suite 601, Washington, DC 20006.

U.S. Department of Energy, Office of Public Affairs, Room 1E 218, Forrestal, 1000 Independence Ave., SW, Washington, DC 20585.

Researched and written by Carol Cross, LWVEF Energy Department, for the Nuclear Energy Education Program.

Order from League of Women Voters of the United States, 1730 M Street, NW, Washington, DC 20036, Pub. No. 155, 75¢.

ENERGY 7

Offshore Drilling

In Short The coastal margin that surrounds our nation is the site for a wide range of human activities--commercial harvesting of fish and shellfish, industrial development, swimming, boating and other forms of "re-creating." The zone is also a complex, diverse ecosystem that produces much of the food and oxygen we depend upon for our survival. In addition, the submerged lands that slope away from the shore towards the deep ocean floor (known as the Outer Continental Shelf or OCS) contain significant deposits of gas and oil. As concern mounts over American dependence on imported oil, attention has turned to increased OCS development as a major way of boosting U.S. petroleum production. The question we must grapple with is how - and when - to best develop these fossil fuel resources without vitiating the many other uses and values of these lands and waters.

The Potential Offshore drilling already produces substantial domestic supplies of oil and gas. Since 1954, the Bureau of Land Management (BLM) of the Department of Interior (DOI) has leased over 19 million acres of OCS lands, primarily in the Gulf of Mexico off of Texas and Louisiana, but also in the Atlantic and Pacific Oceans and the Gulf of Alaska. In 1979, according to the United States Geological Survey, (USGS), about 9% of U.S. oil production and 23% of U.S. gas production took place in federal offshore waters. In addition, the first three miles of coastal waters, which are under state rather than federal jurisdiction, have been producing considerable amounts of petroleum since the turn of the century.

Reliance on offshore oil and gas supplies has grown in the last decade and, in the opinion of many experts, will probably continue to increase. According to 1980 USGS resource predictions, the U.S. OCS held 27-41% of total U.S. undiscovered recoverable oil resources (between 17 and 44 billion barrels) and 25-31% of total U.S. undiscovered recoverable gas resources (between 117 and 231 trillion cubic feet). However, these estimates are highly speculative until actual drilling takes place and commercial discoveries are, in fact, made.

The Costs Offshore drilling is a far more complicated and expensive endeavor than onshore oil and gas production. Wells often must be drilled in deep water as far as 150 miles offshore. Rigs must be built to withstand hurricanes, earthquakes, sea ice, waves 80 or more feet high and winds over 100 miles an hour. According to a survey by the American Petroleum Institute, the average 1978 drilling cost of an onshore exploration or production well was \$230,626, while one built offshore cost \$2,153,118.

9.33 times cost

Points of debate

Oil Spills A major concern of those questioning offshore drilling is the danger of accidental oil spills from OCS wells. Such spills, if large, can kill significant numbers of fish, seabirds, larvae, ocean mammals and other marine organisms; play havoc with the delicate coastal ecology, especially estuaries and spawning grounds; coat the ocean floor, destroying life on the seabed; and foul miles of shoreline. Fortunately, the safety record of OCS development has been generally good, particularly in the decade since the much-publicized rupture or "blowout" of the Santa Barbara, CA well in 1969. Prior to this incident, government environmental and safety regulation of offshore drilling was minimal, but after Santa Barbara and three other blowouts in 1970-71, the federal government stepped up its regulatory and inspection activities. This trend towards stricter regulations culminated in the 1978 amendments to the Outer Continental Shelf Lands Act (OCSLA) (see box). Increased scrutiny of offshore drilling seems to have paid off; since 1971, there has not been a major oil spill from a U.S. OCS well.

Nevertheless, any offshore drilling releases some oil into the surrounding waters, through minor accidental spills and inevitable discharges from the operation. However, current offshore oil drilling appears to constitute only a small percentage of annual oil pollution. Figures provided by the U.S. Coast Guard attributed only 1% of the volume of oil spilled in U.S. waters in 1979 to offshore oil production (excluding transport). On the other hand, a proportionately small spill or discharge may have an inordinately large effect in a particularly sensitive location (such as Eel River or the Georges Bank, prime fishing areas being considered for OCS leasing).

Proponents of increased OCS operations argue that the risks of oil spills are small and that the OCS compensation funds and the continuing improvements in clean-up technologies limit the damage possible from an accident. Others disagree, however, and cite, among other sources, the 1980 testimony by the chief of the Coast Guard's environmental response division that stated the government lacked "an in-place capability to respond to a major oil spill" and that "significant technological advances" did not appear forthcoming. Such critics are particularly concerned because OCS drilling is being extended to lease sites with conditions that are less environmentally favorable. For example, many proposed sites off Alaska are in waters that are very rough and/or are often covered with ice--conditions that impede not only normal OCS operations, but also all current oil spill contain-

THE 1978 OCSLA AMENDMENTS

The most significant law affecting offshore drilling is the Outer Continental Shelf Lands Act (OCSLA) as amended in 1978. The amendments to the act, intended to expedite OCS development in an environmentally sound manner, address many problems identified by public interest groups, industry representatives, and state and local officials and provide for increased social/environmental protection against offshore drilling operations by:

- requiring "best available and safest technologies" for OCS operations;
- establishing an oil spill liability fund and a fisherman's compensation fund to provide assistance if damages occur;
- granting the Secretary of the Interior the authority to cancel a lease due to environmental concerns;
- giving state and local officials larger roles in decisions concerning offshore drilling.

The amendments also build increased public participation into the OCS leasing process. The opportunities for citizen input include:

- *Call for Nominations.* BLM invites citizens, industry and public officials to identify specific tracts that they feel should be included or excluded from a proposed lease sale.
- *Lease Sale EIS.* The public is encouraged to comment on BLM's initial environmental impact statement (EIS) on the effects of the proposed lease sale. These comments are taken into account when BLM draws up a final impact statement.
- *Development and Production EIS.* BLM must solicit citizen input through a similar process at least once in each leasing region to determine the impacts on the area from oil and/or gas production.

Enactment of the 1978 legislation has not quenched all criticism of the OCS program. Industry representatives claim the proliferation of regulations and environmental reviews results in unnecessary costs and delays in offshore petroleum production--costs and delays our country can't afford. But many environmentalists and state and local officials feel that the OCS public participation process is merely a charade and that DOI is determined to push forward OCS development despite unanswered questions or potential ecological damage. They contend that such a short-sighted effort to speed up OCS leasing could result in long-term ecological disaster.

Current signals from the new Administration indicate that the federal government will be looking for ways to step up offshore drilling by accelerating lease sales, releasing more land for development and reducing environmental review periods.

ment technologies. And, because important commercial fisheries, especially fragile ecosystems and sensitive habitats for many rare or endangered species are located in these regions, the effects of an oil spill could be particularly serious and long-lasting.

The long-term effects of oil spills and routine oil emissions associated with OCS operations are being debated among scientists and others. Some dispute the claim that oil spills cause permanent damage, drawing on studies from the Santa Barbara and other accidents that indicate that an ecosystem is able

to re-establish itself. Many also feel that small, chronic oil discharges do not harm the marine environment and that offshore oil/gas facilities may even promote ecological goals by giving sea life a place to feed, grow and breed. Others strongly criticize the approach and/or findings of post-accident studies. They claim that available information is inadequate for determining long-range effects, and argue for more time and money to determine the impacts of oil releases on all stages of development of the ocean ecology.

Other Environmental/Social Concerns Potential oil spills are not the only basis for objections to OCS development. Additional areas of concern include:

■ *Other Effluents.* Offshore drilling involves a routine discharge into the water of drilling muds and cuttings, oil brines and other wastes that may contain substances toxic to sea life.

■ *Onshore Development.* Offshore drilling is accompanied by an array of onshore facilities--ports, offices, storage and repair facilities, housing for workers, possible refineries or petro-chemical plants, etc. The growth in population and industry may disrupt traditional economies and ways of life in undeveloped areas, resulting in a "boom town" phenomenon. (See *The Onshore Impact of Offshore Oil*, LWVEF Pub.#661, 40¢.)

■ *Air Quality.* Emissions from OCS operations and related onshore facilities may have significant adverse impacts on the air quality of the area.

People are saying

We should adopt a "leasing on demand" policy for the Outer Continental Shelf lands. Because of its size, geology, and relative lack of development, the (OCS) is outstanding among the many areas within the country for its potential to add to our petroleum reserves. There is no legitimate national purpose served by delaying exploration and development of lands believed to have economically recoverable resources.

The Halbouty Report, Reagan Energy Task Force 1980

Will we develop the technology to tap offshore oil reserves safely, so that the oil ends up as gasoline in our cars, rather than as oil spills poisoning our coastal waters and destroying our most important fishing grounds?...Will all of us continue to be involved in national land policy, or will a few private interests be permitted to over-exploit the public lands?

Senator Edward Kennedy (Democrat, MA) 1981

For more information

Beinecke, Frances. *Offshore Oil Leasing*. Natural Resources Defense Council, Inc., 1980. 122 E. 42nd St., New York, NY 10017. 28 pp., free.

Public Interest Liaison, American Petroleum Institute. 2101 L St., NW, Washington, DC 20037.

U.S. Department of the Interior, Office of OCS Program Coordination, 18th and C St., NW, Washington, DC 20240.

U.S. Geological Survey, Office of OCS Information, Mailstop 640, National Center, Reston, VA 22092.

Researched and written by Carol Cross, LWVEF Energy Department. (c) March 1981, LWVEF. Pub. No. 478, 20¢ a copy, 10/\$1.00. Order from the League of Women Voters of the United States, 1730 M St., NW, Washington, DC 20036.

ENERGY 12

Energy Readings 1981

General

ENERGY FUTURE. Robert Stobaugh, Daniel Yergin et al. Harvard Business School Energy Project. Random House. 1979. 265 pp. Cloth: \$12.95, paper: \$2.95. After surveying conventional and emerging energy technologies, the authors argue that conservation is the most economic and socially beneficial energy source currently available and outline programs for removing distortions in the market and political systems that work against conservation and solar energy.

ENERGY: THE NEXT TWENTY YEARS. Hans H. Landsberg et al. Ford Foundation. Ballinger Publishing Co. 1979. 603 pp. Cloth: \$25.00, paper: \$9.95. Analysis of economic and energy demand forecasts, energy supply potentials and environmental and health consequences of energy sources. Recommends policies for changing energy pricing, reducing dependence on foreign oil, improving health regulation and increasing supplies of both conventional resources and alternatives such as conservation and solar energy.

ENERGY IN AMERICA'S FUTURE. Sam H. Schurr et al. Resources for the Future. Hopkins Press. 1979. 544 pp. Paper: \$10.95. Examines economic and political framework in which our energy choices will be made. Reviews the possibilities, pros and cons of U.S. energy options, then proposes three basic goals for U.S. energy policy: maintaining an adequate energy supply employing all available energy sources, balancing advantages and disadvantages; promoting conservation; and protecting environmental quality and human health and safety. Discusses how to achieve these goals.

THE DEPENDENCE DILEMMA: GASOLINE CONSUMPTION AND AMERICA'S SECURITY. Daniel Yergin, ed. Harvard University Center for International Affairs. 1980. 167 pp. Paper: \$4.95. Report of symposium held to address the urgent security and economic problems posed by U.S. over-dependence on imported oil. Emphasizes crucial need to reduce gasoline consumption and offers several solutions. Order from HCIA, Publications Office, 1737 Cambridge St., Cambridge, MA 02138.

ENERGY: FACING UP TO THE PROBLEM, GETTING DOWN TO SOLUTIONS. National Geographic Special Report. 1981. Paper: \$1.15. Highly readable summary of the U.S. energy situation. Includes 12-page illustrated atlas of energy resources, handy glossary of energy terms, concise analy-

sis of world energy resources and views of six energy experts with widely differing viewpoints. Order from National Geographic Society, Dept. 5000, Washington, D.C. 20036.

THINKING THROUGH THE ENERGY PROBLEM. Thomas C. Schelling. Council on Economic Development. 477 Madison Ave., New York, NY 10022. 1979. 63 pp. Paper: \$5.00. Argues for flexible energy policy that does not artificially suppress energy prices, but meets true costs with strategies that allow equitable burden and benefit sharing and economic growth without inflation.

ENERGY IN TRANSITION 1985-2010. National Academy of Sciences. Committee on Nuclear & Alternative Energy Systems (CONAES). W.H. Freeman & Sons, 660 Market St., S.F., CA 94104. 1979. 677 pp. Paper: \$11.95. Thorough analysis of U.S. energy situation. Beyond stressing the need for energy conservation, no set energy strategy is offered -- except the importance of maintaining flexibility through a variety of energy options.

ENERGY POLICY IN PERSPECTIVE: TODAY'S PROBLEMS, TOMORROW'S SOLUTIONS. Crauford D. Goodwin, ed. Brookings Inst. 1775 Massachusetts Ave., N.W. Washington, D.C. 20036. 1981. 728 pp. Cloth: \$29.95, paper: \$14.95. Series of historical studies on programs and shortcomings in U.S. energy policy from 1945-1979, meant as a guide for present and future policy makers.

THE LEAST COST ENERGY STRATEGY: MINIMIZING CONSUMER COSTS THROUGH COMPETITION. Roger Sant. Energy Productivity Center, Mellon Inst. Carnegie-Mellon Univ. Press. 1979. 50 pp. Paper: \$5.00. Argues that pursuit of cheapest means of supplying heat, light and other energy "services" would draw conservation-related technological improvements into the market and bring hefty savings in consumer costs. Author suggests that this pursuit would encourage competition crucial to most efficient provision of energy services.

Conservation

ENERGY CONSERVATION RESOURCES. Julie Slavet. Conference on Alternative State and Local Policies. 2000 Florida Ave., NW, Washington, DC 20009. 1980. 19 pp. Paper \$2.95. Excellent source for locating books, periodicals, legislation and national/regional organizations dealing with all aspects of energy conservation.

ENERGY AND ARCHITECTURE: THE SOLAR AND CONSERVATION POTENTIAL. Christopher Flavin. Worldwatch Inst. 1776 Massachusetts Ave., NW, Washington, DC 20036. 1980. 64 pp. Paper: \$2.00. Emphasizes the international necessity of increasing energy efficiency in buildings through practices such as weatherizing, solar additions, climate-sensitive design and retrofitting of older homes. Recommends national policies to encourage conservation and energy efficiency.

WOMEN'S ENERGY TOOL KIT. Joan Byalin. Consumer Action Now (CAN). 355 Lexington Ave., New York, NY 10017. 1980. 75 pp. Paper: \$4.95 + \$1.50 postage. Lively handbook geared to women on how to maximize energy efficiency in the home. Construction projects clearly laid out, with diagrams and lists of required materials and tools. Includes a regional energy savings calculator, ideas for building community awareness, and resource lists.

A RATEPAYER'S GUIDE TO PURPA. Alden Meyer. Environmental Action Foundation. 724 Dupont Circle Bldg. Washington, DC 20036. 1979. 30 pp. Paper: free. Concise handbook on the Public Utility Regulatory Policies Act (PURPA) of 1978 aimed at the consumer interested in conservation and rate reform issues.

Solar & renewable resources

ENERGY STRATEGIES: TOWARD A SOLAR FUTURE. H. Kendall and S. Nadis, eds. Ballinger Publishing Co. 1980. 320 pp. Cloth: \$16.95. A report of the Union of Concerned Scientists suggesting that with careful development, renewable resources can replace nuclear power and diminishing fossil fuels in the forms and quantities most needed.

1980 SOLAR ENERGY INFORMATION LOCATOR. Solar Energy Research Institute (SERI). 1617 Cole Blvd., Golden, CO 80401. 58 pp. Paper: free. Complete directory to solar information resources, including regional offices of the federal government, regional and national organizations and periodicals. Update available.

STATE SOLAR ENERGY INCENTIVES PRIMER: A GUIDE TO SELECTION AND DESIGN. SERI. Pub. #SERI/SP-434-470. 1980. 35 pp. Paper: \$4.00. For citizens interested in state energy planning issues, this primer describes ideas and institutional frameworks for creating state-level programs to accelerate the use of solar technologies. Includes suggestions for financial incentives and a list of references by state. Describes effective programs. Order from National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, VA 22161.

STEPPING STONES: APPROPRIATE TECHNOLOGY AND BEYOND. G. Coe and L. de Moll, eds. Schocken Books. 200 Madison Ave., New York, NY. 1978. 204 pp. Paper: \$7.95. Collection of essays that explore the philosophic concepts behind the term, "appropriate technology." Includes examples of these philosophies put in practice through the use of renewable resources.

WOOD: AN ANCIENT FUEL WITH A NEW FUTURE. Nigel Smith. Worldwatch Inst. 1776 Massachusetts Ave., NW, Washington, DC 20036. 1981. 48 pp. Paper: \$2.00. Analyzes firewood's expanding contribution as a domestic and industrial fuel. Outlines sound management policies for controlling ecological damage from timber cultivation and burning.

ENERGY PRIMER: SOLAR, WATER, WIND AND BIOFUELS. R. Merrill and T. Gage, eds. Dell Publishing Co., Inc. 1 Dag Hammarskjold Plaza, New York, NY 10017. 1978. 256 pp. Paper: \$7.95. Comprehensive guide to the workings and potential of small-scale renewable resource technologies. Semi-technical, this book discusses solar, wind, water, biomass and combined systems technologies. Includes book reviews and hardware source lists.

SHINING EXAMPLES: MODEL PROJECTS USING RENEWABLE RESOURCES. Center for Renewable Resources. 1001 Connecticut Ave., NW, Washington, D.C. 20036. 1980. 210 pp. Paper: \$6.95. Catalog of innovative commercial, community, agricultural and government projects using conservation, recycling, and renewable resources. Also included are financial programs that underwrite regional renewable resource programs.

Synthetic fuels

FOSSIL ENERGY FACTSHEETS: Gas From Coal, Liquids From Coal, Oil Shale. These factsheets briefly describe, in non-technical terms, the history and technical processes involved in producing liquid and gaseous fuels from coal. Order from U.S. Synthetic Fuels Corp. Info. Center, 1200 New Hampshire Ave., Suite 460, Washington, DC 20586. Free.

SYNFUELS FROM COAL AND THE NATIONAL SYNFUELS PRODUCTION PROGRAM: TECHNICAL, ENVIRONMENTAL AND ECONOMIC ASPECTS. Committee on Energy and Natural Resources, U.S. Senate. Pub. #97-3. 1981. 304 pp. Paper: free. Examines in detail the state of technology, production outlook, environmental impacts, health concerns and regulatory framework associated with coal-based synthetic fuels industry. Reviews and analyzes federal programs affecting commercialization. Order from U.S. Government Printing Office, Washington, DC 20402.

SYNTHETIC FUELS AND THE ENVIRONMENT: AN ENVIRONMENTAL AND REGULATORY IMPACTS ANALYSIS. U.S. DOE. Pub. #DOE/EV-0087. 1980. Paper: free. A comprehensive analysis of synfuels technologies (including biomass and urban waste conversion), their environmental impacts, existing environmental legislation affecting them and additional environmental regulation that might be required for the future. Order from U.S. DOE, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830.

COAL GASIFICATION: AN UNCERTAIN FUTURE? Energy Factsheet #11. League of Women Voters Education Fund. 1979. Pub. #550. Paper: 20¢ + 50¢ handling. Describes various processes for converting coal to synthetic natural gas, the status of several key projects, and the pros and cons of coal gasification on a commercial scale. Order from LWVEF, 1730 M St., NW, Washington, DC 20036.

LWV-Texas
June, 1980
LL Pres. (2); DPM
II. A. 1. b.
Program - Energy

Program - Energy

The amendment language in S 2719 would delay placing BEPS into effect for two years. This would cost buyers of new houses alone \$660 million in energy costs which could be avoided. Obviously it would decrease oil imports!

WRITE TO YOUR SENATORS!!

G L O S S A R Y

BEPS Building Energy Performance Standards.

Clerestory (clear-story) Upper part of a room above an adjoining room.

Degree Day Unit of measurement of heating or cooling requirement.

Example: The heat requirement for a 4 month heating season would be figured by taking the difference between the desired building temperature (68°) and the average winter temperature (say 44°) and multiplying by 4 months of 30 days:

$$68 - 44 \times 4 \times 30 = 2880 \text{ degree days}$$

Design Energy Budget (DEB) The main principle of BEPS is to give flexibility and encourage the use of solar energy by allotting each new building a DEB based on its size, local climate, and fuel. It can then be designed in any manner which will make the calculation of its Design Energy Consumption (DEC) no more than its DEB. Its DEC is roughly its heat requirement times an energy (fuel) factor. In assigning these factors, energy sources are weighted reflecting their "national" cost: gas 1, oil 1.2, electricity 3 (about), and solar is free.

Heat exchanger or recuperator A device with many thin parallel planular compartments, with outgoing stale warm air and incoming fresh air passing through in alternate compartments. Heat exchange through dividers warms incoming fresh air.

Mass Any material with marked capacity for absorbing heat: masonry walls or floors, containers of water, plant boxes.

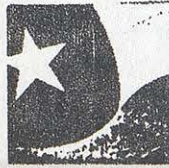
Passive solar design Building design in which the building becomes the collector or rejector of heat based principally on window placement and shading, internal mass, insulation, and ventilation.

Process energy Energy used for commercial or industrial processes in a building; e.g., heat for drying paint.

SMSA Standard Metropolitan Statistical area.

Thermosiphon Panel with glass face exposed to the sun in which a dark metal² is heated, causing air to rise and pass into the room through vents near the top and drawing in cooler room air through vents near the bottom.

Trombe wall. A giant thermosiphon. A black-painted masonry south wall, glass-covered outside, with a few inches of air space between wall and glass. The masonry becomes hot and radiates warmth for hours into the room. May have top and bottom vents. Must be shaded in summer.



LEAGUE OF WOMEN VOTERS OF TEXAS

1212 Guadalupe, No. 109 • Austin, Texas 78701 • 512/472-1100

Joanne Bakos
Office of Conservation and Solar Energy
Department of Energy
Docket Number CAS-RM-79-112
Mail Station 2221C
20 Massachusetts Avenue, N.W.
Washington, D.C. 20585

APR 26 1980

ENERGY PERFORMANCE STANDARDS FOR NEW BUILDINGS Docket Number CAS-RM-79-112

The League of Women Voters at national, state, and local levels has long been concerned with conservation of natural resources. In the area of energy, its present top priorities are conservation and transition to renewable sources. We therefore enthusiastically applaud the proposal of Building Energy Performance Standards, and support the "performance" form with its flexibility and potential for encouraging this transition.

We appreciate the extensive research required to arrive at the present form of the standards. We feel, however, that use of data based on structures built in 1970-76 has been made obsolete by the drastic rise in oil prices and change in public attitudes. Owners, designers, and builders were barely beginning to be concerned or knowledgeable about energy use in 1976. The worsening stresses in the U.S. economy and society traceable to the national energy crisis merit the choice of performance standards which will be of maximum economic benefit to the owner or occupant and to the nation. The new panoply of design and construction procedures is neither complex nor expensive. The major obstacle is psychological: the building community's fear of new rules. This fear has little relevance to strictness, but strictness has major relevance to effectiveness.

Hundreds of trade associations, solar energy societies, energy extension services, continuing education systems, and professionals are ready to augment the promised all-out DOE education program to erase this unfamiliarity and fear.

SETTING THE DESIGN ENERGY BUDGET

We feel that the DEB for each house should be no more lenient than the point "where the cost of saving the energy is equal to the cost of the energy to be saved" (Life Cycle Cost Minimum), using replacement costs of energy. In determining the LCCM the entire range of conservation and solar-energy options should be examined. These should not be sampled as add-ons but tried in

combination, in thoughtful designs. They should include:

- Interior mass isolated from exterior
- Trombe wall, with summer shade and night venting
- Thermosiphons under south windows
- East and west deciduous trees
- Cross ventilation washing internal mass
- Fans, especially night exhaust fans
- Wood stoves
- Earth tubes (adequate footage of PVC pipe, damper-controlled, connected into the return-air plenum so that earth-warmed air in the fall and earth-cooled air in the summer can be drawn in and circulated by the AC fan to all rooms to which it is ducted)

The LCCM analysis should be updated as often as movement of construction costs and energy-replacement costs shift more than, say, ten percent with respect to each other. If the economic benefit to the nation is great for a capital outlay of one percent two percent more than for the LCCM, consideration should be given to a stricter DEB.

As soon as the research can be completed, all other building types, including mobile homes, should be brought under this method of calculation for the DEB. The applicability of many of the procedures listed above to office and commercial buildings should be examined.

Since the regulations do not control building energy use after construction, if the DEB for similar structures is based on identical operating conditions it will result in an energy-conserving shell without controlling its subsequent use. In commercial buildings of mixed or unassigned occupancy or in buildings such as restaurants where process energy is complex, we suggest that a DEB for the building shell be assigned and advisory guidelines for operational energy conservation be provided on the supposition that maximizing profits will lead toward conservational operating procedures.

We feel strongly that all new buildings should comply with BEPS, preferably as functional types, but at least as regulated shells. This is subject to the exception, which we support, of omitting a building if its size and location would result in the use of more energy to administer the regulation than would be saved.

Operating Conditions

Domestic hot water should be included in DEB.

Infiltration should be included, coupled with use of a heat exchanger when the air flow is diminished below .6 change per hour. Infiltration is usually a major cause of heat loss, and should

not be ignored. The possibility of indoor pollution also should not be ignored, because of low-level radiation, vapors from building materials, smoke and other human-produced pollutants. Heat recuperators are non-mechanical and inexpensive; and, if equipped with filters, provide better fresh air than "accidental" infiltration.

Owner intervention, such as the use of insulating shades, is admittedly not altogether dependable, though it is certainly to be encouraged. Some owner intervention, however, should be credited, such as:

- Automatic night-set-back thermostat use
- Cross ventilation
- Use of whole-house exhaust fan

Climate

The tables for the 78 SMSA climate areas would be easy to use and fairly dependable in the case of standard building types on flat terrain. A much more specific calculation could be made, however, if a formula were available into which a variety of constants for each location could be inserted, including:

- (1) A constant related to the closest data on degree days heating (65° base) and cooling (78° base, not 65°)
- (2) A constant for local wind conditions, which could be site-specific, dependent on exposure vs. shelter
- (3) A constant for humidity
- (4) Constants for solar accessibility and percentage of possible sunshine
- (5) A constant for summer solar protection on south, east, and west
- (6) A constant for degree of exposure, i.e. detached, attached, semi-earth-sheltered, fully earth-sheltered

An owner could accept use of the nearest SMSA degree-day data or, with proof of validity, substitute more locally precise data.

Energy Weighting

We believe the idea of an energy-weighting factor reflecting the cost to the nation of various forms and mixes of energy is appropriate. It should take into account replacement costs. With national deregulation of oil and gas prices proceeding, nationwide weighted constants for these fuels are appropriate.

With some electrical generation coming from renewable sources (hydro, wind, and eventually solar), such regional electricity might be weighted lower.

Cost

The estimates of 1% to 2% additional cost for basic passive solar construction--more insulation, and redistribution

of windows, using multiple glazing--is in range of accuracy. Adding insulation, shifting windows, and plugging air leaks are the most effective and inexpensive energy-saving procedures. Exceeding R38 insulation for ceilings in colder areas should be required. Use of fully insulated 2" x 6" walls is probably indicated everywhere except in the farthest-south areas. The added cost is about \$1.50 per lineal foot of wall. Triple-glazed windows in cold climates are important, though not nearly so effective as insulative night shutters or blinds. A new double-air-space window has a special ultra-violet-protected polyester high-transmission film as the internal-air-space divider which increases solar transmission while reducing conductive losses.

Two very effective passive-heating strategies are greenhouses and earth sheltering. At Goddard College, in Vermont, an earth-sheltered greenhouse flourished all winter without heat. In Minnesota, a 2400-square-foot south-facing fully earth-sheltered house without heat never dropped below 41° F in the winter of 1980*.

Additionally, earth-sheltering is quiet and provides safety. Of 125 identified earth-sheltered houses in Oklahoma, the most-often given reasons for "going underground" were tornadoes, heating, cooling, and maintenance, in that order. With 7/8 of these built without architectural assistance and with very little solar heat-gathering design, the average in conservation performance is twice as good as the proposed BEPS would require.**

Passive design cost must always be examined from the whole plan, not as add-on procedures. When clerestory lighting and ventilation, minimum north openings, internal mass, and direct-gain south windows with summer-effective overhangs are combined with modest arrays of active solar panels, energy cost is very low. For example: a six-unit low-rise office building in Austin operates with an annual average energy use of 34,000 BTU per square foot. Austin's Energy Budget Level is approximately 115, Kansas City's is 107. The "strict" budget allotted to a small office in Kansas City is 46,000 BTU per square foot per year. The tenants in Austin are instructed in effective passive operation techniques--use of cross ventilation, night-time cool-out, ceiling fans, and conventional air-conditioning--but each is responsible for his own suite operation to meet his own comfort levels. Suite to suite, BTU use varies widely, but the overall average of 34,000 BTU is 1/5 to 1/10 of that in new conventional local construction. Water and space heating are with modest active solar installation; backup is a gas-fired pool heater. Construction price was competitive with non-solar construction.***

*Raymond Sterling, University of Minnesota, Minneapolis.

**Walter T. Grondzik, Oklahoma State University, Stillwater.

***Office building designed and built by L. M. Holder III, 4202 Spicewood Springs Road, Austin, Texas 78759.

Total cost

Building according to BEPS will have a somewhat higher first cost, 2 percent to 5 percent, lower combined mortgage-and-utilities monthly cost. The increased first cost will probably not be a deterrent to most owners, but special government assistance may need to be arranged for the buyers of least-cost construction to make ownership possible for many families. Recognition needs to be taken in Life Cycle Cost analysis of the transient nature of a large proportion of owners, and of the higher resale value of BEPS houses.

Passive Cooling

Little cognizance is taken of the costs of cooling or the passive procedures for lessening these, although the Energy Budget Level tables list 118 for Houston, compared to 117 for Minneapolis. Moreover, all cooling is now done with electricity. Much attention is needed here. In the mention of shifting 75 percent of the windows to the south wall, nothing is said of summer shade protection for them. Passive cooling strategies, except for desert coolers in arid areas, are not nearly so simple, inexpensive, or non-space-consuming as are heating strategies. Earth-sheltering, earth air tubes, dehumidifiers, fans, internal mass with night cooling are other possibilities for some sites in some regions.

APPLICATION

The computer-program evaluation procedure is alarming to thousands of small builders, professionals, and small-city code officials. That regulations seemingly so complex could be written into easily understood and applied equivalency codes is questioned. Great effort must be spent to do this well. Code officials must be well trained in applying the new codes. Acceptance of the program lies in the success of these two efforts rather than in leniency in the standards. Effectiveness of the standards lies in making them of maximum economic benefit to the owners and to the nation. They could do more than any other government action now proposed to save energy. As written, however, they are too lenient to substantially develop solar-energy use as intended by Congress.

IMPLEMENTATION

In case Congress does not pass sanctions to enforce compliance with the standards, a whole array of incentives and penalties must be provided. Training grants for national code groups and local code officials, grants to local and state organizations to educate owners and builders, partial withholding of federal benefits, and the requirement of a "performance sticker" on each building built with a loan through a federally insured money institution might be some possibilities. The sticker might be

similar to the new appliance tags, stating how much, under standard operating conditions, the energy for operation of the building would cost in an average year. This could be an educational technique for the public and provide an important competitive tool for builders.

Enforcement would lie with local building inspectors, as does enforcement of all present code provisions. If these people are trained adequately, compliance should be satisfactory, though no one is more effective in watch-dogging than an attentive owner.

Other matters not addressed by the standards but pertinent to building-energy conservation are:

(1) Solar access. Guidelines for planning of subdivisions with maximum solar access need to be made available to cities.

(2) Renovation. Far more people live in energy-wasteful old houses than will live in new ones for decades. Cost-effective remodeling procedures need to be devised and disseminated along with weatherizing assistance.

(3) Non-energy-intensive building materials. Vastly different amounts of energy are required to produce different building materials. Knowing and taking this into account can also contribute to national energy conservation.

Respectfully submitted,

Isabel Miller

Isabel Miller
Energy Director
League of Women Voters of Texas

April 25, 1980

TO: LL Presidents, please forward 2nd copy to
Energy or NR Chairman; DPM

FROM: Isabel Miller, LWV-T Energy Director

RE: E N E R G Y

LWV-Texas

May, 1980

LL Pres. Mailing (2); DPM

II. A. 1. b.

Program - Energy

I. LOCAL ACTION

Thanks to those who participated in the Program Direction exercises at Council, ENERGY was voted tops in the "Primary Emphasis" group! The message came out loud and clear, but the specifics of what you need from LWV-Texas are less clear because the Program Exchange groups were fairly small. Those present wanted:

1. Readable technical information on specific renewable energy sources in order to stand up to the skeptics.
2. Techniques for pressuring for utility rate reforms.
3. Ways of sensitizing the public about the need for individual owners to weatherize and/or conserve. Thermograms (infra-red aerial nighttime city photographs) were discussed.

I will proceed on #1. The first thing you will get will be my commentary on the Building Energy Performance Standards (BEPS) [proposed], together with a glossary of any technical words and ideas; because it is already written; because Laura Keever and I feel it would be of some use to you; and because you, with a knowledge of what BEPS is about, can be very useful to them. The reluctance to change familiar procedures is producing a mountain of unjustified opposition from builders and many architects. Though flawed, BEPS can do more than any other current proposal to save energy, and by permanent built-in measures which are very cost-effective. I hope when you are familiar with the proposal, you will speak up for it.

On #2, ways of pressing for rate reform, I will do some research.

On #3, ways of sensitizing the public to conservation and use of renewable energy sources, I urge you to read the LWVUS Ed. Fund Community Guide "Citizens: The Untapped Energy Source." It was sent on national DPM and is a gold mine of community action ideas. I particularly suggest that you explore the possibilities of coalition action with local solar or appropriate technology* organizations if putting on a good show is a little difficult for each of you alone.

I have talked with a city energy conservation official and learned that many cities do indeed have thermograms but have found the amount of employee time required to publicize and discuss them with individual property owners is prohibitive. He felt the offer of volunteer assistance from local Leagues might make this feasible. He cautioned that the information they show is only relative (a building loses more or less heat than its neighbors through its roof) and specific cost-effective recommendations would still have to come from filling out a Texas Conserve form** or getting an energy audit from an energy conservation official.

* Practice of choosing least energy-consuming tool or machine adequate to the job to be done, e.g. bicycle: short trip, car: long trip.

** For free computerized energy audit, available from county extension offices, city energy conservation offices, and banks.

ENERGY (cont.)

After you have read "Citizens: The . . ." and have a project, let me know how I can help with whatever you elect to do . . . or if I can help you in deciding what to elect.

II. LEGISLATIVE Proposals in the making

We do not know yet what may show up next year; but there are sure to be recommendations from the new Solar Advisory Committee whose mandate is to determine the appropriate role of the state in "supporting research, development, demonstration, commercialization, and information dissemination activities related to solar and other renewable sources of energy." We will hold hearings in:

El Paso	May 28	Civic Center	12:00 noon - 5:00 P.M.
Lubbock	May 30	Civic Center	12:00 noon - 5:00 P.M.
San Antonio	June 10	Hemisfair Plaza	2:00 P.M. - 6:00 P.M.
✓ Dallas	June 12	not determined	10:00 A.M. - 1:00 P.M. 2:00 P.M. - 6:00 P.M.
Houston	June 14	Univ. of Houston	10:00 A.M. - 1:00 P.M.
		Continuing Ed. Bldg.	2:00 P.M. - 6:00 P.M.

As a member of this committee and as a Leaguer I urge you to come and have your say on the recommendations. Remember, solar is not on trial; how Texas can facilitate its development is the issue.

The technology for active and passive solar heating, ⁺ hot water heating, agricultural and industrial process heat production, small wind generators, and photovoltaics has all been determined to be commercially viable. The barriers to widespread use are political in the broad sense: public information, consumer confidence and protection (including equipment standards and certification, installation-personnel training and licensing), tax policies, building codes, land use policies, sun rights, and federal, state, and local coordination.

* * * * *

Of course solar is not the answer to our energy woes. We need and will continue to need a mix of energy sources. But with conservation (the "instant" strategy) giving lead time for transition to renewables while stretching our oil and gas reserves, perhaps we can avoid the Texas lignite strip becoming a Ruhr Valley and Texas prairies a reactor plain.

For an excellent, thoroughly-researched examination of the alternatives read Energy Future, Report of the Energy Project at Harvard Business School, edited by Robert Stobaugh and Daniel Yergin, Random House, 1979.

Meanwhile campaign for support of renewable energy with legislative and Railroad Commission candidates!

Isabel Miller (817) 387-1659
711 West Sycamore
Denton, TX 76201



memorandum

February 1980

THIS IS GOING ON DPM

TO: State and Local League and ILO Presidents

FROM: Dorothy K. Powers, Energy Chair

RE: Energy COMMUNITY GUIDE, Citizens: The Untapped Energy Source

The LWVEF is pleased to send you the enclosed COMMUNITY GUIDE, Citizens: The Untapped Energy Source (Pub. #436, 50¢) which, as some of you have noticed, was originally scheduled to be included in the previous President's mailing but did not make it. This Guide describes many of the projects designed and carried out by state and local Leagues under the LWVEF's Energy Education Outreach Program, Phases I and II. The purpose of the program was to increase citizens' awareness and understanding of energy issues so that they may more effectively participate in energy decision-making. You can all be very proud, as we are, of the efforts of your Leagues. The projects have increased the nationwide respect for League accomplishments and, in particular, for your contribution to the energy dialogue in this country.

Drawn from those projects for the Guide are tips and techniques to aid your League and other groups in your community in planning and conducting similar citizen energy education activities. The Guide is primarily aimed at Leagues and groups that want to become involved in the public energy education process but who don't quite know what to do or how to do it. More experienced Leagues and groups, however, will also find useful ideas and suggestions.

Citizens: The Untapped Energy Source does not aim to be a step-by-step "how-to" guide. Many such publications are available with information on organizing volunteer efforts and on specific types of public education activities. Several are listed in the COMMUNITY GUIDE's Resources section. Leagues are already a step ahead of most other groups because of their established organizational network through which they can obtain information on other League's experiences--such as is provided in this COMMUNITY GUIDE.

The COMMUNITY GUIDE will be the primary vehicle by which we inform the public of the LWVEF's Energy Education Outreach Program and other groups would certainly be interested in it. Through the dissemination of this Guide to the wider public, we will extend even further the usefulness of League projects (in addition to the continuing efforts of the Leagues). We encourage you, therefore, to make the Guide known to your community and to state and local energy officials, especially those involved with public information and education. The U.S. Department of Energy's Office of Consumer Affairs has already purchased 5,000 copies to distribute through its mailings.

Within a few weeks you will also receive an energy "swapshop" packed with a variety of other state and local League activities which should fill in the picture of what Leagues are doing on energy. Good luck and be sure to keep the LWVEF informed of your energy activities so that we can continue to share your experiences with other Leagues.

Citizens: The Untapped Energy Source

What can we do about it?" "Isn't that just a technical problem?" "What do we really want . . . what kind of community . . . power plant . . . environment . . . society?" "Can we get help?"

Since 1973, the League of Women Voters Education Fund (LWVEF) has been helping community leaders and a confused, often cynical public understand the nature of our energy problems and what they can do about them. The Education Fund's purpose has been to provide facts, clarify issues and highlight key points of view so that citizens can act responsibly—define their own values, set priorities, weigh the alternatives and choose wisely among them.

With the help of grants from government agencies, principally the U.S. Department of Energy (DOE), and contributions from over 76 energy industries and utilities, the LWVEF has sponsored a wide variety of energy education projects through the network of Leagues located in 1328 communities in all 50 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands. Many thousands of persons have been involved in these projects and the follow-up activities they generated.

Public interest in the energy problem has exploded during the six years since the LWVEF's first energy activities began. New federal and state policies and programs have affected energy supplies and distribution, and citizens are increasingly involved in their implementation. Hardly a day passes without a major energy story in the news. Organized citizen activity is on the rise as energy prices escalate, gasoline lines develop or plans to build a new power plant or to develop new energy sources are announced.

International implications aside, the interests involved in our country alone are numerous, powerful and often conflicting—homeowners, oil companies, labor unions, truckers, environmental groups, resource-producing states, consumers and so on. Their views about the energy "problem" and its solutions differ enormously. Finding a way to bring these competing interests together to devise a course of action that will serve us all is the challenge facing community and political leaders. By bringing diverse groups of citizens together to focus on energy issues, the LWVEF has found a proven, effective way of dealing with this challenge. This COMMUNITY GUIDE describes a variety of ways to do this, drawing on the LWVEF's experience. We hope that it helps other groups and individuals design successful energy activities.

The guide includes a sample conference agenda, suggestions on organizing an energy fair, and the do's and don'ts of producing a lively slide show or public service announcement. It is meant to give you ideas and tips and to help you match your plans with your goals and your resources. It also outlines organizational techniques that are essential to putting on an effective program and lays out suggestions for cooperating with community groups, industry, gov-

ernment agencies and educational institutions. Finally, it identifies selected materials and resources to help you get started.

Getting started

Planning an energy education project is definitely a group activity. If you are part of an established organization that is active in your community, you already have an essential base of support. Even so, your group may want to create a coalition, whether formal or informal. Working with other groups is a time-honored—and effective—way to multiply your resources and widen your audience. Don't rule out the possibility of working with a group whose aims are not identical to yours, but be sure that your purpose is not eclipsed by any hidden agenda.

If you are not plugged into an existing organization, you might try approaching a community service club or other organization with your idea for an energy event. Check with local or state chapters of national environmental, public interest or civic organizations—Sierra Club, League of Women Voters, Rotary, Jaycees, Audubon Society, and so on. Don't forget your government energy office or related agencies, the chamber of commerce, local utility or community college, extension services, professional societies and associations, businesses and industries. And check to see if a new alternative energy group, such as a solar coalition, may have formed in your area.

The other part of getting started is deciding what it is you and your group want to do. *Begin by defining your objectives and your audience, then select a project that best enables you to reach your target audience.* The energy education ideas throughout this guide are designed to help your brainstorming. Use them to get your creative juices flowing; review them later when you have a planning committee lined up.

When deciding on a project, be sure to consider:

- Is there a specific energy issue that provides a focus for citizen concern? Talk with local government officials, business leaders and civic groups to find out what's on their minds.

- Have there been other energy programs or events in your area? Who sponsored them? Do some research to find out how they turned out. This will give you some ideas of what groups to contact and will also help you decide on what you want to do.

After you have tentatively chosen a project, consider:

- Whom do you want to reach? All citizens? Homeowners? Commuters? Young people? Low-income renters? Landlords?

- What are the facts about your state and local energy supply/demand situation?

Getting organized

Once you've defined your project, it's time to get organized. Clarify at the beginning how your group or

COMMUNITY GUIDE



League of Women Voters
Education Fund
1730 M Street, N.W.
Washington, D.C. 20036

Excerpts from the Conference Agenda
"Nuclear Waste: How Will We Manage It?"

Sponsored by the League of Women Voters of New Mexico
 at the Holiday Inn de Las Cruces
 May 4 & 5, 1979

MAY 4

12:45	WELCOME ADDRESS	Mayor of Las Cruces
1:00	OVERVIEW OF THE NUCLEAR WASTE CONTROVERSY	Policy Analyst, Harvard University School of International Affairs
1:30	HUMANIST PERSPECTIVES OF THE CONTROVERSY	
	Historian	from
	Philosopher	New Mexico State
	Political Scientist	University
	PANEL DISCUSSION; QUESTIONS & ANSWERS	
	Panel Moderator	University Dean
	Panel	Economist & Humanists
4:00	SMALL GROUP DISCUSSIONS—Session I	
7:15	STATE'S ROLE IN NUCLEAR WASTE MANAGEMENT	State Secretary for Health and Environment

MAY 5

9:00	THE FEDERAL NUCLEAR WASTE MANAGEMENT PROGRAM; Q & A	Manager, DOE's Waste Isolation Pilot Project
9:35	PERSPECTIVES ON THE HAZARDS OF NUCLEAR WASTE; Q & A	Rep. from Nuclear Data Group at Los Alamos Labs (Pro- nuclear perspective)
10:05	RADIOACTIVE WASTE, THE NUCLEAR INDUSTRY AND OUR FUTURE; Q & A	Physicist from Southwest Information Center (Anti-nuclear perspective)
11:15	GROUP DISCUSSIONS—Session II	
2:00	CITIZEN INVOLVEMENT IN PUBLIC POLICY	State League President
4:00	CONFERENCE EVALUATION	

which not only helped ensure a good audience but also carried energy information to a much wider public. Such is the double benefit from good publicity for any project.

Another hint from the Florida conference: if possible, invite a major public official to participate in your event, especially if he or she has an avowed interest in the issue.

The Florida conference organizers increased their news coverage by coordinating their conference with the governor's dedication of a solar office building and having him give the conference's opening address immediately following the dedication.

A large conference like the one in Florida can be costly. The state energy office's cosponsorship enabled the LWV of Florida to stretch its funds much further than would have been possible had the League attempted it alone. The Leagues of Wyoming and Colorado jointly conducted a conference/workshop on uranium mining in Laramie, WY that attracted over 200 participants from all over the region. In addition to LWVEF grants, they raised over \$11,000 for a total budget of \$23,900.

More on conferences and other meetings

- Contact your state or local energy office, energy industries or other related organizations to learn what they can do to support

your effort. Will they participate or cosponsor?

- Consider doing a PSA (for radio and/or TV) to promote your conference (see PSAs, p. 7).

- Provide adequate breaks, especially if the conference covers more than one day, and don't skip them to make up lost time.

Fairs

Fairs are a popular and generally successful means of taking basic energy messages—rather than in-depth information—to large numbers of people. A fair is an ideal place to give people—people who might not come to meetings—an overview of energy sources and issues, through models, charts, demonstrations and other eye-catching exhibits (see below). A wide variety of exhibitors helps to attract people by offering something for everyone. The idea can be easily adapted to the goals and resources of almost any group. But to be successful, even the smallest neighborhood fair requires planning and imagination.

In 1978 the LWV of West Virginia conducted an energy fair at the state's largest shopping mall, in Parkersburg. In more than 40 colorful and intriguing displays, plus scale models, films and literature, the West Virginia fair's 25 exhibitors, including government, industry, utilities and professional organizations, covered all sides of the energy picture—from exploration to production to consumption—with special emphasis on West Virginia's natural resources.

The fair attracted over 60,000 people, including 600 school children. The League encouraged school trips by sponsoring an essay contest for junior high students and displaying winning compositions on the topic, "What sources of energy should the United States be using in the year 2000?"

The success was no accident; it was a product of early planning and contacting of exhibitors, relevance of displays, a good location and advance publicity. Holding the fair in a shopping mall, was a big asset because it provided a large ready-made audience. At a fairground or special fair location publicity assumes even greater importance because you need to make sure that many people learn about the fair in advance. To assure a large attendance, West Virginia organizers blanketed the area with publicity and intensified their efforts two weeks ahead. A local TV station ran a five-minute promotion; 13 radio stations ran PSAs extensively; 300 posters were put up; 500 letters were sent to area schools; and newspapers ran announcements in addition to providing coverage of the fair. Five area TV stations filmed and covered the event, including a long TV interview with the project manager and three exhibitors.

A tip: the West Virginia League attributes the wide TV coverage in part to their fair's emphasis on action—moving models, people involved in doing things.

Five Wyoming Leagues also conducted energy fairs focusing on energy conservation techniques and alternate energy sources such as wind and solar power. Those Leagues attribute their good attendance (over 8,000 people) to their excellent publicity, especially the TV broadcast of a film of one of the local fairs. The state League contracted for the film's production and used it to promote the other local fairs. In addition, the Wyoming League stressed another important plus—the cooperation of other organizations, such as local chambers of commerce and local businesses in planning and managing the fairs.

More on fairs

- Start planning early. Try to set the dates not less than four months in advance and solicit exhibitors as soon as possible. Most potential exhibitors—such as utilities, energy-related industries and state energy offices—are heavily booked, so if you wait until the last minute to invite them, you may be too late. For instance, a particularly good source of exhibits, the Oak Ridge Associated Universities Museum Section (see Resources), should be contacted at least three months ahead of your fair. For some exhibit ideas, see the box on page 4 of exhibits at the Buffalo, WY energy fair.

- Be imaginative about location. Consider shopping malls, schools, fields, parking lots, parks, fairgrounds, warehouses. There should

Bus ads and billboards

The LWV of Michigan certainly took its display to its audience. The League placed posters, with clever messages about conservation or efficient use of energy and renewable resources, in public buses in eight Michigan cities. The local transit authorities in those cities donated the ad space, and their advertising agency counseled the League on ad copy and design. Ridership surveys assured the League that a large percentage of the population of their target cities rides the buses regularly and that most riders do indeed read the ads. Don't you?

The Tennessee League found another way to use advertising to convey an energy message: billboards. Using ad space donated by a large outdoor advertising firm, and assisted by the University of Tennessee's advertising club (which made the League campaign its project for the year), the League placed its message, "There is an energy crisis. Believe it!", on billboards in nine Tennessee cities.

More on exhibits and displays

- Expect the unexpected! The Massachusetts League encountered some legal and insurance difficulties in renting and driving the van and had to have a special harness built to hold the exhibits—types of unexpected problems that are bound to turn up in any project.
- As the above examples show, an energy booth or the elements of an energy display can be scaled to suit your resources. With creativity, eye-catching displays can be made from simple materials like poster boards, photographs and charts.
- To give a display depth, pull the displays off walls and tables and try to arrange a freestanding exhibit on display boards. The LWV of Utah used display boards in folding units that were easy to transport and use at public meetings; the LWV of Arizona incorporated their displays into freestanding lucite columns.

The written word

Assemble energy materials

For quantity and depth of information on a given subject, few things beat a well-written publication. And there are a great number of ways publications can be used in energy education projects. One useful project is to assemble kits of energy materials—books, pamphlets, factsheets—for presentation to schools and public libraries. There are many sources of free handout-type energy flyers, brochures, reports and bibliographies. Again, government agencies,

A doll house that's not just a toy

Have you thought about building an energy program around a doll house? Well, that's what the League of Women Voters of Illinois did, starting with a scale-model house built by a League member to illustrate how a typical home might be retrofitted to save energy. Recognizing a good idea, the state League contracted with the member to build more portable houses, which the League used in weatherization demonstrations at energy fairs, city halls, schools and libraries around the state and on television.

Energy-saving features, including a storm door, attic and basement insulation and an insulated hot water heater, and energy-saving practices around the house, are described in brochures that are distributed to audiences.

The houses have generated a great deal of excitement and interest and have proven to be excellent learning tools. Portable houses accompanied by a trained demonstrator are most effective, but clearly labeled houses can also make a fascinating display on their own. Energy-efficient model houses can be expensive in materials and labor, however, so be sure you have the resources before you begin this type of project.

How about puppets?

Taking a cue from *Sesame Street*, the Montana League chose a puppet show to tell young audiences about the importance of conserving energy. And so, "Take That, You Monster!" was born. This imaginative show, presented with sound and light effects and brightly costumed puppets, deals with a typical family whose energy waste helps the Energy Monster drain the Earth of its valuable resources. However, Insulator Man (the Superman of energy conservation) and the Sun Princess (representing all renewable energy sources) save the day by showing the family how to conserve energy, which enables them to conquer—at least temporarily—the consuming monster.

The impact of the puppet show was multiplied by materials the League distributed at the presentations—buttons to remind children to conserve energy and coloring books for them to take home (thus exposing parents to the ideas as well). When requests for performances outstripped their person-power, the League developed a teacher's kit that included hand-puppet versions of the cast, as well as a script, sound track (including energy conservation songs), suggestions for further activities, and the buttons and coloring books. Now school groups all over Montana (and some in 15 other states) are putting on their own productions of "Take That, You Monster!"

utilities, energy companies and public interest organizations are generally good sources of free or inexpensive material.

The Virginia League put together a very comprehensive kit, sending boxes of about 100 books and pamphlets to 205 Virginia public libraries. The materials covered the nation's energy outlook from a variety of viewpoints and included practical "how to" energy conservation materials and promotional information. The League received assistance—ranging from advice on books to free materials to project funds—from DOE, the Virginia Energy Office (VEO), and the Virginia Polytechnic Institute and State University Cooperative Extension Service (VPI). To ensure that the materials did not just sit on shelves, those involved jointly undertook a large promotional campaign.

The League and the other groups received a good return on their invested time, hard work and money, not the least of which was the goodwill and cooperation among the parties involved. In addition, the kits and their publicity sparked library visits and use of the materials by school classes, scouts and other groups.

More on kits

- Tie the presentation of the kit to special events such as the kickoff of an energy campaign, or Energy Week, to increase awareness and understanding of energy issues.
- If you don't have the resources to assemble kits, why not compile a bibliography of free or inexpensive energy materials?
- For major or controversial issues, try to find objective or balanced publications or at least list works from different points of view.

Or write your own

You may decide to write and publish your own publication. Before you do, be sure that there is a real need for it, that you have access to or can tap the skills of a good researcher/writer, and that you have a good means of distributing the publication and encouraging its use. If you write about a complex or controversial issue, try to obtain a balanced yet knowledgeable outside review.

Putting together scattered information on your state's energy picture is often a needed service, as the LWV of Indiana discovered. Using various studies of parts of the picture, that League gathered information explaining what sources the state has, how energy is used there, what regulations control it, and what the state's energy prospects are. They distributed their nine-page booklet to public and school libraries across the state, Indiana's legislators, pertinent state agencies and the media.

Publications make good companion pieces to other education

If you can work with a good university film department or a local TV station, you can probably do a fine film with a relatively small budget. The LWV of Idaho and a local commercial TV station produced a 30-minute documentary on Idaho's present and future energy supplies for which the League supplied only about \$1,500.

Before you plunge into filmmaking, check to see if there are any films that can suit your purpose. An existing film, even if not exactly what you would have done, can sometimes provide general background information or serve as a point of departure for discussion. Many energy films are available from university film rental libraries, municipal and county library systems and commercial film libraries. Utilities, other energy industries and energy associations also produce or collect energy films and often loan them free of charge (see Resources).

If you do decide to produce a film, you must again be very sure of your purpose—the audience you want to reach, the message you want to convey, and the results you hope to gain—and be sure that a film is indeed the medium for your message. Armed with the answers to these questions, your producer and scriptwriter can get to work. If you hire a professional producer—and we strongly recommend this course—develop a contract that clearly states what is to be accomplished and in what stages you will review and approve progress on the film. We also suggest that payment to the producer be made in two or three installments, with the last paid after you have received a satisfactory finished product.

For its film, the LWV of New York assembled two advisory committees—one of representatives of the energy organizations that had contributed money to the project and a second of community representatives and other organizations interested in the film—to help provide a balanced view.

While a film can be used in many other ways, you'd have to show it many times to match even a moderate television audience. If you do hope to have your film broadcast, start talking early with a likely TV station—perhaps one that has cooperated on similar kinds of programs before. Perhaps you can persuade the station to coproduce the film. Otherwise, it may be difficult for you to get the film on the air. Again, however, it is important to delineate respective responsibilities.

The Nebraska Educational Television network produced for the LWV of Nebraska a videotape of interviews with residents of two Nebraska communities that had experienced severe power outages. Broadcast on prime time television, this tape was followed by a live panel discussion of Nebraska energy problems. Panelists then responded to questions phoned in by viewers to a toll-free number flashed on the screen. Panel discussions with question and answer sessions were also built into followup showings of the film at later community programs.

With or without a TV broadcast, a film can form the basis of a lively meeting with a panel or group discussion. You will need a capable moderator and a panel of local people knowledgeable about energy issues. One way to increase community attention is to feature a discussion of some particularly controversial or well-known local energy issue. Finally, consider placing the film in school or public library circulation to extend its usefulness once your project ends.

TV and radio PSAs

At one time, public service announcements (PSAs) were used mainly to inform people of an upcoming event or of a service that was offered to a community. Leagues are now finding that stations may be willing to broadcast PSAs that alert the public to the importance of an issue, such as the seriousness of our energy situation or the need for conservation. Your PSA, however, must be objective and balanced or other groups may demand equal time from the station.

Don't imagine, though, that just because you produce a PSA a station will automatically use it. Although broadcasters are required to devote a certain amount of air time to public service programming, they make the decision on what to broadcast and when and general messages suffer in the competition for scarce air time.

Stations have indicated that they're more likely to use a PSA if it is professionally produced and if it has a local impact. Contact the public service director of the TV or radio station you hope will air your planned PSA to discuss your project and its importance to the community, and to learn about station requirements and policies for PSAs. If the station is interested in your material, they may even produce one for you.

You certainly can't say a lot in a PSA but, if you're creative, you can make a lasting impression on your listeners/viewers. One way to use your precious PSA seconds is to build on an image or idea that your audience will recognize. Be snappy and informative. If you produce several PSAs or a multiple media campaign, a catchy unifying theme can also increase audience attention and recall.

Since Iowa has a large farming community, the state League there decided it would be an ideal target audience for radio PSAs stressing energy conservation on the farm. The League contracted with an advertising firm to produce six 30-second messages unified by a common theme—"When you save energy, you make sense." The tapes and a League-addressed station response card were sent to 190 radio stations in Iowa and neighboring states. About one-third of the stations returned the cards, indicating the tapes were played from two to thirty times a month.

In its series of radio PSAs, the Louisiana League used a common theme, "The League of Women Voters and the U.S. Department of Energy want you to save money, save energy, save America," and sometimes recurring characters (a humorous "grandpaw" and his grandson, Louie).

The LWV of Pennsylvania contracted with an audio-visual firm to produce a 30-second PSA to convince citizens there is a serious energy problem. They designed a clever spot in which a bearded man states that as far as he's concerned there is no energy problem, as long as the sun shines, the wind blows and water runs downhill. The camera pulls back to reveal that he is an Amish farmer (familiar to Pennsylvanians) sitting in a buggy on his farm with a windmill and clothes drying in the sun in the background. The voiceover says, "If you agree with this man, you'd better start living the way he does."

More on PSAs

- Include PSAs in your publicity for special events but also consider using them to convey a special energy message.
- Whether you opt for a radio or TV PSA, find out which stations cater to your target audience.
- Be brief. A PSA limits your message more than any other AV production.
- PSAs of varied length (10, 20, 30, 60 seconds) both on tape and as scripts to be read by an announcer, will meet a variety of station requirements and result in maximum airplay.
- Use radio and TV PSAs as a "foot in the door" for establishing rapport with the station manager and with decision makers in the other broadcast areas such as news and public affairs programming. This will stand you in good stead if you want to seek their cooperation on later projects. Because of the good groundwork established during its PSA project, members of the Louisiana League were interviewed about energy on talk shows on two radio stations.

AV in sum

Audiovisual presentations and the media can be exploited in other ways besides those mentioned here. Viewers and listeners *want* to hear about energy—it is among the top ten topics of audience interest listed in surveys made by news organizations. *Interviews and appearances* are good ways to educate and to advertise your project. A videotape of events, such as a Texas TV station made of a Texas LWV energy conference, can be used *for news features or filler, and can be edited for other use*. And don't neglect the growing area of cable TV. Many cable TV stations try to fill more hours with original programming and, therefore, may be more accessible for your films and PSAs. Even *slide shows* can be shown on TV, especially if imaginatively done with lively images.

Resources

Selected national programs

Americans for Energy Independence (AFEI), 1629 K St., NW Suite 1201, Washington, DC 20006 (202) 466-2105

AFEI was founded by a group of scientific, academic, professional, conservation, labor and business leaders to inform the public—and through public opinion, to stimulate policies and actions that will move the United States rapidly toward reasonable energy self-sufficiency by the early 1980s. AFEI produces a monthly newsletter and publications on energy issues, and staff are available as speakers. AFEI also conducts several energy education projects.

The American Association of Community and Junior Colleges (AACJC), 1 Dupont Circle, NW Suite 410, Washington, DC 20036 (202) 293-7050

With funds from the National Endowment for the Humanities, the Charles Stewart Mott Foundation and DOE, AACJC is conducting a nationwide community dialogue program, "Energy and the Way We Live: A National Issues Forum." AACJC's ten regional coordinators are working with libraries, museums, local media and other organizations to coordinate activities and to develop and distribute resources to facilitate community discussion of energy issues. Write to AACJC to learn how to get involved in your area.

Center for Renewable Resources (CRR), 1001 Connecticut Avenue, N.W. Room 530 Washington, D.C. 20036 (202) 466-6880

An outgrowth of the organizers of Sun Day, CRR works with local citizen groups throughout the nation to research and encourage the use of solar energy. CRR produces publications and is developing a network of people and groups involved in solar projects. It is also carrying out grant-funded projects. The Model Projects grant is designed to identify and publicize the most innovative solar/conservation ideas; a summary catalog should be available in early 1980. In CRR's Solar Cities project, researchers are studying possibilities for increased use of solar energy in urban areas.

League of Women Voters of the United States (LWVUS) League of Women Voters Education Fund (LWVEF), 1730 M St., NW, Washington, DC 20036 (202) 296-1770 (US), (202) 659-2685 (EF)

For 60 years the LWVUS, a nonpartisan organization, has been devoted to promoting informed citizen involvement in local, state and national affairs. In addition to concerted member action on issues of national concern, its public information programs—aimed at exploring issues, encouraging public dialogue and identifying channels for effective citizen participation in government—reach into over 1300 communities in all 50 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands. Write for a free catalog of publications or for information on how to join your local League.

The LWVEF is a complementary organization dedicated to research and public education activities. Its publications and projects deal with a wide variety of problems and governmental processes.

Organizing and fundraising

ENERGY: A GUIDE TO ORGANIZATIONS AND INFORMATION RESOURCES IN THE UNITED STATES. Second Edition. Public Affairs Clearinghouse, Who's Doing What Series: 1. P.O. Box 10, Claremont, CA 91711. 1978. 221 pp. Paper, \$20.00.

THE GRASS ROOTS FUNDRAISING BOOK: HOW TO RAISE MONEY IN YOUR COMMUNITY. Joan Flanagan. Swallow Press, 811 Junior Terrace, Chicago, IL 60613. 1977. 219 pp. \$5.25. Nuts and bolts advice on planning and executing community fundraising activities.

LEADERSHIP IS EVERYBODY'S BUSINESS: A PRACTICAL GUIDE FOR VOLUNTEER MEMBERSHIP GROUPS. John Lawson, et. al. Impact Publishers, Inc., PO Box 1094, San Luis Obispo, CA, 93406. Handbook on setting up and running an effective volunteer organization.

HOW TO APPLY TO FOUNDATIONS. Ken Bossong. Citizen's Energy Project, 1110 6th St., NW, #300, Washington, DC 20001. 1978. 5 pp. 75¢. A manual on preparing grant proposals to foundations.

REACHING UP, REACHING OUT: A GUIDE TO ORGANIZING LOCAL SOLAR EVENTS. Solar Energy Research Institute (SERI), 1536 Cole Blvd., Golden, CO 80401. 1979. \$6.00. Order from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Order #061-000-00345-2. Contains an "organizing primer," an events sampler, tips on structuring group efforts and an extensive resources section.

SOURCES OF FUNDS FOR SOLAR ACTIVISTS. Anita Gunn. Center for Renewable Resources (CRR), 1001 Connecticut Ave., NW, Room 530, Washington, DC 20036. 1978. 32 pp. \$4.50 (plus 15% postage). A directory of funding sources for various solar-related activities.

How-to's for community projects

COUNTY ENERGY PLAN GUIDEBOOK: CREATING A RENEWABLE ENERGY PLAN. Alan Okagaki, with Jim Benson. Institute for Ecological Policies, 9208 Christopher St., Fairfax, VA 22031. 1979. \$7.50 individual and public interest groups, \$15 others. This book shows citizens how to prepare a renewable energy plan for their county by providing mechanisms for them to use in estimating energy usage and potential for conservation and conversion to renewable energy sources.

ENERGY CONSERVATION FAIR. League of Women Voters of Manitowac, WI. Order from Elizabeth Foster, Pub. Chair, LWV of Manitowac, 848 N. 6th St., Manitowac WI 54220. 1978. 11 pp. \$2.58. Drawn from a well-received League project, this guide to fairs contains sample letter and budget.

HOW TO PLAN AN ENVIRONMENTAL CONFERENCE. League of Women Voters Education Fund. Order from LWVUS. Pub. #695. 1971. 48 pp. Free. A compilation of League experience in putting on environmental conferences; very applicable to other topics.

MEDIA ACTION HANDBOOK. The National Committee Against Discrimination in Housing (NCDH), 1425 H St., NW, Washington, DC 20005. 1975. \$3.00. How to get access to different media, both for news and PSAs.

MEDIA KIT. League of Women Voters of the United States. Pub. #163. \$1.00. Contains five League publications: PROJECTING YOUR IMAGE; HOW TO PRODUCE A SLIDE SHOW; SPEAKING OUT: SETTING UP A SPEAKERS BUREAU; REACHING THE PUBLIC; GETTING INTO PRINT; and BREAKING INTO BROADCASTING.

SO YOU WANT TO HAVE A FAIR. . . . Gwendolyn B. Moore and Francis P. Koster. CRR, see above. 14 pp. Free. Covers all aspects of organizing and putting on a fair.

Other sources—a mixed bag

THE U.S. DEPARTMENT OF ENERGY (DOE), Office of Public Affairs, Wash., DC 20585. In addition to newsletters on DOE activities and developments in energy, this office can provide speakers, publications and references to other sources of information and materials. DOE's Office of Consumer Affairs can help with access to more specialized DOE offices. OCA also publishes a newsletter on various topics of special consumer concern. Free loan of films (Energy Film Library) and technical information and publications available from DOE Technical Information Center, PO Box 62, Oak Ridge, TN 37830.

The following organizations provide a variety of materials and information (films, free or inexpensive factsheets, newsletters and other publications) that can be useful in community projects. Write for catalogs and information.

ALLIANCE TO SAVE ENERGY, 1925 K St., NW, Washington, DC 20006.

ALTERNATIVE SOURCES OF ENERGY, INC., Rt. 2, Milaca, MN 56353.

AMERICAN GAS ASSOCIATION, Consumer Affairs, 1515 Wilson Blvd. Arlington, VA 22209.

AMERICAN PETROLEUM INSTITUTE, Publications Dept., 2101 L St., NW, Washington, DC 20037.

ATOMIC INDUSTRIAL FORUM, INC., Public Affairs and Information Program, 71017 Wisconsin Ave., NW, Washington, DC 20014.

ENVIRONMENTAL ACTION FOUNDATION, Utility Project, 1346 Connecticut Ave., NW, Washington, DC 20036.

INSTITUTE FOR LOCAL SELF-RELIANCE, 1717 18th St., NW, Washington, DC 20009.

NATIONAL CENTER FOR APPROPRIATE TECHNOLOGY, P.O. Box 3838, Butte, MT 59701.

NATIONAL COAL ASSOCIATION, 1130 17th St., NW, Wash., DC 20036.

NATIONAL CONFERENCE OF STATE LEGISLATURES, Energy Policy Project, 1405 Curtis St., 23rd Floor, Denver, CO 80202.

NATIONAL SCIENCE TEACHERS' ASSOCIATION, 1742 Connecticut Ave., NW, Washington, DC 20009.

OAK RIDGE ASSOCIATED UNIVERSITIES, Energy Education Office, PO Box 117, Oak Ridge, TN 37830.

SOLAR ENERGY INDUSTRIES ASSOCIATION, 1001 Connecticut Ave., NW, Suite 800, Washington, DC 20036.

SOLAR ENERGY RESEARCH INSTITUTE, 1536 Cole Blvd., Golden, CO 80401.

Order from League of Women Voters of the United States, 1730 M Street, NW, Washington, DC 20036. Pub No. 436, 50¢.

AN ENERGY EMPORIUM: What Leagues Are Doing

The past year has been one of tremendous activity in the energy arena--and Leagues have been heavily involved in the action. Following our successful campaign to enact the National Energy Act (NEA), the League's national lobbying program has:

- pushed for a combined system of crude oil decontrol and a strong windfall profits tax;
- upheld the need for environmental safeguards during synthetic fuel development;
- worked to increase the role of conservation and renewable energy in our national energy policy;
- reiterated the necessity to help low-income citizens meet the energy costs that are consuming ever growing proportions of their budgets.

At the state and local level, equally important and impressive activities are taking place to implement the League's national energy goals. Leagues are:

- monitoring how well state governments carry out NEA mandates;
- pushing for enactment of local codes and ordinances to increase reliance on conservation and renewable energy sources;
- educating their communities about a range of energy issues.

The responses to the 1978 and 1979 Annual Report questions on Energy revealed a wealth of innovative and exciting projects, both legislative and educational. The reports offer strong testimony that Leagues are making significant contributions to our country's efforts to resolve our energy dilemmas.

Your replies also registered a strong demand for a "swapshop" describing what other Leagues are doing on energy issues. Here it is--a sampler of ideas from other Leagues. It is designed to flesh out the Guide to State and Local League Action on National Energy Position (mailed DPM in February, 1979--hereafter called the Guide), which sets out the essential "ground rules" for applying national positions at the state and local level. Although the projects are divided by source--COAL/NATURAL GAS/OIL, NUCLEAR, UTILITIES, SOLAR/RENEWABLE RESOURCES and CONSERVATION--most of the ideas and techniques are applicable to a variety of issues. Team this action-oriented pub with the brand-new COMMUNITY GUIDE, Citizens: The Untapped Energy Source (Pub. #436, 50¢), which is packed with suggestions for education activities, to stimulate your thinking on interesting and appropriate efforts for your League to undertake.

Keep in mind, as you strategize, that many energy issues impact on other League program areas, such as Environmental Quality, Land Use, Human Resources or Urban Crisis. Interrelated activities, such as recycling projects, are good ways to advance both energy and other national positions.

Coal/natural gas/oil

"The President's decision to begin phased decontrol of oil prices and to seek enactment of a windfall profits tax on oil provides the League with great action opportunities...not only with our energy position but with our human resources and environmental quality concerns."
May 21, 1979 ACTION ALERT

The League's national energy position calls for an energy policy that does not increase our reliance on oil and natural gas and moves towards increasing the environmentally sound use of coal. (See Impact on Issues, Pub. #386, and the Guide.) At the national level, League action on these issues centered on decontrol of oil with an accompanying windfall profits tax and opposing proposals for expanding coal usage by abandoning the environmental safeguards for which the League has worked over many years.

As is true of many other energy issues, local or state action on coal, gas or oil facilities and issues often involves more than one League and requires coordination. The CALIFORNIA League has done a good job of consulting with the LWVUS and of coordinating local League activities. The state League held a series of regional workshops in the summer and fall to bring Leagues together to clarify who is doing what on matters affecting more than one League jurisdiction. One topic they thrashed out was the siting of a liquefied natural gas (LNG) terminal on the California coast. Since then, local Leagues, including the LWVs of SAN LUIS OBISPO and VENTURA COUNTY, have made statements before several governmental bodies, expressing their concerns about the overall concept or with particular sites (e.g. those close to nuclear plants or earthquake faults).

It is especially important that Leagues coordinate their action on proposed oil and gas leases on the Outer Continental Shelf (OCS). The CALIFORNIA state League and the local Leagues in the Central and South Central Coast Region have been monitoring proposed lease sales, opposing or supporting sites on a case-by-case basis. Thus, the LWV of EUREKA submitted a statement to the Bureau of Land Management opposing a lease site in a frontier area that is expected to provide a very small supply of gas but that may have a very adverse effect on the fishing industry, wildlife and the ecology. Leagues are also involved in the environmental impact review process, making known their concerns, particularly in regard to air quality standards, public participation and jurisdictional control. On the East Coast, the Leagues of MAINE, MASSACHUSETTS and RHODE ISLAND have opposed OCS development near Georges Bank, one of the world's most productive fishing grounds, because of potential adverse effects.

- State and local Leagues may oppose licensing for construction of nuclear power plants on the basis of the national position;
- State and local Leagues may oppose licensing for operation of those plants now under construction on a case-by-case basis, as outlined in the Guide for State and Local League Action on the National Energy Position, after notifying the national board;
- State and local Leagues may support licensing for construction and operation of nuclear power plants only in special cases and with prior permission from the national board. Because of the underlying presumption that our goal is to minimize reliance on nuclear fission, action in support would have to be based on a very strong case.

These guidelines and the LWVUS Memorandum, "Guidance on Nuclear Issues Under Positions of the League of Women Voters of the United States" (DPM, April 1, 1980), which supplement those in the Guide, were developed to enable state and local League to act on nuclear issues in their area. And, indeed, many have!

For over five years, the LWV of SUFFOLK COUNTY, NY has participated as an intervenor in the siting hearings for the Jamesport nuclear power plant. The League entered the case with a neutral perspective to ensure adequate public participation; however, after investigating the situation, the League prepared documents that challenged the power company's claims regarding plant safety, environmental safeguards, need for additional power and emergency evacuation plans. The arguments put forth by the League and others opposed to the proposal have been persuasive, and the siting board turned down the two 1150 megawatt nuclear plants and recommended instead the construction of one 800 megawatt coal-fired plant. The League reports that their efforts, while satisfying, have required a great deal of time, money and activity. The ROCKFORD, IL League is currently intervening in the operating license for the Byron Nuclear Power plant.

The Three Mile Island (TMI) accident set off a flurry of activity among the PENNSYLVANIA and several MARYLAND Leagues that presents a model for concerted action by affected Leagues on a nuclear issue. The Pennsylvania League moved quickly on the matter, commending the governor, President Carter and the Congress on their response to the situation (particularly for their determination to hold a thorough public investigation of the issue) and putting together a memo on Action Options in Response to Three Mile Island Nuclear Power Plant Accident. This memo listed LWVUS Natural Resources, Environmental Quality, Land Use and Energy positions that are relevant to nuclear power (also see the Guide) and outlined a variety of actions that Leagues or individual members could take. This April 26, 1979 memo went to each state League President; contact your state board if you are interested in seeing it.

The local Leagues near the crippled plant have also worked aggressively on the issue. After deliberations with the LWVUS, it was decided that action was appropriate not at the national level but, rather, by the local Leagues most directly impacted by the accident, with the state League acting in a coordinating and advisory role. The CARLISLE AREA, HARRISBURG, HERSHEY AREA, LANCASTER COUNTY, LEBANON and YORK Leagues have been monitoring developments on the decontamination of the plant and have opposed the reopening of TMI Unit #1 (the other half of the damaged plant) at the present time because of health and safety questions which have not yet been answered. They have forcefully upheld

the need for public information and input as well as the necessity for safeguarding the environment in dealing with this problem. Specifically, they oppose a proposal to release the treated radioactive water from the plant into the Susquehanna River, particularly because this plan does not require the preparation of an Environmental Impact Statement. Since this proposed action also will affect other Leagues in the Susquehanna Valley, such as the League of HARTFORD, MD, the local Leagues and the Pennsylvania League are coordinating their efforts with the LWV of MARYLAND and, of course, keeping in close touch with the LWVUS.

It is important to note that while the Leagues involved in this issue differed greatly in their opinions of nuclear power and of TMI, they managed to come together and act on the concerns they shared, rather than focusing on their disagreements. One way they did this was by increasing efforts on alternative energies everyone preferred--for example, the HARRISBURG LWV held a very successful solar home tour, while the HERSHEY League sponsored solar water heater workshops which were extremely well-received.

Nuclear waste management continues to consume a lot of League energy. Leagues have testified on various aspects of this problem, utilizing Environmental Quality and Land Use positions (see Guide). Among the examples:

- The ODESSA, TX League worked for water quality safeguards for the proposed Waste Isolation Pilot Project (WIPP) in Eddy County, NM, which would have used the salt beds of southeastern New Mexico for research and disposal of high-level radioactive wastes. On the basis of a state groundwater study, as well as national Environmental Quality and Land Use positions, protecting aquifers and drinking water supplies, the ODESSA LWV criticized DOE's Draft Environmental Impact Statement for failing to address this issue properly. Again, since this action has inter-League implications, it was cleared with both the NEW MEXICO and TEXAS Leagues, in addition to the LWVUS.
- The LAKE ERIE BASIN League committee, also relying primarily on Land Use and Environmental Quality positions, testified at DOE's public scoping meeting on February 2, 1980 held to get citizen views on the immobilization of high-level radioactive wastes at West Valley, New York.
- The WINSTON-SALEM/FORSYTH COUNTY, NC League testified at a local meeting on an ordinance regarding the transportation of radioactive wastes through its area.
- The SOUTH CAROLINA Energy chair spoke at a DOE hearing in Atlanta, GA on nuclear waste disposal. Since South Carolina stores 85 percent of all commercial low-level radioactive waste and may become the sole repository of high-level commercial waste, the South Carolina statement stressed the need for a final and safe solution to the problem of nuclear wastes and argued for equitable distribution of the responsibility for waste disposal among all states and regions.
- Requests from the federal government for public input on the issue of nuclear waste management have generated comments from a number of Leagues. The JOHNSON COUNTY, KS and OAK RIDGE, TN Leagues sent letters on waste management to the Inter-agency Review Group for its Report to the President on Nuclear Waste Management, and the TEXAS League presented DOE with impressive comments on the Draft Environmental Impact Statement on the Management of Commercially Generated Radioactive Waste. *All such action should be cleared with the LWVUS as set forth on page four of the Guide for State and Local League Action on National Energy Position.*

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Recognizing that there is a tremendous need for more public education on nuclear energy, delegates to Council '79 recommended that the LWVEF undertake a national education program on nuclear energy. As a first step in that direction, the LWVEF has produced A Nuclear Waste Primer (Pub. #391, \$1.25).

At the same time, many Leagues are involved in attempts to provide the public with more usable information on this complex subject. Three produced impressive materials on nuclear issues under the LWVEF Energy Education grant. The TEXAS League is filming a documentary on nuclear wastes, and the NEW MEXICO League held a conference on the same topic (See COMMUNITY GUIDE, pub. #436). The COLORADO and WYOMING Leagues got additional funds from EXXON, the Wyoming Energy Conservation Office and the Region VIII Office of DOE for a joint conference on an often overlooked aspect of nuclear energy--uranium mining and milling. As a follow-up, the Wyoming League has prepared a resource kit on uranium development that includes factsheets produced for the conference, a slide show and other materials for distribution to local Leagues, newspapers, libraries and educational institutions.

Many Leagues are performing a much-needed service in their communities by holding forums, debates, public meetings, etc., on nuclear issues. The MELROSE, MA League hosted a debate on nuclear energy; the LOS ALAMOS, NM LWV held a public meeting on "Radioactive Wastes, Local, State and National". The Energy chair from TIFFIN, OH participated in a panel discussion on nuclear and alternative energies, while the LWV of WILLIAMSBURG AREA, VA reported on the presentation of a Nuclear Regulatory Agency (NRC) representative before a neighboring county's board of supervisors.

The TULSA, OK League, faced with a controversial proposal to build a nuclear power plant in the area, served as a community mediator to maintain an open dialogue on the issue. To this end, the League sponsored a balanced public program on nuclear energy to explore the local situation and to encourage discussion by the audience.

Many have found that a tour of a nuclear facility is another enlightening way to investigate nuclear energy (including the LWVUS national board, which toured the Calvert Cliffs, MD nuclear power plant in September 1979). The EXETER AREA, NH League was one of the first groups to tour the well-known Seabrook Nuclear Plant site. The League of GEAUGA COUNTY, OH visited the Perry Nuclear Power Plant as part of a three-part program, "Facts on Fission;" the tour was preceded by a seminar on radiation and nuclear energy and a multi-perspective panel discussion on nuclear power. The KEWANEE, IL LWV inspected a Nuclear Engineering hazardous waste site as part of the ILLINOIS League hazardous waste survey. Another possibility is to tour research facilities. The CHESTER-MENDHAM, NJ League visited the fusion laboratories at Princeton University, while

many MASSACHUSETTS Leagues have toured MIT's Energy Lab.

Finally, several local and state Leagues are taking a further look at nuclear energy and its implications for their area. Included among these are the SOUTH CAROLINA League, which is concentrating on hazardous wastes, the LWV of MANITOWOC, WI, which recently completed a report, The Implications of Nuclear Power in Manitowoc County, and the NEW HAMPSHIRE League, which is looking at the costs of decommissioning nuclear power plants.

Utilities

"Current challenges to high electric utility bills have ranged from open rebellion, intervention in rate cases, and introduction of state initiatives and legislation to demands that regulatory bodies do something." Energy 22, Electric Utility Rate Structures: A Case for Reform?

Reform of utility rate structures and practices is an area particularly ripe for state and local League involvement, especially since the passage of the Public Utilities Regulatory Policy Act of 1978 (PURPA). This act, one of five bills that comprise the National Energy Act, mandates that utilities and state regulatory agencies examine rate structures and policies for practices that do not encourage conservation, efficiency and equity. As Leagues are aware, this is a complex issue and requires considerable research and study before launching an active campaign.

The INDIANA League did thorough work in this field and published its findings in a booklet, Electric Utilities in Indiana. This publication, intended to provide basic information to League activists and interested citizens, reports on who supplies electricity in Indiana, who regulates Indiana electric utilities, how rates are determined, what rate structures are possible, consumer rights, and has a bibliography for further reading (available from the LWV of Indiana, 619 Illinois Building, 17 West Market St., Indianapolis, IN 46204 for 85¢). This booklet supplements Indiana's book on energy resources, Energy in Indiana, (\$1.00).

When utilities span a number of cities or states, collective projects are not only more effective but also necessary to avoid possible conflict among Leagues (again, refer to the Guide). For example, frustration over the inability of any single League to speak on regional utility matters sparked the formation of the TENNESSEE VALLEY INTER-LEAGUE COUNCIL (TVILC), which includes the 36 state and local Leagues in ALABAMA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, TENNESSEE and VIRGINIA that receive power from the Tennessee Valley Authority (TVA). The TVILC will enable the Leagues to develop a comprehensive understanding of TVA and to present a united action front on TVA-related issues. The TVILC is now in the fact-finding portion of the project. Assigning responsibility for different sections to individual Leagues, the study will examine the utility's current energy mix, organization/financial structure and decision-making process.

The results of the study will be published in a handbook, A Citizen's Guide to the TVA. However, the TVILC is not awaiting the completion of their study before taking action. For example, the TVILC commended the TVA board for its efforts in conservation and alternative energy strategies and recommended delaying the construction of additional nuclear plants in view of decreasing electrical demand. Several

Considering a "Know Your Utility" study?

Write for a copy of a proposal developed by the LWVEF energy department, which lays out a rationale and a plan for getting information on your local power company, opening up a dialogue between consumers and utility officials, and disseminating the results through workshops and publications.

weeks later, TVA did, indeed, decide to postpone construction of the proposed facilities.

The Leagues of WASHINGTON, OREGON, IDAHO and MONTANA have joined in an informal regional coalition to work on a bill relating to the Bonneville Power Authority (BPA), which markets the power generated by the federal dams in the Northwest. Entitled the Northwest Regional Power Bill, this proposed federal legislation charges a committee run by the BPA Administrator with developing a regional power plan and conservation program. The Leagues, working with other interested parties, have waged an excellent campaign to amend the bill to increase opportunities for public participation and to create better incentives for conservation. The Leagues, in a coordinated effort cleared by the LWVUS, testified before a number of Congressional hearings, conducted an extensive letter-writing campaign and have given the issue a lot of publicity.

One unusual and very useful effort undertaken by the League of MARBLEHEAD, MA is a telephone network to alert Marblehead citizens to periods of particularly high peak-level electrical demand. On days of extremely heavy consumption, the utility company contacts the League to set off a telephone tree, alerting neighbors and friends and asking them to cut out all non-essential use of electricity for the peak-load hours. The project's success is attested to by the fact that it has forestalled building additional facilities. Leagues with telephone networks already in place might want to take on a similar project.

Providing pro and con information on a controversial topic is always effective. For example, the county-wide ILO of WESTCHESTER, NY was active in the November 1979 referendum to allow the county to study the possible takeover of the electric utility which services their area, now owned by Consolidated Edison. The local Leagues within the county held a series of meetings on the matter: for WHITE PLAINS, a luncheon that featured a panel of League experts; for SCARSDALE, a public forum; in BRIARCLIFF-OSSINING, a debate between a Con Ed official and the county executive. They also distributed a fact sheet prepared by the county League.

A number of League representatives find that serving on utilities' consumer boards is another mode of impacting utility practices. For example, a member of the MARIETTA-COBB, GA League sits on the Georgia Power Company Consumer Council, which was instrumental in getting the company to hire staff to assist low-income customers in paying their bills.

Solar/renewable resources

"For members of the League of Women Voters, the vision of a solar America is no longer apocryphal...no longer the exclusive property of the dreamers, the futurists or the theoreticians. The vision of a solar America is becoming a reality because it has become a necessity; and the League is helping to bring the reality into being." LWVUS President Ruth J. Hinerfeld at Conference for a Solar America, August 1979.

During the national consensus process (1976-1978), League members made it clear that they wanted renewable resources to be a much larger part of our energy mix. Leaguers have been acting on that conviction in a number of exciting projects.

Sun Day spurred the most extensive amount of action on solar energy. Leagues across the country organized events commending the sun's potential as an energy

source at that time. With a \$10,000 grant from the state Department of Energy, the LWV of ILLINOIS coordinated Sun Day activities throughout the state. The LAFAYETTE, LA League's efforts led to a proclamation by the mayor and an exhibit on solar power. The enthusiasm this generated moved the community to form a Solar Energy Group. DAVIS, CA League members set up a booth at the local Sun Day fair, from which they handed out information on solar legislation, such as the Solar Bank, and urged people to express their support for such bills by writing their representatives on the spot. The League even supplied stamped postcards and pens, and mailed the completed cards. The BERGEN COUNTY, NJ League judged a high school debate on U.S. energy policies. The League of MOUNT DESERT ISLAND, ME took their Sun Day observances to a spectacular setting--the top of Cadillac Mountain, in Acadia National Park. Even stormy weather couldn't dampen the spirits of solar enthusiasts in GREATER BIRMINGHAM, AL; they just moved their picnic and display inside and listened to architects and law students speak on solar issues.

Reminding people that solar energy is a practical option now is especially useful in a world of skeptics. Witness the endeavors of the MUSCATINE, IA League, which asked area television stations to include the Solar Index in their regular weather forecasts. (The Solar Index, developed by DOE to raise public consciousness on solar energy's potential, specifies the percentage of heat that could be supplied on a given day by a domestic solar water heating system.) The IOWA Energy chair picked up on this idea and shared it in a memo to other local Leagues in the state.

Another way of demonstrating that solar energy is a source of the present, not just the future, is to survey existing uses of solar and other renewable resources in your area. Some Leagues, including the LWV of MISSOURI, did this under the LWVEF Energy Education Project. The Center for Renewable Resources (CRR) is doing this on a nation-wide scale (for more information see RESOURCES section) and several Leagues have been working with them. A prime example is the LWV of MAINE, which received a grant from CRR for a pamphlet describing the most innovative uses of solar and conservation in its state. Working through the local Leagues, it identified a number of projects in categories such as Business/Commercial, Community Projects, Legislation, etc. Several of the write-ups have been selected to be included in CRR's National Catalog.

Another productive way to let people know about solar in the here-and-now is to conduct a tour of homes and businesses that rely on renewable energy sources. The SAN DIEGUITO, CA League organized a particularly successful "Solar Go-See Tour" during Solar Week. The attendance of 569 attested to the fine organization and publicity of this 12-home tour; it got excellent news coverage, which supplemented the brochures the League distributed.

Some Leagues have found still other ways to encourage greater use of solar energy in buildings. One example is the SALEM, OR league, which testified in favor of including solar water and space heating in the new state Capital building to demonstrate public commitment to alternative energy sources. Service on commissions also presents great opportunities for League members to advance the solar cause. For example the WEBER, UT energy chair was appointed to the Utah Solar Advisory Committee, which developed proposals for a so-

lar energy systems tax bill, solar access legislation and a solar easement amendment for consideration by the Utah legislature.

Some of the most effective solar projects are those that include the actual construction of a solar device, such as a solar grain dryer or greenhouse. A number of ideas for such "hands-on" projects are included in Reaching Up, Reaching Out: A Guide to Organizing Local Solar Events (see RESOURCES section). The TUCSON, AZ League found that serving warm cookies baked in a make-it-yourself solar oven during their conservation workshops was a real selling point for solar energy. The ALBUQUERQUE/BERNALILLO COUNTY, NM League organized the construction of an attached solar greenhouse as part of its Energy Education project.

In the process, the Albuquerque League discovered that the city's building code did not cover attached greenhouses; the greenhouse had to be constructed to specifications for adding a room, resulting in considerable overbuilding and expense. Therefore, the League is now involved in a coalition effort to amend the building code. And that's only one of many Leagues that have zeroed in on local ordinances and zoning codes that create incentives for and/or remove barriers to the increased use of solar and other renewable energy sources. Some examples of League involvement in this issue:

- In 1976, when the Georgia state legislature passed a resolution giving local governments the discretion to exempt solar equipment from ad valorem taxation, the LWV of GEORGIA coordinated the lobbying by local League Energy chairs for adoption of this option in their counties. The state Energy Committee also contacted the county commissioners in non-League counties to urge enactment of the exemption. The results: 15 counties did adopt the solar tax advantage, 8 as a direct result of League activity.

- The NEBRASKA LWV testified on two important bills. One would give tax credits to individuals or businesses that install renewable energy source systems. The other would enable owners of solar systems to buy easements from neighboring properties to prevent adjacent structures from interfering with the solar equipment by blocking the sun. Many other Leagues, including the Leagues of COLORADO, CONNECTICUT, MISSISSIPPI, NEW JERSEY, NEW MEXICO, TEXAS AND UTAH have been working on similar legislation.

Naturally, the same options apply for advancing other renewable resources. Many Leagues are promoting indigenous energy sources, including wind power, wood, gasohol, bio-conversion and geothermal energy. The KAUAI, HI League is supporting plans to build a power plant that would be fueled with biomass and incorporating cogeneration and possibly the burning of municipal waste. The ANDOVER, MA League, with a grant from the Massachusetts Department of Energy, put on a program on the safe installation and use of wood-burning stoves. The LWV of the MITFORD AREA, NH, concerned that local building codes contained no provisions regarding wood stoves--a growing source of home heat in the region--decided this should be its local priority. The League developed a set of building codes and permits that will be considered in a town meeting early in 1980.

Conservation

"Conservation is the Nation's best source of energy. It is the most environmentally benign and, in most applications, the cheapest source of energy. We believe

there should be a major national commitment to increasing the efficiency with which we use energy in our homes, schools, hospitals, automobiles, industries and businesses." LWVUS Energy Chair Dotty Powers' testimony before the House Ways and Means Committee, July 1979.

Since 1975, the League has made conservation the crux of its energy agenda. The League's foresight in stating that national energy policy should assign top priority to conservation is demonstrated by the findings of four recent major energy studies which came to the same conclusion (see RESOURCES section).

Building on the momentum developed during the national energy study, the LWV of MARYLAND used a \$5,650 grant from the Maryland Energy Policy Office to review county government conservation efforts. The state League trained and coordinated the 21 local Leagues that surveyed and evaluated their own county's attempts to conserve energy in its buildings, vehicles and practices. The local Leagues then presented their findings to their county's governing bodies in a public meeting. This survey complemented the state's LWVEF Energy Education project, which canvassed selected companies for similar information and published the results in Energy Conservation, It's Good Business. The League now has a second grant of \$16,000 to interview specified county officials to gather further conservation data.

Since the American car alone consumes a ninth of all the oil used in the world every day, increasing fuel efficiency in automobiles is an ideal focus for conservation. To this end, Leagues in ARIZONA, CALIFORNIA, CONNECTICUT, MARYLAND, NEVADA, NEW YORK, OREGON, PENNSYLVANIA and RHODE ISLAND have been working with the Atlantic Richfield Company (ARCO) on a program entitled "Car Care: Not For Men Only." Local Leagues set up and publicize clinics on proper car maintenance taught by ARCO mechanics. This program not only provides a community service but also brings income to the Leagues in the form of an administrative fee.

One of the easiest, yet most useful, conservation activities a League can undertake is to publicize tips on cutting back energy usage. The League of MIDDLETOWN/WALLKILL, NY launched a particularly effective conservation awareness campaign using a three-page League handout, Hints for Saving Energy. This was distributed by a number of organizations, including Welcome Wagon. The League also approached the city government to have the tips sent out with tax bills and asked banks to include them in statement mailings. (Using already established networks for distribution greatly increased the project's outreach.) The METROPOLITAN DADE COUNTY, FL League runs a monthly column, "The Tip that Worked", in its local VOTER. In it, Ima Wattwatcher presents a vignette in which she and her family (husband, Frugal, and children, Joule and Therm) learn something new about energy use and misuse.

Conservation techniques can be conveyed in many different ways--the more imaginative the presentation, the more likely people are to remember the message. The new COMMUNITY GUIDE (Pub.#436) highlights the LWV of MONTANA's popular energy conservation puppet show; the NILES-BUCHANON, MI League is developing a presentation for schools featuring a conservation kit. The LWV of SOUTH PALM BEACH COUNTY, FL kept its message short and sweet--it sold T-shirts saying "Do it With Less Energy."

Conservation messages get across best when they are tailored to the audience. Under the LWVEF Energy Education grant the League of the DISTRICT OF COLUMBIA concentrated its efforts on a segment of the population

that really needs advice on how to conserve--low-income households and senior citizens. The ALASKA League taped its conservation tips in both English and Ypik, a native tongue, while the LWV of PUERTO RICO produced conservation PSAs in Spanish, featuring the cartoon character, Benny Bombillia (Benny the Lightbulb).

Recycling projects are among the most successful activities Leagues can undertake, for they conserve not only energy, but other resources as well. The ILLINOIS League brought a new twist to this subject by coordinating local League attempts to establish recycling centers for used oil in their communities. Members arranged to have local service stations accept and recycle used motor oil from residents who service their own cars. The Leagues let the public know about the program through newspaper coverage and posters in community centers, gas stations and stores that sell automobile supplies. The LWV of GLENCOE, IL even took one extra step and made sure that the local government recycled the used oil from its vehicles.

Approximately one-third of the total energy consumed in the United States--the equivalent of 13.8 million barrels of oil per day--is used in buildings. About half of that energy could be saved if buildings conformed to energy-efficient designs. No wonder that so much League energy has gone into getting energy efficiency standards for newly constructed buildings.

● On the national level, the focus has been on the Department of Energy's Building Energy Performance Standards (BEPS), which mandate energy-conserving designs for new commercial and residential buildings. LWVUS Energy Chair, Dotty Powers, testified in support of the standards at a national DOE hearing on March 26, 1980.

● The MISSOURI League has done a lot of work at the state level on building standards--some of it education, some of it action. Missouri has also worked on BEPS; the League spoke in favor of the proposal at a hearing in Kansas City, MO and raised some questions about its application in the state.

● Another state League with a long history in this field is MINNESOTA, which has supported a statewide uniform building code incorporating energy conservation standards since 1971. Action in this area is also important at the local level. For example, the PUEBLO, CO LWV testified on a non-residential buildings standards program before its city council and county commission.

Standards for new buildings are important, but Leagues know that it is equally necessary to make present structures more energy efficient.

● In WINONA, MN, League volunteers trained by the state League energy committee are performing individual home energy audits.

● The COLORADO League, assisted by a \$10,000 grant from the Colorado Office of Energy Conservation, undertook an ambitious energy audit program. After a statewide training conference, 10 local Leagues distributed home energy forms in their areas. Radio interviews and a phone campaign encouraged homeowners to fill out the audit forms. The Leagues also organized neighborhood viewing groups to get people to watch a related TV show on energy conservation.

● The LWV of SEATTLE, WA, using a \$3,000 contract from the Washington Energy Extension Service (EES), conducted 40 Neighborhood Energy Awareness Training Sessions. League members arranged conservation programs in people's homes, featuring an audit by the Extension Service or the local utility.

Actually weatherizing a house to demonstrate the ener-

gy savings can be a powerful message for conservation, but may entail some expense. The INDIANAPOLIS, IN League found local businesses willing to contribute materials to their weatherization project, in which they retrofitted one-half of a duplex house to compare energy costs of the untouched and the energy-efficient portions. The League also got a \$2,000 grant from ACTION, since this home was designated to be an educational model for the urban poor.

An energy fair is another way to explore the "seeing is believing" principle. The SONOMA COUNTY, CA League participated in a highly successful four-day Energy Conservation Fair that had a goal of reducing the county's energy consumption by 25 percent. The fair was heavily geared towards involving students, and almost half of the 4,000 who attended were children, with many parents in tow. At the League booth, members answered questions, handed out free materials on conservation and renewable energy, and distributed "League Solar Clothes Dryers"--clothes pins.

Also at the local level, a WOODBRIDGE-BETHANY, CT League member/architect lectured on making homes more energy efficient, while the LWV of HIGHLAND PARK, NJ managed to have some energy-saving features incorporated into the design of the new borough hall.

Energy planning, a much-neglected science until recent years, is the basis for energy demand forecasting and facility construction decisions by utilities, conclusions about mass transit and energy investments by local governments, designs of cities and buildings by urban planners, etc. Leagues can play an important role by working to ensure that a strong conservation component is built into such plans. Two state Leagues have been particularly active in this field. FLORIDA is divided into 11 energy planning regions and many local Leagues are working with the Regional Energy Action Committee (REAC) in their vicinity to promote conservation and solar energy. In a complementary education effort, the Florida League geared its LWVEF-funded project towards enabling local officials and citizens to participate more effectively in planning their community's energy future. The NEW YORK League, testifying on that state's Energy Master Plan, praised conservation as an immediate and indigenous source of energy and stressed its role in determining future energy supplies and demand.

Conservation's potential is also important for energy planning at the local level, as the League of CORVALLIS, OR discovered when it sponsored a public meeting

Working with energy agencies

The Washington Energy Extension Service was one of ten pilot projects established to give local governments, small businesses and homeowners personalized information and technical assistance on conservation and renewable resources. That program is now being expanded to all 50 states plus the District of Columbia and the 6 U.S. territories, so the door is open for similar cooperative efforts by all Leagues. For more information, write DOE Energy Extension Service, Rm. 2H027, Washington, DC 20585.

Another tack is to publicize your state's existing energy agencies, as the NEVADA and NORTH DAKOTA Leagues have done. And, if your state doesn't have an Energy Office, follow the lead of the MISSISSIPPI League and lobby for the creation of such an agency.

that outlined an energy conservation plan which, if implemented, was estimated to save each taxpayer in the town \$50/month in energy costs.

Resources

Overview studies

ENERGY IN AMERICA'S FUTURE: THE CHOICES BEFORE US. A study prepared for the Resources For the Future National Energy Strategies Project. Sam H. Schurr and others. The Johns Hopkins University Press, 1979. 544 pp. \$10.95, paper.

ENERGY FUTURE: REPORT OF THE ENERGY PROJECT AT THE HARVARD BUSINESS SCHOOL. Edited by Robert Stobaugh and Daniel Yergin. Random House, Inc., 1979. 399 pp. \$12.95, cloth.

ENERGY: THE NEXT TWENTY YEARS. A report sponsored by the Ford Foundation and administered by Resources For the Future. Ballinger Publishing Company, 1979. 608 pp. \$25, cloth, \$9.95, paper.

THE LEAST-COST ENERGY STRATEGY: MINIMIZING CONSUMER COSTS THROUGH COMPETITION. A report of the Energy Productivity Center of the Mellon Institute. Roger W. Sant. Carnegie-Mellon University Press, 1925 N. Lynn St., Suite 1200, Arlington, VA 22209, 1979. 46 pp. \$5.00. (Quantity rates available.)

Others

CENTER FOR RENEWABLE RESOURCES (CRR), 1001 Connecticut Avenue, N.W., Room 530, Washington, DC 20036, (202) 466-6880. An outgrowth of the organizers of Sun Day, CRR produces publications and is developing a network of people and groups involved in solar projects. It is also carrying out grant-funded projects, including the Model Projects grant, which is identifying and publicizing the most innovative solar/conservation ideas across the country; a summary catalog should be available in 1980.

Grantsmanship

Leagues have been successful in getting money for their energy projects from the local utility or energy companies, regional DOE offices or the Energy Extension Service described above. The U.S. Department of Energy also has a number of grant programs which might be a source of funding. Announcements of these grants are often carried in The Energy Consumer, published by DOE's Office of Consumer Affairs (see RESOURCES section). Even if you don't get a grant, you might want to follow the NEW JERSEY League's example and help judge the grant applications from other organizations.

REACHING UP, REACHING OUT: A GUIDE TO ORGANIZING LOCAL SOLAR EVENTS. Solar Energy Research Institute (SERI), 1536 Cole Blvd., Golden, CO 80401. 1979. \$6.00. Order from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Order #061-000-00345-2. Contains organizing primer, events sampler, tips of structuring group efforts and extensive resources section. SERI sent every state League president a copy of this publication.

COUNTY ENERGY PLAN GUIDEBOOK: CREATING A RENEWABLE ENERGY PLAN. Alan Okagaki, with Jim Benson. Institute for Ecological Policies, 9208 Christopher St., Fairfax, VA 22031. 1979. \$7.50. This book shows how to prepare a step-by-step renewable energy plan for your county.

THE ENERGY CONSUMER, Office of Consumer Affairs, U.S. Department of Energy, Washington, DC 20585. Deals with many energy topics of general interest and should be very useful to League Energy chairs.

ENERGY-EFFICIENT COMMUNITY PLANNING: A GUIDE TO SAVING ENERGY AND PRODUCING POWER AT THE LOCAL LEVEL. James Ridgeway. J.G. Press, Box 351, Emmaus, PA 18049. 218 pp. \$14.95 cloth, \$9.95, paper. Describes leading energy-efficient communities and traces how the localities achieved their results.



memorandum

This is going on DPM

June 27, 1980

TO: Local and State League Presidents

FROM: Dorothy K. Powers, Energy Chair

RE: An Energy Emporium

This mailing includes a new tool for action on energy--a publication entitled An Energy Emporium: What Leagues Are Doing. This publication, sparked by requests in the 1978 Annual Reports for an energy "swapshop," briefly describes a variety of activities Leagues have undertaken at the state and/or local level to promote the energy position. Leagues interested in launching new efforts in energy will find that An Energy Emporium contains numerous suggestions for new projects in the areas of COAL/NATURAL GAS/OIL, NUCLEAR, UTILITIES, SOLAR/RENEWABLE RESOURCES, and CONSERVATION. The publication should also serve as a resource for Leagues working on a specific issue, such as energy efficiency standards for new buildings, to identify some other key Leagues involved in the same topic with whom you may want to share expertise and experiences.

In sum, An Energy Emporium can assist Leagues engaged in on-going energy endeavors as well as those planning unit meetings or community programs for the coming year. A second tool, the new LWV PROSPECTUS: A Planning Guide for State and Local Leagues, will include additional suggestions for education projects and for League action in the energy arena. This publication, described in the June 1980 POST-BOARD SUMMARY, will be mailed to Leagues in mid-August.

Finally, a reminder about energy education: the LWVEF COMMUNITY GUIDE, Citizens: The Untapped Energy Source (Feb. 1980, Pub. #436, 50¢), provides tips and techniques for community energy education activities, using state and/or local League projects as examples. And if you want some further help on energy education, remember that you can use the LWVEF "Le Bon Mott" WATS line (800-424-5483) for a toll-free call to the national office for technical assistance by the national board and staff or by other Leagues on energy education projects.



memorandum

This is going on DPM

June 1980

TO: State, Local and ILO Presidents
FROM: Florence R. Rubin, Urban Policy Chair
RE: New Publication, Troubled Cities: Roots, Realities, Remedies, Pub #394, 90¢

This striking new publication puts the reader in the center of a lively discussion that should expand your--and your city's decision-makers'--thinking about the "people" issues of your city's problems and potential.

The words--from academic humanists, bankers, city and federal officials, neighborhood leaders and others--were originally presented to 75 League members who met in Washington, D.C. last year for a training conference designed to present a range of ideas and analyses of the state of our cities and what they may face in the future.

Now the essence of these provocative presentations is yours--to share with your members and with the other movers and shakers in your town. Wouldn't you like the people who are making the decisions about urban revitalization to add humanistic values to the dollar values? Order copies now for your members, your local officials, bankers, business and labor leaders, civic organizations, neighborhood groups. (Can you find an "angel" to underwrite a large order?)*

Spurred on by this inspiring conference, 21 local Leagues designed education projects that place "people" values at the center of urban problem-solving. Soon to come: a Community Guide containing case studies of the most successful of these projects. Troubled Cities, along with this future publication, can help you to marshall the diverse forces--public and private--that need to work together toward a healthy future for our nation's cities.

*Remember, this pub is the product of a LWVEF project (funded by the National Endowment for the Humanities) and you may use funds on deposit with the State and Local Grants to purchase copies; you must have at least \$50.00 on deposit and an order of \$25.00 or more. Forms for this are obtainable from LWVEF.

ENERGY



Nuclear Power: An Annotated Bibliography 1981

A few of these publications are quite expensive; however, you may be able to locate them in public or university libraries, state energy offices, or regional offices of the Department of Energy.

General

THE ATOM BESIEGED: EXTRAPARLIAMENTARY DISSENT IN FRANCE AND GERMANY. Dorothy Nelkin and Michael Pollak. MIT Press, Cambridge, MA. 1980. 235 pp. Cloth, \$17.50. Discusses the history and socio/political roots of anti-nuclear activism in France and Germany, contrasting the effects in each country. Gives perspective on citizen participation in other countries.

ATOMIC ENERGY: A NEW START. David E. Lilienthal. Harper and Row, New York, NY. 1980. 124 pp. Cloth, \$8.95. Reflections on the history of nuclear power by the first chairman of the Atomic Energy Commission. Includes a discussion of the nuclear industry and prescriptions for the future of nuclear power.

THE ENERGY CONTROVERSY: THE FIGHT OVER NUCLEAR POWER. Fred H. Schmidt and David Bodansky. Albion Publishing Co., 1736 Stockton St., San Francisco, CA 94133. 1976. 154 pp. Paper, \$5.75. Systematically discusses and refutes the concerns about nuclear power, from reactor safety and radiation to proliferation and waste disposal. Includes appendices about the Price-Anderson Act, radiation and the emergency core cooling system.

LIGHT WATER: HOW THE NUCLEAR DREAM DISSOLVED. Irvin C. Bupp and Jean-Claude Derian. Basic Books, Inc., New York, NY. 1978. 241 pp. Cloth, \$10.00, paper, \$5.95. Details the history of the nuclear power industry in the United States and Europe and analyzes the reasons for anti-nuclear activism from the mid-seventies onward.

NUCLEAR POWER: THE AFTERMATH OF THREE MILE ISLAND. Daniel F. Ford and Steven J. Nadis. Union of Concerned Scientists, 1384 Massachusetts Ave., Cambridge, MA 02238. 1980. 30 pp. Paper, \$2.00. An analysis of the impact of the accident at Three Mile Island on the future of the nuclear power industry. Highlights unresolved industry problems.

NUCLEAR POWER FROM FISSION REACTORS: AN INTRODUCTION. U.S. Department of Energy, Office of Nu-

clear Energy Programs. 1979. 21 pp. Paper, free. Simple, short explanation, with diagrams, of how various types of fission reactors produce electricity. Includes a glossary of basic terms. Order from DOE Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830.

NUCLEAR POWER ISSUES AND CHOICES. Nuclear Energy Policy Study Group, Ford Foundation. Ballinger Publishing Company, 17 Dunster St., Cambridge, MA 02138. 1977. 418 pp. Cloth, \$19.50, paper, \$10.95. A comprehensive, balanced study of nuclear power in the context of the overall energy outlook.

NUCLEAR POWER QUICK REFERENCE II. General Electric Company, 777 14th St., NW, Washington, DC 20005. 1980. 56 pp. Paper, free. Basic facts and statistics on various aspects of nuclear power.

NUCLEAR POWER: TECHNOLOGY ON TRIAL. James J. Duderstadt and Chihiro Kikuchi. The University of Michigan Press, Ann Arbor, MI. 1979. 228 pp. Cloth, \$16.00, paper \$8.50. Assesses the need for power, the availability of alternative energy sources and the economics, environmental impact and safety of nuclear power. Concludes that nuclear power is a viable option.

Safety

THE NEED FOR CHANGE: THE LEGACY OF TMI. President's Commission on the Accident at Three Mile Island. U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402. 1979. 201 pp. Paper, \$5.50. The Kemeny Commission reports its findings on the accident at Three Mile Island and its recommendations for prevention and better management of future accidents.

THREE MILE ISLAND: A REPORT TO THE COMMISSIONERS AND TO THE PUBLIC. VOLUME I. Rogovin, Stern and Hugu. U.S. Department of Commerce, National Technical Information Service. 1980. 184 pp. Paper, \$5.00. Written by a special inquiry group for the Nuclear Regulatory Commission (NRC), this document details the events of the accident at Three Mile Island and makes recommendations for changes within the NRC to improve detection and management of accidents. Available from the U.S. Nuclear Regulatory Commission, Superintendent of Documents, Attention Sales Manager, Washington, DC 20555.

Radiation

THE EFFECTS ON POPULATIONS OF EXPOSURE TO LOW LEVELS OF IONIZING RADIATION. Committee on the Biological Effects of Ionizing Radiations, National Academy of Sciences. National Academy Press, 2101 Constitution Ave., NW, Washington, DC 20418. 1980. 638 pp. Paper, \$14.25. Comprehensive study of radiation, its sources and health effects, including cancer. Identifies acceptable levels of radiation exposure.

PROBLEMS IN ASSESSING THE CANCER RISKS OF LOW-LEVEL IONIZING RADIATION EXPOSURE. (2 volumes). General Accounting Office. 1981. First five copies free. Volume I, the summary report, describes the biological effects of radiation and discusses problems of determining the health effects of low-level radiation on population groups, with specific reference to known cases of excessive radiation exposure. Volume II is a more detailed presentation of the same material. Order from U.S. G.A.O., Document Handling and Information Services Facility, P.O. Box 6015, Gaithersburg, MD 20760.

The nuclear fuel cycle and proliferation

INTERNATIONAL NUCLEAR FUEL CYCLE EVALUATION SUMMARY VOLUME. International Atomic Energy Agency. Unipub, Inc., 345 Park Ave. South, New York, NY 10010. 1980. 285 pp. Cloth, \$32.50. Summarizes the findings and non-binding recommendations of the 1980 INFCE conference and its working groups. Provides perspective on the international outlook for nuclear power demand and its implications for nuclear weapons proliferation. Includes a concise description of the fuel cycle.

THE INTERNATIONAL URANIUM MARKET. Thomas L. Neff and Henry D. Jacoby. Massachusetts Institute of Technology Energy Laboratory Report No. MIT-EL 80-014. 1980. Paper, \$15.50. A study of international uranium supply and demand, the characteristics of the major uranium producers and consumers and the nature of the market. Suggests that active U.S. involvement in international uranium markets may benefit nonproliferation strategies. Order from Mrs. Jeanne Dean, Rm. E19-439, Energy Laboratory, MIT, Cambridge, MA 02139.

NUCLEAR FUEL REPROCESSING AND THE PROBLEMS OF SAFEGUARDING AGAINST THE SPREAD OF NUCLEAR WEAPONS. U.S. General Accounting Office, 441 G St., NW, Washington, DC 20548. 1980. 65 pp. Paper, free. Discusses reprocessing of spent nuclear fuel and calls for effective safeguards for reprocessing facilities and the establishment of international controls on excess plutonium supplies.

NUCLEAR PARADOX: SECURITY RISKS OF THE PEACEFUL ATOM. Michael A. Guhin. American Enterprise Institute for Public Policy Research, 1150 17th St., NW, Washington, DC 20036. 1976. 77 pp. Paper,

\$3.00. Characterizes past and current efforts to control international proliferation. Suggests that risks can best be reduced through the maintenance of regional stability and tight control of the export of nuclear technology to other countries.

NUCLEAR THEFT: RISKS AND SAFEGUARDS. Mason Willrich and Theodore B. Taylor. Ballinger Publishing Co., 17 Dunster St., Cambridge, MA 02138. 1974. 252 pp. Cloth, \$25.00, paper, \$9.95. A Report to the Energy Policy Project of the Ford Foundation discussing the risks of nuclear materials being stolen or diverted, present safeguards against nuclear theft and the weaknesses of these safeguards. Ends with recommendations for improved security.

Economic and environmental concerns

ECONOMIC AND ENVIRONMENTAL IMPACTS OF A U.S. NUCLEAR MORATORIUM 1985-2010. Alvin Weinberg, Editor. Institute for Energy Analysis and the MIT Press, Cambridge, MA 02142. 1979. 381 pp. Cloth, \$20.00. Discusses energy and economic growth and the environmental implications of increased coal use and compares alternative energy futures. Argues for a nuclear future.

NUCLEAR POWER AND ITS ENVIRONMENTAL EFFECTS. Samuel Glasstone and Walter H. Jordan. The American Nuclear Society, 555 North Kensington Ave., LaGrange Park, IL 60525. 1980. 395 pp. Cloth, \$26.95, paper, \$18.95. Extensive discussion of the nuclear industry's view of environmental effects of each segment of the nuclear fuel cycle.

UNAVAILABLE AT ANY PRICE: NUCLEAR INSURANCE. Keiki Kehoe. Environmental Policy Center, 317 Pennsylvania Avenue, SE, Washington, DC 20003. 1980. 30 pp. Paper, \$2.00. Explains the nuclear industry's limited liability against disaster under the Price-Anderson Act and suggests that this limitation provides a hidden subsidy to the nuclear industry. Makes a case for the repeal of the act.

UNPAID COSTS OF ELECTRICAL ENERGY: HEALTH AND ENVIRONMENTAL IMPACTS FROM COAL AND NUCLEAR POWER. William Ramsay, Resources for the Future. Johns Hopkins University Press. 1979. 180 pp. Paper, \$4.95. A Study prepared for the National Energy Strategies Project comparing the health, safety and environmental risks of coal-powered and nuclear-powered electricity generation. Addresses the problem of individual values and makes policy recommendations.

Nuclear waste

A NUCLEAR WASTE PRIMER. League of Women Voters Education Fund, 1730 M St., NW, Washington, DC 20036. 1980. 63 pp. Paper, \$1.25. Concise and understandable review of the sources, types and hazards of radioactive waste. Outlines past and present waste management programs and future policy options. (Additional nuclear waste publications listed in its resource section.)