

NEMA ASSESSMENT OF THE ENERGY POLICY ACT OF 2005

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OF 2005

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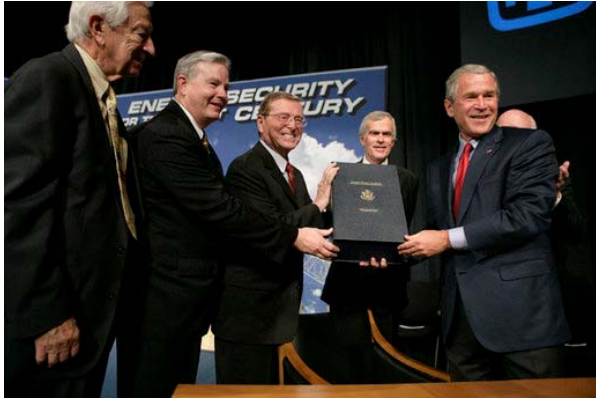
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Energy Efficiency and the Nation



President Bush holds the energy bill after signing H.R. 6, The Energy Policy Act of 2005.

ABOUT NEMA

For more than 75 years, the National Electrical Manufacturers Association has been the premier trade association for the electroindustry. NEMA's 400 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity. Annual domestic shipments of these products total over \$100 billion.

Because NEMA's product scope covers the entire electricity value chain, NEMA is in a unique position to champion appropriate energy solutions from generation, transmission, distribution, and efficiency of end-use products without favoring any particular technology over others.

NEMA EPAAct 2005 PROVISIONS

On August 8, 2005, President George Bush signed into law the Energy Policy Act of 2005 (H.R. 6; Public Law 109-58).

The Energy Policy Act of 2005 (EPAAct 2005) embodies numerous provisions advocated by NEMA during the four-year development of energy legislation. These provisions are good for the economy, the public, and NEMA members.

In 2001, NEMA issued a 14-page document entitled "An Approach to a Balanced Energy Plan," which laid out key NEMA objectives. NEMA was successful in securing inclusion of these provisions in the EPAAct 2005. Overall, they contain a balance among energy production, energy transport, and energy efficiency.

This publication summarizes and highlights provisions of interest to NEMA and the electroindustry.

NEMA ENERGY PRINCIPLES

Energy efficiency is a national concern and solutions should be driven by market forces.

NEMA's legislative advocacy was based on several guiding principles:

- A comprehensive electrical energy policy should rely on affordable, proven technology to address energy supply and demand.
- Market-based incentives and solutions should be the primary vehicle to enhance energy efficiency, production, and distribution, and conservation. NEMA acknowledges that, on a case-by-case basis, there is value in other interventions, such as targeted government research and development, incentives to invest in energy efficient technology, promotion of energy efficiency programs and standards, and removal of barriers to transmission grid improvement and increased generation capacity.
- An efficient electrical transportation network is needed to move energy from producer to consumer.

Energy Efficient Products



Energy efficient compact florescent lamps.

POSITION

NEMA supports federal government energy efficiency requirements based on industry consensus standards. As products are produced for national markets, standards, test procedures, and labeling must be uniform state to state.

NEMA EPAAct 2005 PROVISIONS

Energy efficiency is a national concern, and solutions should be driven by market forces. The litmus test for establishing mandatory national product and equipment efficiency standards is technological feasibility, economic justification, energy savings, and commercial availability.

The Energy Policy Act of 2005 Section 135 embodies new national energy efficiency standards for several NEMA products. NEMA developed these provisions in partnership with energy efficiency and environmental advocates. NEMA advocated the earliest practicable implementation date for these standards to maximize energy savings and preempt state standards in favor of uniform federal requirements.

Standards go into effect for products that were (1) manufactured on or after January 1, 2006, for illuminated exit signs, torchiere fixtures, traffic signals, pedestrian crosswalk modules, and medium-screw base compact fluorescent lamps; (2) manufactured on or after January 1, 2007, for low voltage dry-type distribution transformers; (3) manufactured on or after January 1, 2009, sold by a manufacturer on or after October 1, 2009, or incorporated into a luminaire on or after July 1, 2010, for energy saving fluorescent lamp ballasts. Mercury vapor lamp ballasts shall not be manufactured or imported after January 1, 2008. (See Appendix for a product rule chart, page 18.)

The 2006 effective dates were selected because the standards and test procedures are based on existing Energy Star® guidelines. The 2007 transformer date was chosen as being the earliest possible given the worldwide shortages of high-efficiency electrical core steels. The energy savings fluorescent lamp ballast requirements ensure that these T12 lamp ballasts are regulated. The mercury vapor ballast requirement was chosen as a practical means of increasing the efficiency of High Intensity Discharge (HID) lighting systems by phasing out the relatively low efficiency mercury vapor technology.

In addition to conservation standards, labeling requirements (EPAAct 2005 Section 137) would need to be established for these products. For transformers, NEMA Standard TP 3 is specified. For the remaining products, the Federal Trade Commission (consumer products) or the Department of Energy (commercial products) are directed to conduct rulemakings to promulgate appropriate product labeling and information disclosure requirements.

Effective on the date of enactment (August 8, 2005), states are preempted from establishing any new state regulations for these products. In those states where regulations already existed, the state rules are preempted upon the effective dates of the respective federal product standard.

Federal Leadership in Energy Efficiency



The Aerospace Center, an Energy Star® Building, at Washington D.C.'s L'Enfant Plaza.

POSITION

NEMA supports federal government efforts to set a good example of energy efficiency.

NEMA EPAAct 2005 PROVISIONS

The government should play a strong role to lead by example in the use and deployment of efficient products and systems. Government procurement of Energy Star® products has increased federal energy efficiency. The vast majority of existing federal facilities, however, have not yet achieved the Energy Star® rating, a classification given only to the top 25 percent of buildings in terms of watts used per square foot and, in general, federal building efficiency is not up to industry consensus standards.

The Energy Policy Act of 2005 embodies many of the provisions NEMA advocated.

These include requirements for new federal buildings to satisfy ASHRAE 90.1-2004, the newest version of this nonresidential building efficiency standard (EPAAct 2005 Section 109). EPAAct 2005 also encourages state and local government buildings to meet new versions of ASHRAE and IECC standards (EPAAct 2005 Section 125). EPAAct 2005 Section 104 requires federal procurement of Energy Star® products, FEMP-designated products, and NEMA Premium® electric motors.

EPAAct 2005 Section 102 sets energy efficiency goals for existing federal buildings that increase by two percent per year, reaching a 20 percent increase by 2015. This systemic approach to energy efficiency offers flexibility to use energy efficient technologies and increases the potential for significant energy savings more than simple procurement of Energy Star®-labeled equipment, though energy efficient equipment purchases are clearly a step in the right direction.

EPAAct 2005 Section 105 retroactively extends the Energy Savings Performance Program from October 1, 2003 to 2016. This program enables agencies to contract with the private sector (e.g., energy services companies) to finance energy efficiency upgrades with the achieved energy savings, thereby creating an “off budget” means of increasing efficiency.

Section 109 also requires the Secretary of Energy to issue rules for federal building energy efficiency performance standards that would set design requirements to achieve energy consumption levels that are at least 30 percent below the levels of the 2004 versions of ASHRAE and IECC standards, and to apply sustainable design principles to the siting, design, and construction of all new and replacement buildings.

The federal government is also authorized (Section 126) to make grants to state and local governments to improve energy efficiency and energy conservation at the local level.

Enhanced Building Efficiency



Four Times Square: The first building built in New York in the 1990s using modern energy efficiency guidelines.

POSITION

NEMA supports enhanced efficiency for residential, commercial, and industrial buildings based on the latest industry consensus standards.

NEMA EAct 2005 PROVISIONS

Building upgrades have the potential to produce significant energy savings. The following examples illustrate the potential savings that can be obtained through upgrades to building lighting systems alone.

The U.S. Department of Energy estimates that lighting accounts for 25 percent of all electricity consumed in the U.S., at a cost of more than \$37 billion annually. Technologies developed during the past decade, however, can help cut lighting costs 30 to 60 percent. An average household dedicates five to ten percent of its energy budget to lighting, while commercial establishments will spend up to 40 percent of their total energy budget on lighting.

Efficient lighting systems are comprised of efficient products and practices. Products may include efficient ballasts, luminaires,

lamps, occupancy sensors, and other types of lighting controls. Efficient practices include automatic daylight dimming, or “daylighting,” which incorporates a light sensor to measure the amount of illumination in a space to maintain the desired level of illumination.

EAct 2005 Section 1331 includes a commercial buildings tax deduction that provides up to \$1.80 per square foot deduction to building owners for buildings using 50 percent less energy than a building designed to ASHRAE 90.1-2001. Lighting systems, HVAC, and building envelope are each given a \$0.60 per square foot deduction for their contribution to the 50 percent savings. The provision applies to buildings placed in service from January 1, 2006 to December 31, 2007, inclusive. The deduction is available for qualifying new construction, renovation, and retrofit work.

The Treasury Department must issue regulations for the whole building deduction, but the bill provides special interim rules for lighting systems. Lighting can receive a \$0.30 to \$0.60 deduction for savings in the lighting power density from 25 to 40 percent respectively, with linear interpolation between 25 and 40 percent.

In addition, the provision is intended to allow credit for energy savings from design methods beyond those specified in 90.1, such as daylighting, automatic lighting controls, improved fan motor efficiency, variable speed controllers, fuel cells, and wiring with lower energy losses than typical building power distribution systems.

EAct 2005 Sections 1332 and 1333 include provisions for increasing residential homes and certain residential products. Section 1337 provides certain tax credits to businesses regarding installation of fuel cells, microturbine power, and solar energy.

Section 107 establishes an Advanced Building Efficiency Testbed program. This program, involving the Department of Energy and the General Services Administration, is aimed at development, testing, and demonstration of advanced systems, components, and materials to enable innovation deployment in building technologies.

Federal Leadership in the Use of Energy Efficient Motors



Replacing an inefficient motor.

POSITION

NEMA supports federal government procurement and specification of NEMA Premium[®] motors.

NEMA EPAAct 2005 PROVISIONS

EPAAct 2005 mandates the use of NEMA Premium[®] efficiency electric motors as the motors of choice for federal procurement. The NEMA standard raises the bar on energy efficiency and covers many more motor types and sizes (up to 500 horsepower) than “energy efficient” electric motors regulated by the 1992 Energy Policy Act.

The NEMA Premium[®] motor was developed in 2002 through a collaborative effort with the Department of Energy, the motor manufacturers’ Consortium for Energy Efficiency, electric utilities, and other industry groups. Using DOE data, experts estimate that the NEMA Premium[®] efficiency motor program could save over 5,800 gigawatt hours of electricity and prevent the release of nearly 80 million metric tons of carbon into the atmosphere over the next 10 years. That would be the equivalent of keeping 16 million cars off the road.

The provisions of EPAAct 2005 Section 104 that specify NEMA Premium[®] motors for federal procurement are the latest wins for consumers, manufacturers, and the environment, and were key ingredients in the successful implementation of the National Technology Transfer and Advancement Act (NTTAA) (Public Law 104-113) across the many industries.

In addition, section 161 of the Energy Policy Act of 1992, 42 U.S.C. 8262g, requires the inclusion of energy efficient products in the procurement practices of the federal government. Existing law requires the General Services Administration, the Department of Defense, and the Defense Logistics Agency to identify and designate energy efficient products that offer significant potential savings to the U.S. government, based on life cycle cost calculations. Further, the agencies are required to issue guidelines to encourage the procurement of identified energy efficient products.

Increasing the deployment of technologies similar to the NEMA Premium[®] rated motors throughout the federal government offers a ready means to significantly reduce energy consumption in federal facilities. Mandating the procurement of such products by the federal government will assure the most rapid possible introduction of new technologies that meet the advanced energy efficiency standards for electric motors.

Standby Power Devices



Modern kitchens contain many energy-efficient appliances that may be subject to the proposed “one-watt” rule.

POSITION

NEMA supports the creation of sensible standards for so-called “energy vampires” (electric-powered devices using standby power) based on sound research and consideration of market issues.

NEMA EPAAct 2005 PROVISIONS

As part of the increased electrification and automation of the home and workplace, numerous devices have been installed that individually use very small amounts of power, typically one to seven watts, when not in use. For example, VCRs contain timers that enable user programming, dishwashers include controls to start after a programmable delay so that energy may be used after the evening electric power peak, and cellular telephones have battery chargers that consume power after charging is finished.

To minimize these small amounts of power use that, when aggregated nationally could amount to significant power usage, the president and Congress considered setting a one-watt limit on power consumed by individual devices when in standby mode.

It was estimated that on the order of 5,000 products could be adversely impacted by a “one-watt” rule. NEMA, working with an industry coalition, advocated a reasoned approach on battery chargers and external power supply products. Congress was responsive to industry concerns.

EPAAct 2005 Section 135 requires DOE to conduct a rulemaking considering a number of factors. A rule on definitions and test procedures is due 18 months after August 8, 2005, and a rule as to whether standards are appropriate is due three years after August 8, 2005. Part of the process includes a “scoping study” to assess what products should and should not be considered in the rulemaking.

Increased Transmission Capacity



Electrical transmission lines in front of a coal-fired power plant.

POSITION

NEMA supports the use of technology to enhance the capacity, efficiency, and reliability of the interstate transmission grid. NEMA has advocated favorable rate treatment for low public impact technologies.

NEMA EAct 2005 PROVISIONS

The EAct 2005 is based on NEMA's efforts in this area called "advanced transmission technologies," which the Federal Energy Regulatory Commission (FERC) is directed to encourage. Quoting from EAct 2005 Section 1223:

(a) DEFINITION OF ADVANCED TRANSMISSION TECHNOLOGY—In this section, the term "advanced transmission technology" means a technology that increases the capacity, efficiency, or reliability of an existing or new transmission facility, including:

(1) high-temperature lines (including superconducting cables);

- (2) underground cables;
- (3) advanced conductor technology (including advanced composite conductors, high-temperature low-sag conductors, and fiber optic temperature sensing conductors);
- (4) high-capacity ceramic electric wire, connectors, and insulators;
- (5) optimized transmission line configurations (including multiple phased transmission lines);
- (6) modular equipment;
- (7) wireless power transmission;
- (8) ultra-high voltage lines;
- (9) high-voltage DC technology;
- (10) flexible AC transmission systems;
- (11) energy storage devices (including pumped hydro, compressed air, superconducting magnetic energy storage, flywheels, and batteries);
- (12) controllable load;
- (13) distributed generation (including photovoltaic, fuel cells, and microturbines);
- (14) enhanced power device monitoring;
- (15) direct system state sensors;
- (16) fiber optic technologies;
- (17) power electronics and related software (including real time monitoring and analytical software);
- (18) mobile transformers and mobile substations; and
- (19) any other technologies the commission considers appropriate.

NEMA also urged Congress to ensure that the Department of Energy's Transmission Reliability program, which is devoted to developing technologies and policy options that maintain and enhance reliability, is adequately funded and applied in a manner that complements and encourages private sector efforts.

Rate Incentives



Power transmission lines.

POSITION

NEMA supports, through the use of rate incentives such as increased rate of return, assurance that investments in new transmission facilities will be recovered.

NEMA EPAAct 2005 PROVISIONS

NEMA encourages incentives for transmission investment. NEMA believes incentive- or performance-based rates should be used to encourage transmission investments so that suppliers and customers both win.

Congress has been responsive to NEMA's comments, and EPAAct 2005 Section 1241 includes a requirement for the Federal Energy Regulatory Commission (FERC) to issue a rule on incentive and performance-based rates within a year after August 8, 2005.

The rule will promote capital investment in the enlargement, improvement, maintenance, and operation of interstate transmission. It will provide a rate of return that attracts new investment (including related transmission technologies). It will allow recovery of costs necessary for compliance with mandatory reliability standards and federal siting.

Annual investments in transmission infrastructure have been decreasing at a rate of almost \$120 million per year for the last 25 years. Recently, investments in generation and the associated connections to the transmission system have picked up; however, investments in the bulk long-distance transmission are not being made due to the high risk and inadequate potential return for investors.

In part to encourage the efficient expansion of the transmission system, and to ensure regulatory certainty, FERC issued a series of new regulations designed to facilitate the development of regional transmission organizations (RTOs). In FERC Order 2000 and the follow-up 2000A, RTOs would be responsible for, among other things, transmission planning and expansion consistent with applicable state and local siting regulations. The new regulations call for transmission rate incentives designed to facilitate the development of new transmission facilities.

Accelerated Depreciation for Transmission and Distribution Assets



A transformer on a utility pole.

POSITION

NEMA supports reducing the tax depreciation period for transmission and distribution assets to seven years from the current twenty years.

NEMA EPAct 2005 PROVISIONS

NEMA believes it is very important that the government provide tax incentives for transmission and distribution upgrades.

EPAct 2005 Section 1308 reduces the tax life of transmission assets 69 kV or over contracted for and placed in service after April 11, 2005, from 20 to 15 years.

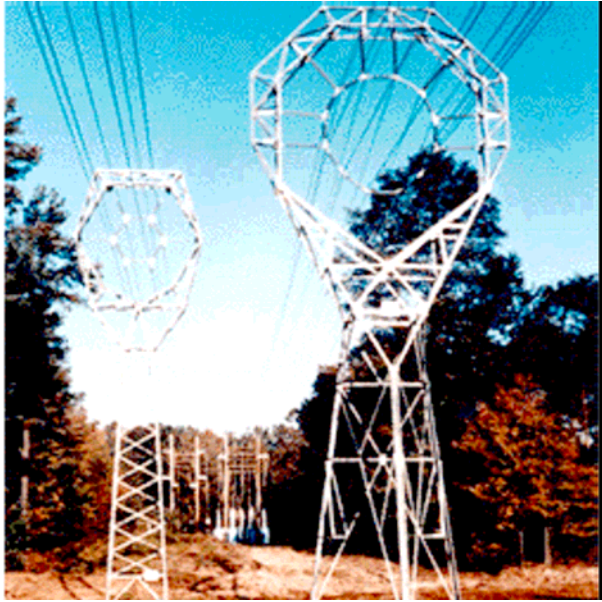
Along with the rate incentives, federal siting, and mandatory transmission reliability standards, this provision should significantly improve transmission investment.

In the deregulated market, independent generators are experiencing a payback period of three to five years on new generation equipment. In contrast, transmission investments currently have payback periods of about 30 years.

As previously stated, annual investments in transmission have been falling for the last 25 years. Electric transmission is the vital link between the customer and the generator. Indeed, some of the 2001 blackouts in California occurred because of transmission shortfalls at times when adequate generation was available in California, but could not be wheeled to load centers.

The benefits of deregulation—lower electricity prices and the availability of renewable and distributed generation—cannot happen without adequate transmission capacity.

Removal of Siting and Permitting Impediments



High-phase AC transmission lines.

POSITION

NEMA supports the removal of siting and permitting impediments that currently serve as a barrier to the construction of new transmission facilities.

NEMA EPAAct 2005 PROVISIONS

Congress has been responsive to NEMA concerns about siting, and EPAAct 2005

Section 1221 includes federal backstop siting when states have failed to act. FERC is directed to promulgate requirements for the permit application. DOE is given the lead responsibility for environmental review. DOE must, within a year of enactment, identify national interest transmission corridors that must satisfy a number of conditions.

This will be a complex process and would likely be invoked only in rare situations.

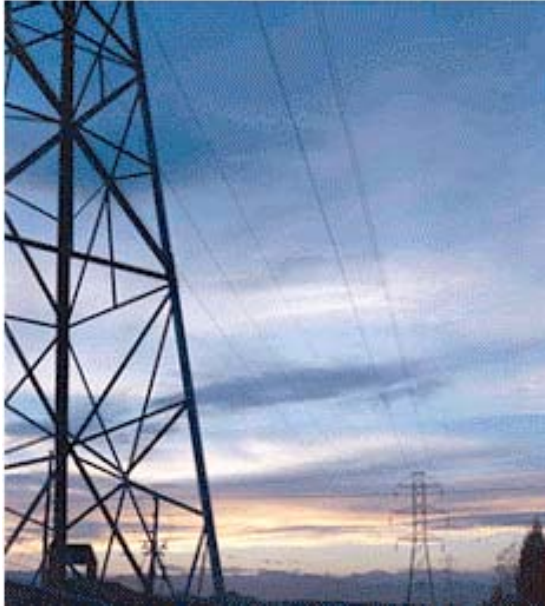
In the past, transmission lines were built primarily to meet state requirements to serve a utility's native loads.

State commissions and local authorities are less likely to authorize the development and construction of new transmission facilities if they are used for purposes that do not directly benefit a particular utility's customers or a given regulator's constituents. Transmission line additions have been held up for many years by the siting process. Examples include a 765-kV AEP line through Virginia and West Virginia and a 500-kV line between Georgia and Florida.

New transmission facilities in most locations, however, are no longer likely to be used to directly benefit a certain customers or a constituents, but for other purposes, such as the support of regional or multi-state power markets.

In FERC Order 2000 and the follow-up 2000A, regional transmission organizations (RTOs) would be responsible for, among other things, transmission planning and expansion consistent with applicable state and local siting regulations. The commission requires RTOs to accommodate state efforts to create multistate agreements to review and approve new transmission facilities.

Mandatory Transmission Reliability Standards



Electric power transmission lines at sunset.

POSITION

NEMA supports the establishment of a self-regulated entity that establishes and enforces mandatory transmission reliability standards.

NEMA EPAAct 2005 PROVISIONS

NEMA supports enforceable and mandatory reliability standards to ensure that the interstate transmission grid is operated in a manner that maintains and improves system reliability. NEMA worked with an industry coalition on this issue.

Congress was again responsive to industry concerns, and EPAAct 2005 Section 1211 includes mandatory and enforceable transmission reliability standards.

Currently, the utility industry operates under voluntary standards established by the North American Electric Reliability Council (NERC). They address the planning, engineering, and operation of electric systems. Utilities have generally adhered to NERC's guidelines based on a collective concern for the reliable operation of the interstate transmission grid. While awaiting legislation, FERC enforced NERC standards via the Open Access Transmission Tariff. This was not applicable to all transmission providers, however. EPAAct 2005 expands FERC's authority for transmission reliability oversight, filling many of the gaps.

EPAAct 2005 calls for the establishment of an electric reliability organization (ERO) with FERC oversight. Although the ERO cannot direct utilities to add generation or transmission assets, reliability standards must be satisfied in regional transmission plans.

PURPA Revisions (Distributed Generation, Metering, and Demand Response)



Biomass electric plant in Anderson, California.

POSITION

NEMA supports interconnection standards for distributed generators that fairly consider the interests of utilities and generators. NEMA advocates interconnection standards based on the Institute of Electrical and Electronic Engineers (IEEE) 1547 *Standard for Interconnecting Distributed Resources with Electric Power Systems*. NEMA advocates market-based rates for new Public Utility Regulatory Policy Act (PURPA) power contracts, smart meters, and time-differentiated rates that reflect costs.

NEMA EPCa 2005 PROVISIONS

EPCa 2005 addresses these issues through revisions to PURPA, which gives state regulators substantial flexibility in carrying out federal guidance. Consequently, these EPCa 2005 provisions will be carried out by the states to varying degrees, and NEMA involvement will be needed in key states.

NEMA believes transmission and local distribution companies should be required to interconnect with a generating facility meeting national standards. Congress has been responsive, and EPCa 2005 Section 1254 requires utilities to provide interconnection services in accordance with IEEE 1547.

Because utility deregulation has lowered wholesale rates in many areas, the avoided-cost criteria established by PURPA can result in contract costs substantially exceeding market-based rates. For situations where specified criteria for an open market exist, prospective PURPA generator contracts will be at market-based rates.

NEMA has advocated time-differentiated rates, smart meters that can record and communicate time-differentiated usage, and technology that enables customers to act to reduce or time-shift usage. Working together, these can result in reduced cost to customers and more efficient use of utility resources.

Besides its dealings with Congress, NEMA has been involved in many other forums on distributed power, demand response, and smart metering. NEMA is a member of the PJM Interconnection working group that prepared interconnection standards for generators up to 2 MWe; this standard was approved by FERC. Within a month of a meeting at NEMA on product certification, FERC issued Order 2006, its rule for small generator interconnection (up to 20 MWe).

NEMA continues to work with PJM Interconnection, the regional transmission organization covering Pennsylvania, New Jersey, Maryland, the District of Columbia, Delaware, and parts or all of nine additional states, and state regulators to break down barriers to deployment of distributed power and to advocate implementation of advanced metering programs.

Research & Development



An array of high brightness light emitting diodes.

POSITION

NEMA supports targeted energy research and development of new technology.

NEMA EPAAct 2005 PROVISIONS

The research, development, demonstration, and commercial application provisions of EPAAct 2005 that are of interest to the industry include:

Section 911 – Energy Efficiency

Program for advanced control devices to improve the energy efficiency of electric motors, including those used in industrial processes, heating, ventilation, and cooling.

Program to improve energy efficiency and environmental performance, using a whole buildings approach, including onsite renewable energy generation.

Section 912 – Next Generation Lighting Initiative

Program for advanced solid state lighting technologies based on white-light emitting LEDs and OLEDs. Creation of an industry alliance to guide DOE research and

development work, and provision of preferred intellectual property for alliance members. (NEMA administers the industry alliance under this provision.)

Section 913 – National Building Performance Initiative

Federal interagency initiative to develop recommendations to Congress by August 8, 2006, on how to integrate public and private sector efforts to reduce the cost of construction, operation, maintenance, and renovation of buildings. Automated building controls and systems are specifically to be included.

Section 914 – Building Standards

National Institute of Building Sciences to (1) prepare assessment in cooperation with industry and trade associations on whether the current voluntary consensus standards and rating systems for high performance buildings are consistent, given the state of technology, and (2) to develop steps to accelerate standards development, including the use of grants and technical assistance.

Section 915 – Secondary Electric Vehicle Battery Use Program

Program to demonstrate the use of batteries in secondary applications, including utility and commercial power storage and power quality. DOE to solicit and select private sector proposals for this program.

Section 917 – Advanced Energy Efficiency Technology Transfer Centers

DOE to provide grants to nonprofit institutions, universities, and state and local governments to operate technology transfer centers that would provide education and outreach to building and industrial professionals on deployment and application of advanced energy technologies. Manufacturers are specifically mentioned as stakeholders that should be part of an advisory committee.

Section 921 – Distributed Energy and Electric Energy Systems

Authorizes funding to improve the reliability and efficiency of distributed energy systems and high voltage transmission lines, as well as integration of technologies with the grid.

Section 925 – Electric Transmission and Distribution Programs

These programs include advanced transmission and distribution technologies that enhance reliability, operational flexibility, or power-carrying capability; demand response; metering; enhancement of existing grid components; high temperature superconductors; and advanced grid tools for operation and planning.

This section also includes a Power Delivery Research Initiative to develop facilities with manufacturers to test components that incorporate high temperature superconductors.

Section 975 – Solid State Lighting

This section authorizes the establishment of a fundamental research center in support of Section 912 core technology and product development in solid state lighting.

Other Provisions



Energy Star®

EPA 2005 Section 131 formally recognizes the federal Energy Star® voluntary program to identify and promote energy efficiency products and buildings through labeling. This program is operated jointly by the DOE and the Environmental Protection Agency (EPA).

The Energy Star program has been in existence for many years, but was never formally established by Congress. Section 131 will improve the transparency in setting the performance specifications for Energy Star designation, provide for appropriate lead time for industry to adjust to new or revised product specifications, and to preserve the integrity of the Energy Star label.

NEMA products in the Energy Star program include exit signs, residential lighting fixtures, medium screw-based compact fluorescent lamps, programmable thermostats, and distribution transformers. NEMA members are also involved in the Energy Star Buildings and Energy Star Homes programs.



Energy Studies and Reports

The Energy Policy Act of 2005 also directs the federal government to conduct a number of special studies on various issues. Many of these studies are of interest to NEMA, and may lead to new programs that would have an impact on the electroindustry. They include the following:

Section 138 – Intermittent Escalators

The General Services Administration (GSA) is to submit a report to Congress by August 8, 2006, on the advantages and disadvantages of employing intermittent escalators in the U.S. The report is to include analysis of energy end-cost savings and reduced maintenance requirements using escalators that are in a stationary position and are automatically operated at the approach of a passenger, and then returning to a stationary position after the passenger completes passage. The technology involved includes electric motors and advanced control and sensing systems.

Section 141 – Failure to Meet Deadlines for New or Revised Energy Efficiency Standards

DOE is to submit an initial report to Congress by January 8, 2006, regarding each new or revised energy efficiency standard that DOE has failed to issue in conformance to statutory deadlines. The report is to include reasons why DOE has missed the deadlines and set forth DOE's plan to address the problem. Every six months following the initial report, DOE is to

submit a report describing the progress in implementing the plan or issuance of new and revised standards.

Section 1802 – Study of Energy Efficiency Standards and Site versus Source

DOE and the National Academy of Sciences are to conduct a study by August 8, 2006, to examine whether the goals of the energy efficiency standards program are best served by measurement of energy consumed at the actual site of energy consumption or beginning at the source of energy production. Current energy efficiency standards are generally based on reduction of energy at consumption.

Section 1807 – Energy Integration with Latin America

DOE is to submit an annual report to the Congress on the status of energy export development in Latin America. The report is to describe federal efforts to promote energy integration with Latin America, as well as regulatory programs and expansion of Mexico's energy capacity.

Section 1816 – Rapid Electrical Grid Restoration

The DOE is to submit a report to Congress by August 8, 2006, on the benefits of using mobile transformers and mobile substations to rapidly restore electrical service to areas subjected to blackouts resulting from natural disasters, terrorism, and equipment failure. Areas for power restoration focus include military bases, federal government offices, communication industries, and first responders.

Section 1817 – Distributed Generation

DOE and FERC are to conduct a study of the potential benefits of cogeneration and small power production by 18 months after August 8, 2005, and submit it to Congress and the president. The study is to include analysis of system reliability, power quality, reduction of peak power requirements, provision of reactive power or volt-ampere reactive, offsets in generation, and transmission or distribution facilities that would otherwise be recovered through rates.

Federal Agency Milestones for Electrical Infrastructure

Milestone (EPAAct 2005 Section)	Due Date
Federal Energy Regulatory Commission (FERC) rule on mandatory and enforceable transmission standards and Electric Reliability Organization (Section 1211)	180 days after 8/8/05
Department of Energy (DOE) and FERC report on transmission system monitoring (Section 1839)	6 months after 8/8/05
DOE 5-year transmission & distribution program plan (Section 925)	One year after 8/8/05 and a progress report two years after the plan
DOE identification of national interest electric transmission corridors (Section 1221)	One year after 8/8/05 and every 3 years thereafter
DOE Memorandum of Understanding with federal agencies on environmental review of federal transmission siting (Section 1221)	One year after 8/8/05
FERC rule for contents of federal transmission siting application (Section 1221)	Not specified
FERC rule on incentive-based transmission rates (Section 1241)	One year after 8/8/05
DOE study on rapid grid restoration by mobile transformers and substations (Section 1816)	One year after 8/8/05
DOE regulations on environmental review of federal transmission siting application (Section 1221)	18 months after 8/8/05
DOE study on cogeneration and small power production (Section 1817)	18 months after 8/8/05

Timetable of Products Rulemaking: EPACT 2005

NEMA Product	What is the operable federal standard?	What is the effective date of the federal standard?	What is the testing procedure?	What is the labeling/ disclosure of information effective date?	Other Information
Medium Screw-Based Compact Fluorescent Lamps (CFLs)	Codification of Energy Star 2.0 specification standard	Manufactured on or after January 1, 2006	Energy Star as of August 9, 2001 (2.0 specification)	DOE or FTC may prescribe a label; but no statutory deadline established.	Initial performance requirements are set by statute; DOE requirements as described by statute.
Illuminated Exit Signs	Codification of Energy Star 2.0 specification	Manufactured on or after January 1, 2006	Energy Star 2.0	DOE or FTC may prescribe a label; but no statutory deadline established.	
Mercury Vapor Ballasts	Not applicable	Can no longer be manufactured or imported effective January 1, 2008.	Not applicable	Product phase-out, so no label is required.	
Low Voltage Dry-Type Distribution Transformers	NEMA TP 1-2002 standard	Manufactured on or after January 1, 2007	NEMA TP 2 testing standard	NEMA TP 3 labeling standard	
Fluorescent Ballasts for "Energy Saving" T12 Lamps	Specific Ballast Efficacy Factors (BEFs) are contained in the law	Ballast manufactured on or after January 1, 2009; sold by a ballast manufacturer October 1, 2009; incorporated into a luminaire July 1, 2010.	See 10 CFR 430	Current ballasts required to be labeled with a Circle "E"; rule may be needed to clarify additional EPACT 2005 ballasts.	Expands coverage from the 2000 DOE Ballast Rule to include ballasts for energy saving T12 lamps (e.g., F34T12).
Pedestrian Cross Walk Modules	Codification of the Energy Star 1.1 specification	Manufactured on or after January 1, 2006	Energy Star 1.1	DOE and/or FTC may prescribe a label; but no statutory deadline established.	CalTrans standard in effect in CA only; CA exempt from federal standard.
Traffic Signal Heads	Codification of the Energy Star 1.1 specification	Manufactured on or after January 1, 2006	Energy Star 1.1	DOE and/or FTC may prescribe a label; but no statutory deadline established.	CalTrans standard in effect in CA only; CA exempt from federal standard.
Torchiere Fixtures	Shall consume not more than 190 watts of power and shall not be capable of operating with lamps that total more than 190 watts.	Manufactured on or after January 1, 2006	Not applicable	DOE and/or FTC may prescribe a label; but no statutory deadline established.	

NOTE: Federal preemption for the NEMA products in the table is effective upon date of enactment (August 8, 2005). In those states that have standards prior to August 8, 2005 on these newly added federal products, federal preemption is effective upon the date that the federal standard takes effect.