

Testimony by Scott Sklar, President, The Stella Group, Ltd.
Before -
The House Committee on Armed Services
Subcommittee on Terrorism, Unconventional Threats and Capabilities
Tuesday, September 26, 2006
Washington, DC

TESTIMONY STATEMENT –

I wish to thank the Subcommittee for looking into energy as a critical military issue.

I have several basic points, I wish to convey.

First, the good news.

Secretary Rumsfeld has two parallel activities underway: the Defense Research and Engineering Power and Energy Task Force, and the Defense, Science Board Task Force on DOD Energy Strategy. These are important and healthy DOD exercises, looking at the issues from 60,000 feet.

The Defense Advanced Research Program (DARPA) has had an ongoing sophisticated set of activities ranging from flexible photovoltaics on tents (from traditional thin films to the newer nanotechnology light sensitive dyes) to fuel cells to biomass and waste utilization. These programs are far reaching, practical, and important to be continued and expanded.

The Department of Defense military services and bases have been leaders in the procurement and utilization of green energy and energy technologies. The Air Force is one of this nation's largest buyers of green power, Fort Huachuca (AZ) and Fort Bragg (NC) have been leaders in using solar thermal and electric and small wind technologies for buildings and perimeter security. China Lake (CA) has been an overall technology leader in utilizing a portfolio of energy efficiency and renewable energy applications. The Navy has recently procured waved-powered buoys in HI for electric power, and the Army has over 10,000 solar 'blankets' for powering field phones, while the US Air Force has recently ordered 150 solar LED airfield lighting units for runway edge caution lighting and taxiway edge lighting at a Forward Operating Base in the Middle East.

Specialized programs are also yielding results, such as the Air Force's Advanced Power Technology Office (APTO) at Warner Robbins AFB, as well as development of newer analytical tools at the Center for Army Analysis and the Center for Naval Analysis.

These successes come from a diverse set of professionals within the Defense structure – at all levels from technical to analytical professionals, commanders at the theater of war, base commanders and logistical staff, to politically-appointed program leaders spanning five Administrations. They deserve to be thanked, and I so do, as well as further supported, funded, and encouraged.

Additionally, five Administrations have issued Executive Orders, the most recent under President Bush are:

- May 16, 2003: #13212 Expedited Energy-Related Projects: to increase energy production and conservation and includes DOD
- September 30, 2001 #13138 PCAST Executive Order:
- July 31, 2001: Standby Power Devices: Watt for Standby Power which can include On-Site Power augmentation
- May 18, 2001: Task Force (including Defense) to Expedite Energy Related Projects

And the overarching Executive Order by President Clinton – printed Tuesday, June 8, 1999 The President (Clinton), Executive Order 13123 issued June 3, 1999, Greening the Government Through Efficient Energy Management.

These Executive Orders set the stage for focusing the federal sector on energy efficiency, renewable and distributed energy, as well as goal-setting procurement.

Second - now for the “tough love’ report.

I have participated in two Department of Defense reports (ARMY INSTALLATIONS SECURITY PLANS, November 2003, Office of Assistant Chief of Staff for Installation Management -sponsored by the Assistant Chief of Staff for Installation Management (ACSIM) of the Army and the Federal Energy Management Program of the Department of Energy) and REPORT TO CONGRESS. Department of Defense. DOD Renewable Energy Assessment. Final report. 14 March 2005. Overseen by Col. Worrell and Gueta Mezzetti). These reports involved scores of dedicated DOD professions for about two years each. These reports are on a shelf, many of the staff leaders have either retired or been sent onto other assignments. This typifies the basic issue that needs to be addressed by DOD and the Congress.

First, information needs to be centralized, referenced and easily accessed. This includes all past energy reports, at least since 2000. Second, the same needs to be done for ongoing energy and technology programs – so the different military services, the war colleges and the leadership within the Office of the Secretary of Defense can easily and topically see the status, successes and challenges of the work currently being undertaken. Third, there needs to be established a directory or database within DOD of the experts

inside and outside that participated in these reports, research, peer reviews and projects – so that others within the DOD family can access their experience and expertise. Fourth, these reports, experts and projects need to be conveyed in an ongoing program via National Defense University and the war colleges so that the emerging DOD leadership, whether they be facility managers or on the front lines – are acquainted and familiar with technology options.

For instance, this August, Marine Corps Maj. Gen. Richard Zilmer, the chief of the Multi-National Force-West in al-Anbar province, submitted an urgent request calling on the Pentagon to send more renewable energy systems to the country because they could leverage resources like sunlight or wind to produce power for bases and outposts. Commanders assert that tapping renewable energy sources would lessen dependence on fossil fuels -- a move that could reduce the amount of fuel convoys on the road and save lives. I would like to formally invite the House Armed Services Committees and Subcommittees members and staff to see one such unit nearby in North Arlington – 10 minutes from here – which was referenced in the Major General’s request – an electric generation unit powered by solar and wind, as well as another installation using fuel cell, advanced battery banks, small wind and thin film photovoltaics – to see first hand what are some of the commercial options available to be utilized by DOD and DHS.

The federal government has, as stated earlier funded many studies, I want to highlight a few conclusions, and I have a more thorough annotated list attached to this testimony:

In a 2001 study titled, “More Capable Warfighting Through Reduced Fuel Burden” sponsored by the Defense Science Board Task Force on Improving Fuel Efficiency of Weapons Platforms, stated “Ten Years after the Cold War, over 70 percent of the tonnage required to position today’s US Army into battle is fuel.”. (p. ES-1). Yet in a recent US Department of Energy report on Used Oil Re-refining (2006), the report says Europe has three times the used oil re-refining capacity as does the United States.

In ‘A Strategy: Moving America Away from Oil’ commissioned in 2003 by the Office of Net Assessment of the DOD Office of Secretary of Defense, raised the national security implications of having increasing dependence on oil and natural gas among trading partners and allies, US oil payments are used by other countries to support and buy destabilizing weapons or fund terrorists, and the reliance of both US and foreign infrastructure that is easy to disrupt and hard to mend (p. 42). During the very same year, the U Air Force sponsored, “Security Benefits of Renewable Generation” that blending photovoltaics (or other distributed generation) with diesel generation used solely in support of critical load could stretch operations for an addition seven days without a fuel supply (p 3).

The 2003 study entitled, “Army Installation Energy Security Plans” supported by the Office of the Assistant Chief of Staff for Installation Management, recommended, “develop a standardized verifiable database on new distributed generation, continue

analytical tools dealing with reliability and robustness for distributed generation (DG) technologies.

The commercial markets are growing at 30 percent per year for these new energy technologies and products. As a result, we now have the commercial technology now for practical utilization for either the military installations or in theater of war situations:

Recycling - vehicle lubricating oil – to be reused at the highest grade and with a diesel fuel byproduct rather than the lower grade recycled fuel with no. 6 fuel oil that DOD does now. Waste cooking and seed oils – small on-site biodiesel units sized to the oil seed or waste oil stream. Waste heat – using heat from pipeline pumps, diesel engines, and compressors for water heating and electricity. And, unused wood and paper packaging – small biomass gasifiers for onsite electricity production from wooden moving pallets to demolition waste

Remote power and critical infrastructure – on-soldier battery charging battery charging, uninterruptible cellular or perimeter security, pipeline water and fuel pumps, powering tents, ‘drop and play’ surveillance, listening posts, and generator units. Super light weight photovoltaics materials for aerial surveillance units.

Diagnostics, assessment and performance: - through using WIFI, beeper and cellular technologies can remotely track actual energy system performance, anticipate technical problems, and also assess future capacity performance of installed systems through advanced renewable resource assessment.

Building-based energy - solar water heating, solar air-conditioning either driving compressors or thermally-driving absorption coolers, ground-coupled heat pumps, thermal barrier paints and coated windows, smart controls and thermostats, and A/C ready small wind systems, and building integrated photovoltaics, bundled LED lighting, etc.

I implore the House Armed Services Committee to periodically track progress of energy adoption and implementation by the Department of Defense, and urge the Congressional Committee involved with Homeland Security to also become more attentive in this area. Collaborate with DOD on establishing a fuel portfolio which will ensure DOD is more agile, has lower logistical support needs, and far more resilient against challenges. Thank you.

RESPECTFULLY SUBMITTED -

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The Stella Group, Ltd.. is a strategic marketing and policy firm for clean distributed energy users and companies which include advanced batteries and controls, energy efficiency, fuel cells, heat engines, minigeneration (natural gas), microhydropower, modular biomass, photovoltaics, small wind, and solar thermal (including daylighting, water heating, industrial preheat, building air-conditioning, and electric power generation). The Stella Group, Ltd. blends distributed energy technologies, aggregates financing (including leasing), with a focus on system standardization. Scott Sklar, the Group's founder and president, lives in a solar home in Arlington, Virginia and his coauthored book: *The Forbidden Fuel* will be re-released in 2007 for its 2nd printing, and *A Consumer Guide to Solar Energy*, was re-released for its third printing. His Q&A Column appears on the largest clean energy web portal:
www.renewableenergyaccess.com.

Scott Sklar serves as Steering Committee Chair of the Sustainable Energy Coalition, composed of the renewable energy and energy efficiency trade associations and analytical groups, and sits on the national Boards of Directors of the non-profit Business Council for Sustainable Energy, Renewable Energy Policy Project, and the Sustainable Buildings Industry Council.

Pictures on prior pages are courtesy of:

Advanced Battery bank GridPoint (DC) www.gridpoint.com
Concentrated Solar Generator Solargenix Energy (NC) www.solargenix.com
El Salvador Biomass Power Unit Community Power Corporation (CO)

Freeflow Microhydropower on Pontoons Verdant Power (VA)
www.verdant.com
Ft, Huachuca Solar Water Heating, Barnes Field House, US Army
Fuel Cell for Perimeter Security Plug Power (NY) www.plugpower.com
PV/Battery Remote Power Unit Sacred Power (NM) www.sacredpower.com

PV Field Phone Charger UniSolar (MI) www.unisolar.com
PV on Tents Konarka Technologies, Inc. (MA) www.konarka.com
PV/Wind Cellular Tower Elevated Security (VA) www.elevated
security.com
PV/Wind Mobile Power Station SkyBuilt Power (VA) www.skybuilt.com
Wave Powered Buoy Ocean power Technologies (NJ)
www.oceanpowertech.com

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.



Fuel Cell for Perimeter Security

PV Field Phone Charger



PV





Wave-Powered Buoy



Advanced Battery Bank



PV Tents: Light Sensitive Dyes



Concentrated Solar Generator

Appendix #1

SCOTT SKLAR SELECTED DEFENSE and SECURITY BACKGROUND

ARMY INSTALLATIONS SECURITY PLANS, November 2003

Office of Assistant Chief of Staff for Installation Management.

This project was sponsored by the Assistant Chief of Staff for Installation Management (ACSIM) of the Army and the Federal Energy Management Program of the Department of Energy.

This project was led by the Energy and Security Group (ESG). The primary project team consisted of CALIBRE; Engineer Research Development Center's Construction Engineering Research Laboratory (ERDC-CERL); the University of Illinois at Urbana Champaign (UIUC); Center for Army Analysis (CAA); Sandia National Laboratory; and James Wolf and Scott Sklar as consultants to ESG.

REPORT TO CONGRESS. Department of Defense. DOD Renewable Energy Assessment. Final report. 14 March 2005. Sklar reported to Col. Worrel and Gueta Mezzetti, activity coordinators, as a senior technology and industry advisor.

NATIONAL DEFENSE UNIVERSITY - senior member of a 2006 team to assist in educating senior DOD officers and officials on distributed generation. Contact: Col. Bob Armstrong

SKYBUILT POWER.- <http://www.csmonitor.com/2005/1018/p02s01-sten.html> (an article on In-Q-Tel (CIA) investment in one of the companies he co-founded. Sklar is happy to provide tours of the demo unit in North Arlington which is 10 minutes from Capitol Hill.

Scott Sklar served on the staff of Senator Jacob K. Javits (NY) in the 1970's as an aide, assigned energy and military

Sklar has written numerous articles, presentations and papers including "Renewable and Distributed Energy as a Security Tactic", July 2004, Association of Energy Engineers, and "Tapping the Homeland Security Market, June 2005, Solar Today.

Appendix #2-

RENEWABLE and DISTRIBUTED ENERGY AS A SECURITY TACTIC

By Scott Sklar, President of The Stella Group, Ltd.
Washington, D.C. , July 2006

Introduction

Security implementation can be viewed from many perspectives. But whatever the issue and implementation approach, the supply and access to energy is a critical component.

This paper explores the options using distributed energy, primarily from renewable energy.

The three security areas covered are:

- low-power sensors, cameras, motion detectors and chemical sniffers - **detection**
- hardening infrastructure and buildings such as back-up power, sensors, uninterruptible power, and power quality – **prevention**
- scanners, electric fences, communications and emergency preparedness – **offensive and defensive preparations and actions**

In the ultra-high-security arena, advanced batteries, solar, small wind, and even on a more limited basis, fuel cells are utilized today. But in industrialized country settings, most is still interconnected with the electric grid or through the use of diesel generators.

DETECTION

From perimeter defense to remote sensing – all sorts of devices are utilized. These devices, in general, are small power to run cameras (traditional to night vision), heat and motion detectors, chemical and biological sensors, and audio taps. As these devices have become solid state, digital, and miniaturized – use of batteries and transformers to grid interface is very common.

Obviously, batteries have limitations for long duration uses. So use of photovoltaics primarily have immense options in adding to the life batteries through trickle charging near or far from the units. Even mini-wind turbines and handheld fuel cells have begun to enter the picture.

The real issue faces the sophistication of terrorists in deterring these devices. Using explosions or “arcs” that emit high electromagnetic pulses can essentially overpower many of these devices. But more easily, is pulsing through grid interconnects of electricity which more naturally burns out sophisticated equipment. The more that is detached from the grid and can be made “longer life” will be far more agile and resistant.

Newer systems can also be hardened from electromagnetic pulsing as part of the package if forethought is given.

The higher and harder to reach any sensing and detection equipment is placed, the harder t disable. PV , mini-wind, and micro-fuel cells all have great capacity to be co-located with these devices and hardened themselves appropriately.

Traditionally wired systems are easy to disable, and greater care needs to be given to the more sophisticated and better trained individual.

The military and intelligence agencies have had vast expertise with advanced distributed power technologies which have a solid record of performance.

PREVENTION

Systems that provide rust prevention (cathodic protection), pipeline protection (density sensors), spill and agent pre-detection (chemical and biological sensors), and crime and penetration sensing (heat and motion detectors, cameras and night vision) – as stated

earlier – are generally run off of grid-intertied systems, conventional battery banks, and diesel engines.

These larger systems used in prevention of damage to pipelines, electric grid, area and perimeter security, building and facility defense – are even easier to disable than small detection systems.

Diesel engines, aside from their unreliability, generally must have their fuel tanks outside. Aside from fuel disruptions and general breakdowns, any individual with low training skills can damage diesel tanks. Not only can they disable diesel generators, but they can induce the flammable fuel to combust outside the tanks – and all this can be done from afar. Natural disasters have also shown diesel to be an absurd back-up strategy for emergency preparedness since they are susceptible to flooding by water and their fuel floats on water.

Larger systems that are grid intertied can have wires cut or transformers disable (which can be done from afar). Battery banks are reliable for short power outages but not long ones. On-site PV along with small wind systems and even small fuel cells can lengthen battery life for long periods, and in some cases, indefinitely.

Clearly, it is time to invest in renewable-based back-up systems for police, fire, regional homeland security communications, and infrastructure hardening devices – in all its aspects.

Blending energy sources and having redundancy in sensing, communicating and powering should be the basic principle used by federal, state and local government – and private sector – approaches to security.

EMERGENCY PREPAREDNESS – DEFENSIVE/OFFENSIVE

“Drop and Plop” power for the military and traditional emergency preparedness is based upon the reliance of diesel generators. In the military, more than half the support structure relates to fuel delivery. Over-reliance on diesel will cause the cost and back-up logistical to become astronomical as we face homeland security challenges as well as trends to harsher weather patterns relating to global climate change.

Primarily PV and lately fuel cells are used by the military in “theater of war” activities. NASA employs these technologies in very harsh environments. Other technologies including solar absorption cooling, heat engines, micro wind turbines, micro hydropower, and modular biomass systems are all on the verge of becoming more easily available. Aggregated purchasing and training, will lower costs, increase availability, and enhance user confidence.

Systems that provide aggressive protection such as electric fences, eye scanners, and molecular sensors must be used in a more aggressive fashion to protect critical

infrastructure. These systems can only be inviolate if power systems can be co-located and have low-maintenance and minimal fuel requirements.

Noise of traditional diesel systems actually create a lure for individuals wishing to cause disruptions. Power lines dropping from transformers are listed in most handbooks as to “what to look for” if anyone wants to disable security systems.

For those relying on diesel after natural disasters, always comment on the harsh environment of being housed near big diesels with their noise and fumes. A more sophisticated approach is needed in even traditional emergency response planning, and now a range of technologies are commercially available.

Lower weight photovoltaics, small fuel cells on hydrogen and methanol, small wind turbines that can be snapped on existing light and telephone poles, and freeflow microhydro systems that can be dropped on pontoons – are all now in the market place for very small niche applications.

CONCLUSION

The world is not a safe place but more technologies are available now than in any time in the past to provide reliable power for an increasingly digital age.

Market signals that allow US industry to evolve, hybridize, and harden technologies to meet security needs are critical.

Smarter training of procurement officials and security planners are critical to know what new technologies are available.

Military users of these new technologies must be allowed to be available for security planners and local governments, so they understand the options, limitation and benefits of these new technologies.

Greater technical support for potential users by experts within the security, distributed energy, smart controls, and wireless communications sectors must be encouraged and funded.

Reliance on old technologies is a luxury that can no longer be supported. These traditional technologies – standard battery banks, diesel engines, and grid-intertied systems – are too easy to disable, are unreliable, and do not have long term “staying” power necessary for the emergencies we all may realistically face.

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Appendix #3 –

SELECTED PRESIDENTIAL (ENERGY) EXECUTIVE ORDERS

PRESIDENT BUSH –

For Immediate Release

Office of the Press Secretary

May 16, 2003

Executive Order Amending Executive Order 13212, Actions to Expedite Energy-Related Projects

By the authority vested in me as President by the Constitution and the laws of the United States, including section 60133 of title 49, United States Code, and section 301 of title 3, United States Code, it is hereby ordered as follows:

Section 1. Amendments to Executive Order 13212. Executive Order 13212 of May 18, 2001, as amended, is further amended by:

(a) in section 1, immediately before the period at the end of the section, inserting "and projects that will strengthen pipeline safety";

(b) in section 2, after "energy-related projects" inserting "(including pipeline safety projects)"; and

(c) revising section 3 to read as follows:

"Sec. 3. Interagency Task Force. (a) There is established, within the Department of Energy for administrative purposes, an interagency task force (Task Force) to perform the following functions: (i) monitor and assist the agencies in their efforts to expedite their reviews of permits or similar actions, as necessary, to accelerate the completion of energy-related projects (including pipeline safety projects), increase energy production and conservation, and improve the transmission of energy;

(ii) monitor and assist agencies in setting up appropriate mechanisms to coordinate Federal, State, tribal, and local permitting in geographic areas where increased permitting activity is expected; and

(iii) perform the functions of the interagency committee for which section 60133 of title 49, United States Code, provides.

(b)(i) The Task Force shall consist exclusively of the following members:

(A) in the performance of all Task Force functions set out in sections 3(a)(i) and (ii) of this order, the Secretaries of State, the Treasury, Defense, Agriculture, Housing and Urban Development, Commerce, Transportation, the Interior, Labor, Education, Health and Human Services, Energy, and Veterans Affairs, the Attorney General, the Administrator of the Environmental Protection Agency, the Director of Central Intelligence, the Administrator of General Services, the Director of the Office of Management and Budget, the Chairman of the Council of Economic Advisers, the Assistant to the President for Domestic Policy, the Assistant to the President for Economic Policy, and such other heads of agencies as the Chairman of the Council on Environmental Quality may designate; and

(B) in the performance of the functions to which section 3(a)(iii) of this order refers, the officers listed in section 60133(a)(2)(A)-(H) of title 49, United States Code, and such other representatives of Federal agencies with responsibilities relating to pipeline repair projects as the Chairman of the Council on Environmental Quality may designate.

(ii) A member of the Task Force may designate, to perform the Task Force functions of the member, a full-time officer or employee of that member's agency or office.

(c) The Chairman of the Council on Environmental Quality shall chair the Task Force.

(d) Consultation in the implementation of this order with State and local officials and other persons who are not full-time or permanent part-time employees of the Federal Government shall be conducted in a manner that elicits fully the individual views of each official or other person consulted, without deliberations or efforts to achieve consensus on advice or recommendations.

(e) This order shall be implemented in a manner consistent with the President's constitutional authority to supervise the unitary executive branch."

Sec. 2. Judicial Review. This order is intended only to improve the internal management of the Federal Government, and is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by a party against the United States, its agencies, instrumentalities or entities, its officers or employees, or any other person.

GEORGE W. BUSH

THE WHITE HOUSE,

May 15, 2003.

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Executive Order

President's Council of Advisors on Science and Technology

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the Federal Advisory Committee Act, as amended (5 U.S.C. App.), and in order to establish an advisory committee on science and technology, it is hereby ordered as follows:

Section 1. Establishment. There is established the President's Council of Advisors on Science and Technology (PCAST). The PCAST shall be composed of not more than 25 members, one of whom shall be a Federal Government official designated by the President (the "Official"), and 24 of whom shall be nonfederal members appointed by the President and have diverse perspectives and expertise in science, technology, and the impact of science and technology on the Nation. The Official shall co-chair PCAST with a nonfederal member designated by the President.

Sec. 2. Functions. (a) The PCAST shall advise the President, through the Official, on matters involving science and technology policy.

(b) In performance of its advisory duties, the PCAST shall assist the National Science and Technology Council (NSTC) in securing private sector involvement in its activities.

Sec. 3. Administration. (a) The heads of the executive departments and agencies shall, to the extent permitted by law, provide the PCAST with information concerning scientific and technological matters when requested by the PCAST co-chairs.

(b) In consultation with the Official, the PCAST is authorized to convene ad hoc working groups to provide preliminary nonbinding information and advice directly to the PCAST.

(c) Members shall serve without compensation for their work on the PCAST. However, members may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by law for persons serving intermittently in the government service (5 U.S.C. 5701-5707).

(d) Any expenses of the PCAST shall be paid from the funds available for the expenses of the Office of Science and Technology Policy.

(e) The Office of Science and Technology Policy shall provide such administrative services as the PCAST may require, with the approval of the Official.

Sec. 4. General. (a) Notwithstanding any other Executive Order, the functions of the President with respect to the PCAST under the Federal Advisory Committee Act, as amended, except that of reporting to the Congress, shall be performed by the Office of Science and Technology Policy in accordance with the guidelines and procedures established by the Administrator of General Services.

(b) The PCAST shall terminate 2 years from the date of this order unless extended by the President prior to that date.

(c) Executive Order 12882 of November 23, 1993; Executive Order 12907 of April 14, 1994; and section 1(h) of Executive Order 13138 of September 30, 1999, are hereby revoked.

GEORGE W. BUSH
THE WHITE HOUSE,
September 30, 2001.

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July 31, 2001
Energy Efficient Standby Power Devices

EXECUTIVE ORDER

ENERGY EFFICIENT STANDBY POWER DEVICES

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Energy Conservation Policy Act (Public Law 95-619, 92 Stat. 3206, 42 U.S.C. 8252 et seq.), as amended by the Energy Policy Act of 1992 (EPACT) (Public Law 102-486, 106 Stat. 2776), and section 301 of title 3, United States Code, and in order to further encourage energy conservation by the Federal Government, it is hereby ordered as follows:

Section 1. Energy Efficient Standby Power Devices. Each agency, when it purchases commercially available, off-the-shelf products that use external standby power devices, or that contain an internal standby power function, shall purchase products that use no more than one watt in their standby power consuming mode. If such products are not available, agencies shall purchase products with the lowest standby power wattage while in their standby power consuming mode. Agencies shall adhere to these requirements, when life-cycle cost-effective and practicable and where the relevant product's utility and performance are not compromised as a result. By December 31, 2001, and on an annual basis thereafter, the Department of Energy, in consultation with the Department of Defense and the General Services Administration, shall compile a preliminary list of products to be subject to these requirements. The Department of Energy shall finalize the list and m

Sec. 2. Independent Agencies. Independent agencies are encouraged to comply with the provisions of this order.

Sec. 3. Definition. "Agency" means an executive agency as defined in 5 U.S.C. 105. For the purpose of this order, military departments, as defined in 5 U.S.C. 102, are covered by the Department of Defense.

GEORGE W. BUSH
THE WHITE HOUSE,
July 31, 2001.

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May 18, 2001

Executive Order
Actions Concerning Regulations That Significantly
Affect Energy Supply, Distribution, or Use

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to appropriately weigh and consider the effects of

the Federal Government's regulations on the supply, distribution, and use of energy, it is hereby ordered as follows:

Section 1. Policy. The Federal Government can significantly affect the supply, distribution, and use of energy. Yet there is often too little information regarding the effects that governmental regulatory action can have on energy. In order to provide more useful energy-related information and hence improve the quality of agency decisionmaking, I am requiring that agencies shall prepare a Statement of Energy Effects when undertaking certain agency actions. As described more fully below, such Statements of Energy Effects shall describe the effects of certain regulatory actions on energy supply, distribution, or use.

Sec. 2. Preparation of a Statement of Energy Effects.

(a) To the extent permitted by law, agencies shall prepare and submit a Statement of Energy Effects to the Administrator of the Office of Information and Regulatory Affairs, Office of Management and Budget, for those matters identified as significant energy actions.

(b) A Statement of Energy Effects shall consist of a detailed statement by the agency responsible for the significant energy action relating to:

(i) any adverse effects on energy supply, distribution, or use (including a shortfall in supply, price increases, and increased use of foreign supplies) should the proposal be implemented, and

(ii) reasonable alternatives to the action with adverse energy effects and the expected effects of such alternatives on energy supply, distribution, and use.

(c) The Administrator of the Office of Information and Regulatory Affairs shall provide guidance to the agencies on the implementation of this order and shall consult with other agencies as appropriate in the implementation of this order.

Sec. 3. Submission and Publication of Statements.

(a) Agencies shall submit their Statements of Energy Effects to the Administrator of the Office of Information and Regulatory Affairs, Office of Management and Budget, whenever they present the related submission under Executive Order 12866 of September 30, 1993, or any successor order.

(b) Agencies shall publish their Statements of Energy Effects, or a summary thereof, in each related Notice of Proposed Rulemaking and in any resulting Final Rule.

Sec. 4. Definitions. For purposes of this order:

(a) "Regulation" and "rule" have the same meaning as they do in Executive Order 12866 or any successor order.

(b) "Significant energy action" means any action by an agency (normally published in the Federal Register) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking:

(1)(i) that is a significant regulatory action under Executive Order 12866 or any successor order, and

(ii) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or

(2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action.

(c) "Agency" means any authority of the United States that is an "agency" under 44 U.S.C. 3502(1), other than those considered to be independent regulatory agencies, as defined in 44 U.S.C. 3502(5).

Sec. 5. Judicial Review. Nothing in this order shall affect any otherwise available judicial review of agency action. This order is intended only to improve the internal management of the Federal Government and does not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.

GEORGE W. BUSH
THE WHITE HOUSE,
May 18, 2001.
###

Executive Order

Actions to Expedite Energy-Related Projects

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to take additional steps to expedite the increased supply and availability of energy to our Nation, it is hereby ordered as follows:

Section 1. Policy. The increased production and transmission of energy in a safe and environmentally sound manner is essential to the well-being of the American people. In general, it is the policy of this Administration that executive departments and agencies (agencies) shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy.

Sec. 2. Actions to Expedite Energy-Related Projects. For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections. The agencies shall take such actions to the extent permitted by law and regulation, and where appropriate.

Sec. 3. Interagency Task Force. There is established an interagency task force (Task Force) to monitor and assist the agencies in their efforts to expedite their review of permits or similar actions, as necessary, to accelerate the completion of energy-related projects, increase energy production and conservation, and improve transmission of energy. The Task Force also shall monitor and assist agencies in setting up appropriate mechanisms to coordinate Federal, State, tribal, and local permitting in geographic areas where increased permitting activity is expected. The Task Force shall be composed of representatives from the Departments of State, the Treasury, Defense, Agriculture, Housing and Urban Development, Justice, Commerce, Transportation, the Interior, Labor, Education, Health and Human Services, Energy, Veterans Affairs, the Environmental Protection Agency, Central Intelligence Agency, General Services

Administration, Office of Management and Budget, Council of Economic Advisers, Domestic Policy Council, National Economic Council, and such other representatives as may be determined by the Chairman of the Council on Environmental Quality. The Task Force shall be chaired by the Chairman of the Council on Environmental Quality and housed at the Department of Energy for administrative purposes.

Sec. 4. Judicial Review. Nothing in this order shall affect any otherwise available judicial review of agency action. This order is intended only to improve the internal management of the Federal Government and does not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.

GEORGE W. BUSH
THE WHITE HOUSE,
May 18, 2001.

PRESIDENT CLINTON -

Presidential Documents

Federal Register

Vol. 64, No. 109

Tuesday, June 8, 1999

Title 3—

The President

Executive Order 13123 of June 3, 1999

Greening the Government Through Efficient Energy
Management

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Energy Conservation Policy Act (Public Law 95–619, 92 Stat. 3206, 42 U.S.C. 8252 et seq.), as amended by the Energy Policy Act of 1992 (EPACT) (Public Law 102–486, 106 Stat. 2776), and section 301 of title 3, United States Code,

Section 101. Federal Leadership. The Federal Government, as the Nation's largest energy consumer, shall significantly improve its energy management in order to save taxpayer dollars and reduce emissions that contribute to air pollution and global climate change. With more than 500,000 buildings, the Federal Government can lead the Nation in energy efficient building design, construction, and operation. As a major consumer that spends \$200 billion annually on products and services, the Federal Government can promote energy efficiency, water conservation, and the use of renewable energy products, and help foster markets for emerging technologies. In encouraging effective energy management in the Federal Government, this order builds on work begun under EPACT and previous Executive orders.

PART 2—GOALS

Sec. 201. Greenhouse Gases Reduction Goal. Through life-cycle cost-effective energy measures, each agency shall reduce its greenhouse gas emissions attributed to facility energy use by 30 percent by 2010 compared to such emissions levels in 1990. In order to encourage optimal investment in energy improvements, agencies can count greenhouse gas reductions from improvements in nonfacility energy use toward this goal to the extent that these reductions are approved by the Office of Management and Budget (OMB).

Sec. 202. Energy Efficiency Improvement Goals. Through life-cycle cost-effective measures, each agency shall reduce energy consumption per gross square foot of its facilities, excluding facilities covered in section 203 of this order, by 30 percent by 2005 and 35 percent by 2010 relative to 1985. No facilities will be exempt from these goals unless they meet new criteria for exemptions, to be issued by the Department of Energy (DOE).

Sec. 203. Industrial and Laboratory Facilities. Through life-cycle cost-effective measures, each agency shall reduce energy consumption per square foot, per unit of production, or per other unit as applicable by 20 percent by 2005 and 25 percent by 2010 relative to 1990. No facilities will be exempt from these goals unless they meet new criteria for exemptions, as issued by DOE.

Sec. 204. Renewable Energy. Each agency shall strive to expand the use of renewable energy within its facilities and in its activities by implementing renewable energy projects and by purchasing electricity from renewable energy sources. In support of the Million Solar Roofs initiative, the Federal Government shall strive to install 2,000 solar energy systems at Federal facilities by the end of 2000, and 20,000 solar energy systems at Federal facilities by 2010.

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Sec. 205. Petroleum. Through life-cycle cost-effective measures, each agency shall reduce the use of petroleum within its facilities. Agencies may accomplish this reduction by switching to a less greenhouse gas-intensive, nonpetroleum energy source, such as natural gas or renewable energy sources; by eliminating unnecessary fuel use; or by other appropriate methods. Where alternative fuels are not practical or life-cycle cost-effective, agencies shall strive to improve the efficiency of their facilities.

Sec. 206. Source Energy. The Federal Government shall strive to reduce total energy use and associated greenhouse gas and other air emissions, as measured at the source. To that end, agencies shall undertake life-cycle cost-effective projects in which source energy decreases, even if site energy use increases. In such cases, agencies will receive credit toward energy reduction goals through guidelines developed by DOE.

Sec. 207. Water Conservation. Through life-cycle cost-effective measures,

agencies shall reduce water consumption and associated energy use in their facilities to reach the goals set under section 503(f) of this order. Where possible, water cost savings and associated energy cost savings shall be included in Energy-Savings Performance Contracts and other financing mechanisms.

PART 3—ORGANIZATION AND ACCOUNTABILITY

Sec. 301. Annual Budget Submission. Each agency's budget submission to OMB shall specifically request funding necessary to achieve the goals of this order. Budget submissions shall include the costs associated with: encouraging the use of, administering, and fulfilling agency responsibilities under Energy-Savings Performance Contracts, utility energy-efficiency service contracts, and other contractual platforms for achieving conservation goals; implementing life-cycle cost-effective measures; procuring life-cycle cost-effective products; and constructing sustainably designed new buildings, among other energy costs. OMB shall issue guidelines to assist agencies in developing appropriate requests that support sound investments in energy improvements and energy-using products.

OMB shall explore the feasibility of establishing a fund that agencies could draw on to finance exemplary energy management activities and investments with higher initial costs but lower life-cycle costs. Budget requests to OMB in support of this order must be within each agency's planning guidance level.

Sec. 302. Annual Implementation Plan. Each agency shall develop an annual implementation plan for fulfilling the requirements of this order. Such plans shall be included in the annual reports to the President under section 303 of this order.

Sec. 303. Annual Reports to the President. (a) Each agency shall measure and report its progress in meeting the goals and requirements of this order on an annual basis. Agencies shall follow reporting guidelines as developed under section 306(b) of this order. In order to minimize additional reporting requirements, the guidelines will clarify how the annual report to the President should build on each agency's annual Federal energy reports submitted to DOE and the Congress. Annual reports to the President are due on January 1 of each year beginning in the year 2000.

(b) Each agency's annual report to the President shall describe how the agency is using each of the strategies described in Part 4 of this order to help meet energy and greenhouse gas reduction goals. The annual report to the President shall explain why certain strategies, if any, have not been used. It shall also include a listing and explanation of exempt facilities.

Sec. 304. Designation of Senior Agency Official. Each agency shall designate a senior official, at the Assistant Secretary level or above, to be responsible for meeting the goals and requirements of this order, including preparing the annual report to the President. Such designation shall be reported by each Cabinet Secretary or agency head to the Deputy Director for Management of OMB within 30 days of the date of this order. Designated officials shall participate in the Interagency Energy Policy Committee, described in section

306(d) of this order. The Committee shall communicate its activities to all designated officials to assure proper coordination and achievement of the goals and requirements of this order.

Sec. 305. Designation of Agency Energy Teams. Within 90 days of the date of this order, each agency shall form a technical support team consisting of appropriate procurement, legal, budget, management, and technical representatives to expedite and encourage the agency's use of appropriations, Energy-Savings Performance Contracts, and other alternative financing mechanisms necessary to meet the goals and requirements of this order.

Sec. 305. Designation of Agency Energy Teams. Within 90 days of the date of this order, each agency shall form a technical support team consisting of appropriate procurement, legal, budget, management, and technical representatives to expedite and encourage the agency's use of appropriations, Energy-Savings Performance Contracts, and other alternative financing mechanisms necessary to meet the goals and requirements of this order.

Agency energy team activities shall be undertaken in collaboration with each agency's representative to the Interagency Energy Management Task Force, as described in section 306(e) of this order.

Sec. 306. Interagency Coordination. (a) Office of Management and Budget. The Deputy Director for Management of OMB, in consultation with DOE, shall be responsible for evaluating each agency's progress in improving energy management and for submitting agency energy scorecards to the President to report progress.

(1) OMB, in consultation with DOE and other agencies, shall develop the agency energy scorecards and scoring system to evaluate each agency's progress in meeting the goals of this order. The scoring criteria shall include the extent to which agencies are taking advantage of key tools to save energy and reduce greenhouse gas emissions, such as Energy-Savings Performance Contracts, utility energy-efficiency service contracts, ENERGY STAR[®] and other energy efficient products, renewable energy technologies, electricity from renewable energy sources, and other strategies and requirements listed in Part 4 of this order, as well as overall efficiency and greenhouse gas metrics and use of other innovative energy efficiency practices. The scorecards shall be based on the annual energy reports submitted to the President under section 303 of this order.

(2) The Deputy Director for Management of OMB shall also select outstanding agency energy management team(s), from among candidates nominated by DOE, for a new annual Presidential award for energy efficiency.

(b) Federal Energy Management Program. The DOE's Federal Energy Management Program (FEMP) shall be responsible for working with the agencies to ensure that they meet the goals of this order and report their progress. FEMP, in consultation with OMB, shall develop and issue guidelines for agencies' preparation of their annual reports to the President on energy

management, as required in section 303 of this order. FEMP shall also have primary responsibility for collecting and analyzing the data, and shall assist OMB in ensuring that agency reports are received in a timely manner.

(c) President's Management Council. The President's Management Council (PMC), chaired by the Deputy Director for Management of OMB and consisting of the Chief Operating Officers (usually the Deputy Secretary) of the largest Federal departments and agencies, will periodically discuss agencies' progress in improving Federal energy management.

(d) Interagency Energy Policy Committee. This Committee was established by the Department of Energy Organization Act. It consists of senior agency officials designated in accordance with section 304 of this order. The Committee is responsible for encouraging implementation of energy efficiency policies and practices. The major energy-consuming agencies designated by DOE are required to participate in the Committee. The Committee shall communicate its activities to all designated senior agency officials to promote coordination and achievement of the goals of this order.

(e) Interagency Energy Management Task Force.

The Task Force was established by the National Energy Conservation Policy Act. It consists of each agency's chief energy manager. The Committee shall continue to work toward improving agencies' use of energy management tools and sharing information on Federal energy management across agencies.

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Sec. 307. Public/Private Advisory Committee. The Secretary of Energy will appoint an advisory committee consisting of representatives from Federal agencies, State governments, energy service companies, utility companies, equipment manufacturers, construction and architectural companies, environmental, energy and consumer groups, and other energy-related organizations. The committee will provide input on Federal energy management, including how to improve use of Energy-Savings Performance Contracts and utility energy-efficiency service contracts, improve procurement of ENERGY STAR[®] and other energy efficient products, improve building design, reduce process energy use, and enhance applications of efficient and renewable energy technologies at Federal facilities.

Sec. 308. Applicability. This order applies to all Federal departments and

Sec. 308. Applicability. This order applies to all Federal departments and agencies. General Services Administration (GSA) is responsible for working with agencies to meet the requirements of this order for those facilities for which GSA has delegated operations and maintenance authority. The Department of Defense (DOD) is subject to this order to the extent that it does not impair or adversely affect military operations and training (including tactical aircraft, ships, weapons systems, combat training, and border security).

PART 4—PROMOTING FEDERAL LEADERSHIP IN ENERGY MANAGE-

MENT

Sec. 401. Life-Cycle Cost Analysis. Agencies shall use life-cycle cost analysis in making decisions about their investments in products, services, construction, and other projects to lower the Federal Government's costs and to reduce energy and water consumption. Where appropriate, agencies shall consider the life-cycle costs of combinations of projects, particularly to encourage bundling of energy efficiency projects with renewable energy projects. Agencies shall also retire inefficient equipment on an accelerated basis where replacement results in lower life-cycle costs. Agencies that minimize life-cycle costs with efficiency measures will be recognized in their scorecard evaluations.

Sec. 402. Facility Energy Audits. Agencies shall continue to conduct energy and water audits for approximately 10 percent of their facilities each year, either independently or through Energy-Savings Performance Contracts or utility energy-efficiency service contracts.

Sec. 403. Energy Management Strategies and Tools. Agencies shall use a variety of energy management strategies and tools, where life-cycle cost-effective, to meet the goals of this order.

An agency's use of these strategies and tools shall be taken into account in assessing the agency's progress and formulating its scorecard.

(a) Financing Mechanisms. Agencies shall maximize their use of available alternative financing contracting mechanisms, including Energy-Savings Performance Contracts and utility energy-efficiency service contracts, when life-cycle cost-effective, to reduce energy use and cost in their facilities and operations. Energy-Savings Performance Contracts, which are authorized under the National Energy Conservation Policy Act, as modified by the Energy Policy Act of 1992, and utility energy-efficiency service contracts provide significant opportunities for making Federal facilities more energy efficient at no net cost to taxpayers.

(b) ENERGY STAR[®] and Other Energy Efficient Products.

(1) Agencies shall select, where life-cycle cost-effective, ENERGY STAR[®] and other energy efficient products when acquiring energy-using products. For product groups where ENERGY STAR[®] labels are not yet available, agencies shall select products that are in the upper 25 percent of energy efficiency as designated by FEMP. The Environmental Protection Agency (EPA) and DOE shall expedite the process of designating products as ENERGY STAR[®] and will merge their current efficiency rating procedures.

(2) GSA and the Defense Logistics Agency (DLA), with assistance from EPA and DOE, shall create clear catalogue listings that designate these 30855 Federal Register/Vol. 64, No. 109/Tuesday, June 8, 1999/Presidential Documents products in both print and electronic formats. In addition, GSA and DLA shall undertake pilot projects from selected energy-using products to show a "second price tag", which means an accounting of the operating and purchase costs of the item, in both printed and electronic catalogues and assess the impact of providing this information on Federal purchasing deci-

sions.

(3) Agencies shall incorporate energy efficient criteria consistent with ENERGY STAR® and other FEMP-designated energy efficiency levels into all guide specifications and project specifications developed for new construction and renovation, as well as into product specification language developed for Basic Ordering Agreements, Blanket Purchasing Agreements, Government Wide Acquisition Contracts, and all other purchasing procedures.

(4) DOE and OMB shall also explore the creation of financing agreements with private sector suppliers to provide private funding to offset higher up-front costs of efficient products. Within 9 months of the date of this order, DOE shall report back to the President's Management Council on the viability of such alternative financing options.

(c) ENERGY STAR® Buildings. Agencies shall strive to meet the ENERGY STAR® Building criteria for energy performance and indoor environmental quality in their eligible facilities to the maximum extent practicable by the end of 2002.

Agencies may use Energy-Savings Performance Contracts, utility energy-efficiency service contracts, or other means to conduct evaluations and make improvements to buildings in order to meet the criteria. Buildings that rank in the top 25 percent in energy efficiency relative to comparable commercial and Federal buildings will receive the ENERGY STAR® building label. Agencies shall integrate this building rating tool into their general facility audits.

(d) Sustainable Building Design. DOD and GSA, in consultation with DOE and EPA, shall develop sustainable design principles. Agencies shall apply such principles to the siting, design, and construction of new facilities. Agencies shall optimize life-cycle costs, pollution, and other environmental (d) Sustainable Building Design. DOD and GSA, in consultation with DOE and EPA, shall develop sustainable design principles. Agencies shall apply such principles to the siting, design, and construction of new facilities. Agencies shall optimize life-cycle costs, pollution, and other environmental and energy costs associated with the construction, life-cycle operation, and decommissioning of the facility. Agencies shall consider using Energy-Savings Performance Contracts or utility energy-efficiency service contracts to aid them in constructing sustainably designed buildings.

(e) Model Lease Provisions. Agencies entering into leases, including the renegotiation or extension of existing leases, shall incorporate lease provisions that encourage energy and water efficiency wherever life-cycle cost-effective. Build-to-suit lease solicitations shall contain criteria encouraging sustainable design and development, energy efficiency, and verification of building performance. Agencies shall include a preference for buildings having the ENERGY STAR® building label in their selection criteria for acquiring leased buildings. In addition, all agencies shall encourage lessors to apply for the ENERGY STAR® building label and to explore and implement

projects that would reduce costs to the Federal Government, including projects carried out through the lessors' Energy-Savings Performance Contracts or utility energy-efficiency service contracts.

(f) Industrial Facility Efficiency Improvements. Agencies shall explore efficiency opportunities in industrial facilities for steam systems, boiler operation, air compressor systems, industrial processes, and fuel switching, including cogeneration and other efficiency and renewable energy technologies.

(g) Highly Efficient Systems. Agencies shall implement district energy systems, and other highly efficient systems, in new construction or retrofit projects when life-cycle cost-effective. Agencies shall consider combined cooling, heat, and power when upgrading and assessing facility power needs and shall use combined cooling, heat, and power systems when life-cycle cost-effective. Agencies shall survey local natural resources to optimize use of available biomass, bioenergy, geothermal, or other naturally occurring energy sources.

(h) Off-Grid Generation. Agencies shall use off-grid generation systems, including solar hot water, solar electric, solar outdoor lighting, small wind turbines, fuel cells, and other off-grid alternatives, where such systems are life-cycle cost-effective and offer benefits including energy efficiency, pollution prevention, source energy reductions, avoided infrastructure costs, or expedited service.

Sec. 404. Electricity Use. To advance the greenhouse gas and renewable energy goals of this order, and reduce source energy use, each agency shall strive to use electricity from clean, efficient, and renewable energy sources. An agency's efforts in purchasing electricity from efficient and renewable energy sources shall be taken into account in assessing the agency's progress and formulating its score card.

(a) Competitive Power. Agencies shall take Agencies are encouraged to aggregate demand across facilities or agencies to maximize their economic advantage.

(b) Reduced Greenhouse Gas Intensity of Electric Power. When selecting electricity providers, agencies shall purchase electricity from sources that use high efficiency electric generating technologies when life-cycle cost-effective. Agencies shall consider the greenhouse gas intensity of the source of the electricity and strive to minimize the greenhouse gas intensity of purchased electricity.

(c) Purchasing Electricity from Renewable Energy Sources.

(1) Each agency shall evaluate its current use of electricity from renewable energy sources and report this level in its annual report to the President. Based on this review, each agency should adopt policies and pursue projects that increase the use of such electricity. Agencies should include provisions for the purchase of electricity from renewable energy sources as a component of their requests for bids whenever procuring electricity. Agencies may use

savings from energy efficiency projects to pay additional incremental costs of electricity from renewable energy sources.

(2) In evaluating opportunities to comply with this section, agencies should consider: my Administration's goal of tripling nonhydroelectric renewable energy capacity in the United States by 2010; the renewable portfolio standard specified in the restructuring guidelines for the State in which the facility is located; GSA's efforts to make electricity from renewable energy sources available to Federal electricity purchasers; and EPA's guidelines on crediting renewable energy power in implementation of Clean Air Act standards.

Sec. 405. Mobile Equipment. Each agency shall seek to improve the design, construction, and operation of its mobile equipment, and shall implement all life-cycle cost-effective energy efficiency measures that result in cost savings while improving mission performance. To the extent that such measures are life-cycle cost-effective, agencies shall consider enhanced use of alternative or renewable-based fuels.

Sec. 406. Management and Government Performance. Agencies shall use the following management strategies in meeting the goals of this order.

(a) Awards. Agencies shall use employee incentive programs to reward exceptional performance in implementing this order.

(b) Performance Evaluations. Agencies shall include successful implementation of provisions of this order in areas such as Energy-Savings Performance Contracts, sustainable design, energy efficient procurement, energy efficiency, water conservation, and renewable energy projects in the position descriptions and performance evaluations of agency heads, members of the agency energy team, principal program managers, heads of field offices, facility managers, energy managers, and other appropriate employees.

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(c) Retention of Savings and Rebates. Agencies granted statutory authority to retain a portion of savings generated from efficient energy and water management are encouraged to permit the retention of the savings at the facility or site where the savings occur to provide greater incentive for that facility and its site managers to undertake more energy management initiatives, invest in renewable energy systems, and purchase electricity from renewable energy sources.

(d) Training and Education. Agencies shall ensure that all appropriate personnel receive training for implementing this order.

(1) DOE, DOD, and GSA shall provide relevant training or training materials for those programs that they make available to all Federal agencies relating to the energy management strategies contained in this order.

(2) The Federal Acquisition Institute and the Defense Acquisition University shall incorporate into existing procurement courses information on Federal energy management tools, including Energy-Savings Performance Contracts, utility energy-efficiency service contracts, ENERGY STAR[®] and other energy efficient products, and life-cycle cost analysis.

(3) All agencies are encouraged to develop outreach programs that in-

clude education, training, and promotion of ENERGY STAR? and other energy-efficient products for Federal purchase card users. These programs may include promotions with billing statements, user training, catalogue awareness, and exploration of vendor data collection of purchases.

(e) Showcase Facilities. Agencies shall designate exemplary new and existing facilities with significant public access and exposure as showcase facilities to highlight energy or water efficiency and renewable energy improvements.

PART 5—TECHNICAL ASSISTANCE

Sec. 501. Within 120 days of this order, the Director of OMB shall:

(a) develop and issue guidance to agency budget officers on preparation of annual funding requests associated with the implementation of the order for the FY 2001 budget;

(b) in collaboration with the Secretary of Energy, explain to agencies how to retain savings and reinvest in other energy and water management projects; and

(c) in collaboration with the Secretary of Energy through the Office of Federal Procurement Policy, periodically brief agency procurement executives on the use of Federal energy management tools, including Energy-Savings Performance Contracts, utility energy-efficiency service contracts, and procurement of energy efficient products and electricity from renewable energy sources.

Sec. 502. Within 180 days of this order, the Secretary of Energy, in collaboration with other agency heads, shall:

(a) issue guidelines to assist agencies in measuring energy per square foot, per unit of production, or other applicable unit in industrial, laboratory, research, and other energy-intensive facilities;

(b) establish criteria for determining which facilities are exempt from the order. In addition, DOE must provide guidance for agencies to report proposed exemptions;

(c) develop guidance to assist agencies in calculating appropriate energy baselines for previously exempt facilities and facilities occupied after 1990 in order to measure progress toward goals;

(d) issue guidance to clarify how agencies determine the life-cycle cost for investments required by the order, including how to compare different energy and fuel options and assess the current tools;

(e) issue guidance for providing credit toward energy efficiency goals for cost-effective projects where source energy use declines but site energy use increases; and

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(f) provide guidance to assist each agency to determine a baseline of water consumption.

Sec. 503. Within 1 year of this order, the Secretary of Energy, in collaboration with other agency heads, shall:

(a) provide guidance for counting renewable and highly efficient energy projects and purchases of electricity from renewable and highly efficient

energy sources toward agencies' progress in reaching greenhouse gas and energy reduction goals;

(b) develop goals for the amount of energy generated at Federal facilities from renewable energy technologies;

(c) support efforts to develop standards for the certification of low environmental impact hydropower facilities in order to facilitate the Federal purchase of such power;

(d) work with GSA and DLA to develop a plan for purchasing advanced energy products in bulk quantities for use in by multiple agencies;

(e) issue guidelines for agency use estimating the greenhouse gas emissions attributable to facility energy use. These guidelines shall include emissions associated with the production, transportation, and use of energy consumed in Federal facilities; and

(f) establish water conservation goals for Federal agencies.

Sec. 504. Within 120 days of this order, the Secretary of Defense and the Administrator of GSA, in consultation with other agency heads, shall develop and issue sustainable design and development principles for the siting, design, and construction of new facilities.

Sec. 505. Within 180 days of this order, the Administrator of GSA, in collaboration with the Secretary of Defense, the Secretary of Energy, and other agency heads, shall:

(a) develop and issue guidance to assist agencies in ensuring that all project cost estimates, bids, and agency budget requests for design, construction, and renovation of facilities are based on life-cycle costs. Incentives for contractors involved in facility design and construction must be structured to encourage the contractors to design and build at the lowest life-cycle cost;

(b) make information available on opportunities to purchase electricity from renewable energy sources as defined by this order. This information should accommodate relevant State regulations and be updated periodically based on technological advances and market changes, at least every 2 years;

(c) develop Internet-based tools for both GSA and DLA customers to assist individual and agency purchasers in identifying and purchasing ENERGY STAR[®] and other energy efficient products for acquisition; and

(d) develop model lease provisions that incorporate energy efficiency and sustainable design.

PART 6—GENERAL PROVISIONS

Sec. 601. Compliance by Independent Agencies. Independent agencies are encouraged to comply with the provisions of this order.

Sec. 602. Waivers. If an agency determines that a provision in this order is inconsistent with its mission, the agency may ask DOE for a waiver

of the provision. DOE will include a list of any waivers it grants in its Federal Energy Management Programs annual report to the Congress.

Sec. 603. Scope. (a) This order is intended only to improve the internal management of the executive branch and is not intended to create any right, benefit, or trust responsibility, substantive or procedural, enforceable by law by a party against the United States, its agencies, its officers, or any other person.

(b) This order applies to agency facilities in any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the United States has jurisdiction. Agencies with facilities outside of these areas, however, are encouraged to make best efforts to comply with the goals of this order for those facilities. In addition, agencies can report energy improvements made outside the United States in their annual report to the President; these improvements may be considered in agency scorecard evaluations.

Sec. 604. Revocations. Executive Order 12902 of March 9, 1994, Executive Order 12759 of April 17, 1991, and Executive Order 12845 of April 21, 1993, are revoked.

Sec. 605. Amendments to Federal Regulations. The Federal Acquisition Regulation and other Federal regulations shall be amended to reflect changes made by this order, including an amendment to facilitate agency purchases of electricity from renewable energy sources.

Sec. 704. “Exempt facility” or “Exempt mobile equipment” means a facility or a piece of mobile equipment for which an agency uses DOE-established criteria to determine that compliance with the Energy Policy Act of 1992 or this order is not practical.

Sec. 705. “Facility” means any individual building or collection of buildings, grounds, or structure, as well as any fixture or part thereof, including the associated energy or water-consuming support systems, which is constructed, renovated, or purchased in whole or in part for use by the Federal Government. It includes leased facilities where the Federal Government has a purchase option or facilities planned for purchase. In any provision of this order, the term “facility” also includes any building 100 percent leased for use by the Federal Government where the Federal Government pays directly or indirectly for the utility costs associated with its leased space. The term also includes Government-owned contractor-operated facilities.

Sec. 706. “Industrial facility” means any fixed equipment, building, or complex for production, manufacturing, or other processes that uses large amounts of capital equipment in connection with, or as part of, any process 30860 Federal Register/Vol. 64, No. 109/Tuesday, June 8, 1999/Presidential Documents or system, and within which the majority of energy use is not devoted to the heating, cooling, lighting, ventilation, or to service the water heating

energy load requirements of the facility.

Sec. 707. “Life-cycle costs” means the sum of the present values of investment costs, capital costs, installation costs, energy costs, operating costs, maintenance costs, and disposal costs, over the lifetime of the project, product, or measure. Additional guidance on measuring life-cycle costs is specified in 10 C.F.R. 436.19.

Sec. 708. “Life-cycle cost-effective” means the life-cycle costs of a product, project, or measure are estimated to be equal to or less than the base case (i.e., current or standard practice or product). Additional guidance on measuring cost-effectiveness is specified in 10 C.F.R. 436.18 (a), (b), and (c), 436.20, and 436.21.

Sec. 709. “Mobile equipment” means all Federally owned ships, aircraft, and nonroad vehicles.

Sec. 710. “Renewable energy” means energy produced by solar, wind, geothermal, and biomass power.

Sec. 711. “Renewable energy technology” means technologies that use renewable energy to provide light, heat, cooling, or mechanical or electrical energy for use in facilities or other activities.

The term also means the use of integrated whole-building designs that rely upon renewable energy resources, including passive solar design.

Sec. 712. “Source energy” means the energy that is used at a site and consumed in producing and in delivering energy to a site, including, but not limited to, power generation, transmission, and distribution losses, and that is used to perform a specific function, such as space conditioning, lighting, or water heating.

Sec. 713. “Utility” means public agencies and privately owned companies that market, generate, and/or distribute energy or water, including electricity, natural gas, manufactured gas, steam, hot water, and chilled water as commodities for public use and that provide the service under Federal, State, or local regulated authority to all authorized customers. Utilities include: Federally owned nonprofit producers; municipal organizations; and investor or privately owned producers regulated by a State and/or the Federal Government; cooperatives owned by members and providing services mostly to their members; and other nonprofit State and local government agencies serving in this capacity.

Sec. 714. “Utility energy-efficiency service” means demand side management services provided by a utility to improve the efficiency of use of the commodity (electricity, gas, etc.) being distributed. Services can include, but are not limited to, energy efficiency and renewable energy project auditing, financing, design, installation, operation, maintenance, and monitoring.

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THE WHITE HOUSE,

June 3, 1999.

Appendix #4

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The Insider, August 17, 2006

Inside the Pentagon

Vol. 22, No. 33, August 17, 2006

ARMY PLANS TO TEST RENEWABLE ENERGY PROTOTYPES IN IRAQ, AFGHANISTAN

The Army is moving ahead with plans to develop and test renewable energy systems in Iraq and Afghanistan next year, as it attempts to cut the time fuel convoys spend on roads where they are susceptible to attacks by insurgents, Inside the Pentagon has learned.

The service's Rapid Equipping Force, which exists to deliver technology and equipment quickly to soldiers in the field, will issue a broad agency announcement later this month for renewable and hybrid energy systems small enough to be shipped to remote operating bases and outposts, an official close to the effort told ITP last week.

"The BAA will solicit proposals for innovative off-the-shelf products to provide integrated concepts for power generation that will reduce the amount of fuel shipped to remote operating bases and observation posts in a theater of operations," Air Force Capt. Brian Smith, project officer for REF's renewable and hybrid energy research, said.

Awards for the "Transportable Hybrid Electric Power Stations" BAA are slated to be announced in late September, a REF spokeswoman told ITP this week. As envisioned, REF will buy six to eight renewable and hybrid energy systems for testing by troops in Iraq, Afghanistan and the United States, Smith said. The solicitation will follow a recent request for more renewable energy systems made by a top U.S. general in western Iraq (ITP, Aug. 10, p1).

Late last month, Marine Corps Maj. Gen. Richard Zilmer, the chief of Multi-National Force-West in al-Anbar province, submitted an urgent request calling on the Pentagon to send more renewable energy systems to the country because they could leverage resources like sunlight or wind to produce power for bases and outposts.

Commanders assert that tapping renewable energy sources would lessen dependence on fossil fuels -- a move that could reduce the amount of fuel convoys on the road and save lives. "A proposed alternate solution -- one that reduces the number of convoys while providing an additional capability to outlying bases -- is to augment our use of fossil fuels with renewable energy, such as photovoltaic solar panels and wind turbines, at our outlying bases," the request states. "By reducing the need for [petroleum-based fuels] at our outlying bases, we can decrease the frequency of logistics convoys on the road, thereby reducing the danger to our Marines, soldiers, and sailors."

MNF-W officials relied on research and data compiled by REF when formulating their request, according to Smith. REF's Transportable Hybrid Electric Power Stations project seeks to combine existing commercial and military technology in "new and unique ways," Smith said. Officials are interested in systems that are reliable, mobile and easy to set up and maintain, he added. Combining existing technologies like a military generator with a battery bank can reduce fuel consumption by 20 percent to 30 percent, according to an REF fact sheet.

Harnessing natural resources such as ample wind and sunlight in Iraq and Afghanistan may reduce fuel consumption by 30 to 60 percent, the document adds. REF will invest \$3 million in the prototypes to build, test, evaluate, ship and assess systems, Smith said. The funds also may go toward procuring more test systems and training personnel, he added.

Once REF receives feedback from operators in the field, the organization's leadership will decide if more money needs to be invested in the technology's spiral development -- or if system development and procurement should be transferred to another Army office, Smith said.

Although REF officials declined to say what available systems could meet requirements to be listed in the upcoming BAA, MNF-W in its request singled out a product called Mobile Power System (MPS) as one that could meet its needs.

The system is a renewable energy technology manufactured by Arlington, VA-based SkyBuilt Power. MPS "provides renewable energy solutions consisting of solar, wind, fuel cells, and micro-hydro power, with or without fuel-based systems," the MNF-W request states. The power station can be transported in a standard shipping container, which can then be used to support solar panels, wind turbines or gasoline generators, said Dave Muchow, president and CEO of SkyBuilt Power, told to ITP Aug. 8. Once the system is deployed, the transporting container could be used for a myriad of other, non-energy related functions, including housing a command and control center, he said.

In the MNF-W request, commanders said 183 such systems could meet the energy needs of troops in its area of operations. When the BAA awards are announced and development work begins, REF officials will attempt to improve existing systems to make them suitable for military users, Smith said.

Some of these efforts include reducing system setup times. REF is pursuing renewable and hybrid energy technology because such sources "get more bodies off the battlefield," Smith said. More than 70 percent of tonnage required to position the Army for battle is fuel according to a 2001 Defense Science Board study.

In addition to renewable energy systems, operators in Iraq and Afghanistan are calling on REF to adapt available technologies like folding solar cells and small, rechargeable batteries for military use, he said.

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Appendix #5

Department of Defense Studies and Relevant USDOE and DHS Papers

I have listed some of the more relevant studies for the House Armed Services Committee to review:

2006

Used Oil Re-refining Study to Address Energy Policy Act of 2005, Section 1938. US Department of Energy, Office of Fossil Energy. July 2006

Renewable and Distributed Energy as a Security Tactic, by Scott Sklar, President of The Stella Group, Ltd., Washington, D.C. , revised in July 2006

2005

DoD Renewable Energy Assessment. Report to Congress. Final Report, Department of Defense. March 14, 2005, and Implementation Plan, February 16, 2005.

National Infrastructure Protection Plan. Draft for Public Comments. US Department of Homeland Security. November 10, 2005 established from Interim NIPP issued February 2005.

Quantifying the Air Pollution Exposure Consequences of Distributed Energy Generation. University of California Energy Institute. Garvin A Heath, Patrick W. Granvold, Abigail S. Hoats, and William W. Nazaroff. May 2005 (note: focus on diesel gen sets, fuel cells, and microturbines).

2004

Renewable Role in Energy Security. By W. Michael Warwick, Pacific Northwest Labs, July 2004

Federal Energy and Water Management Award Winners. FEMP. US Department of Energy. October 28, 2004.

2003

Army Installation and Energy Security Plans. Office of Assistant Chief of Staff for Installation Management. September 2003.

Security Benefits of Renewable Energy. A Case Study. Prepared for US Air Force. Civil Engineering Support Agency Headquarters, under a related Services Agreement with the US Department of Energy. PNL/Batelle. Lu, Warwick, Steese, Arey, Dagle, Jarrell and Weimer. October 2003.

A Strategy: Moving America Away from Oil. Office of Net Assessment, Office of the Secretary of Defense. Department of Defense. Issued by The Arlington Institute. August 2003.

2001

More Capable War Fighting Through Reduced Fuel Burden. The Defense Science Board Task Force on Improving Fuel Efficiency of Weapons Platforms. January 2001.

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