Regional Cooperation in Energy Efficiency Standard-Setting and Labeling in North America

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ABSTRACT

The North American Energy Working Group (NAEWG) was established in 2001 by the governments of Canada, Mexico, and the United States. The goals of NAEWG are to foster communication and cooperation on energy-related matters of common interest, and to enhance North American energy trade and interconnections consistent with the goal of sustainable development, for the benefit of all three countries. At its outset, NAEWG established teams to address different aspects of the energy sector. One, the Energy Efficiency Expert Group, undertook activity in three areas: 1) analyzing commonalities and differences in the test procedures of Canada, Mexico, and the United States, and identifying specific products for which the three countries might consider harmonization; 2) exploring possibilities for increased mutual recognition of laboratory test results; and 3) looking at possibilities for enhanced cooperation in the Energy Star voluntary endorsement labeling program.

To support NAEWG's Expert Group on Energy Efficiency (NAEWG-EE), USDOE commissioned Lawrence Berkeley National Laboratory, representing the Collaborative Labeling and Appliance Standards Program (CLASP), to prepare a resource document comparing current standards, labels, and test procedure regulations in Canada, Mexico, and the United States. The resulting document identified 46 energy-using products for which at least one of the three countries has energy efficiency regulations. Three products – refrigerators/freezers, room air conditioners, and integral horsepower three-phase electric motors – have identical minimum energy performance standards (MEPS) and test procedures in the three countries. Ten other products have different MEPS and test procedures, but have the near-term potential for harmonization. NAEWG-EE is currently working to identify mechanisms for mutual recognition of test results. With consultative support from the United States and Canada through NAEWG-EE, Mexico is exploring possibilities for extending the Energy Star endorsement label to Mexico.

1.0 BACKGROUND

1.1 Formation of NAEWG

In the spring of 2001, US President Bush, Mexican President Fox, and Canadian Prime Minister Chretien agreed to the creation of a North American Energy Initiative, which evolved into the North American Energy Working Group (NAEWG). NAEWG, led by the Secretaries of Energy from Mexico and the United States and the Minister of Natural Resources Canada (NRCan), was created with the broad goals of fostering communication and cooperation among the governments and energy sectors of the three countries; enhancing North American energy trade, development, and interconnections; and promoting regional integration and increased energy security for the people of North America. Specifically, NAEWG is designed to explore policies, regulations, and technological innovations to encourage resource development, energy efficiency, renewable energy, clean power, and nuclear energy. This cooperative process fully respects the domestic policies, divisions of jurisdictional authority, and existing trade obligations of each country. NAEWG's goals clearly support those of the North American Free Trade Agreement (NAFTA), which had been signed by the three countries nine years earlier.

After its first meeting (Washington, D.C., June 2001), NAEWG formed expert groups to gather information on the potential for joint cooperation in three focal areas: (1) development of a North American energy perspective on supply, demand, and infrastructure (the US is the lead), (2) electricity restructuring and reliability (Canada is the lead), and (3) energy efficiency, with an emphasis on standards and related issues (Mexico is the lead). After the second NAEWG meeting (Ottawa, December 2001), a fourth expert group was formed to consider science and technology, with a focus on clean technology. The Energy Efficiency Expert Group (NAEWG-EE or Expert Group) is comprised of a representative and supporting staff from NRCan, the Mexican Secretariat of Energy, and the U.S. Department of Energy (USDOE).

1.2 NAEWG's Attention to Energy Efficiency

On a regional level, the NAFTA has had a positive impact on the development of a North American market for efficient products. A large number of products in North America are manufactured in one country and installed and used in others. In Canada, Mexico, and the United States, domestic programs relating to energy-efficiency testing, labeling and, standards are key elements in support of each country's goals in such areas as energy security, environmental protection, and economic growth. These programs, implemented in varying ways and within different institutional contexts, have been highly effective in reducing energy intensity in North America, and have supported growing markets for energy-efficient products and services.

However, different requirements in test procedures, comparative labeling, endorsement labeling, and minimum energy performance standards (MEPS) have the potential to result in unnecessary barriers to trade within the region. NAEWG-EE has taken on the task of exploring possibilities for enhanced cooperation among the three countries to identify ways by which increased dialogue and closer cooperation on energy efficiency programs can guide the development of programs in the region. By collaborating, the three countries hope to reduce the costs of compliance with standards and mandatory labeling programs in the region, accelerate the replacement of less-efficient products, and facilitate the transformation of the regional market for energy-efficient products. (NAEWG 2002)

1.3 Energy Efficiency Standards and Labeling (S&L) Programs in Canada, Mexico, and the U.S.

Canada, Mexico, and the United States each have substantial experience with energy efficiency test procedures, standards, labels, and associated compliance programs. Some elements of these programs are common to the three countries and some are not.

Canada: Labeling commenced in Canada in 1978 as part of the *Consumer Packaging and Labelling Act*. Regulations require that manufacturers of major electrical household appliances to be sold in Canada test these appliances for energy consumption and show the monthly energy consumption of each model on a standardized, round EnerGuide label. NRCan administers the national comparative labeling program. The *Energy Efficiency Act* passed in Canada in 1992 provides for the making and enforcement of regulations concerning MEPS for energy-using products. The first regulations under the Act came into effect in 1995. In 2001, Canada joined the International Energy Star endorsement labeling program. As part of this program, Canada (through NRCan) and other partner countries recognize and promote the criteria and logo established under the USA Energy Star scheme.

Mexico: Mexico's mandate for energy efficiency standards comes from a generic law, the Ley Federal Sobre Metrología y Normalización of July 16, 1992, which defines two types of standards: voluntary Normas Mexicanas - NMX (Mexican Standards) and mandatory Normas Oficiales

Mexicanas - NOM (Official Mexican Standards). The NOM are enacted by the Federal Secretariats, according to their areas of responsibility. In the case of energy efficiency, the Energy Secretariat enacts the mandatory standards. . To operate the standards system, the Law established a set of public and private organizations. The National Energy-Saving Commission (CONAE), a public agency under the Secretariat of Energy, is in charge of verifying compliance with the NOMs. Under Mexican law and as an element of the standards, CONAE also implements a mandatory comparative labeling program. In 1995, Mexico also introduced the Sello FIDE, a voluntary energy efficiency endorsement seal given by the Trust Fund for Electrical Energy Saving (FIDE).

United States: After the 1975 Energy Policy Conservation Act (EPCA) directed the USDOE to develop *voluntary* appliance efficiency targets, the National Energy Conservation Policy Act of 1978 (NECPA) directed USDOE to set *mandatory* minimum energy performance standards and gave federal standards preemption over state standards. It also required the Federal Trade Commission (FTC) to mandate comparative labels that indicate energy consumption for appliances. Subsequent legislation in 1987, 1988, and 1992 specified the minimum standard levels for the twenty-one categories of appliances. It instructed USDOE to set standards for additional products, if technically feasible and economically justified, and to review and update the standards to keep pace with technological improvements. The 1992 Energy Policy Act (EPAct) also directed USDOE to support a voluntary office equipment labeling program (Energy Star). Energy Star is a joint effort with USDOE and the US Environmental Protection Agency (USEPA); each acts as lead agency for a specific set of products.

1.4 NAEWG-EE's Focus on S&L Harmonization

The NAEWG Energy Efficiency Expert Group first convened in Mexico City on August 31, 2001. Participants included representatives from CONAE, NRCan, and USDOE. With the concurrence of the other two parties, USDOE commissioned Lawrence Berkeley National Laboratory, representing the Collaborative Labeling and Appliance Standards Program (CLASP)[1], to provide technical assistance to the Expert Group.

At the request of the Expert Group in preparation for its first meeting, CLASP prepared a esource document comparing current MEPS, labels, and test procedure regulations in the three countries. Much of the background information for the resource document was provided by Energy Efficient Strategies, Australia, in its review of test procedures in APEC economies conducted for the APEC Secretariat (Harrington 1999 and 2001). The content of the resulting document is summarized in a paper presented at the ACEEE 2002 Summer Study (Wiel et al., 2002).

At the August 2001 meeting, the Expert Group drafted a work plan for Canada, Mexico, and the United States to cooperate on energy efficiency programs. The Expert Group identified five elements as being within the scope of the Expert Group's objectives: test procedures, mutual recognition of laboratory results, voluntary endorsement labels, mandatory comparison labels, and MEPS. The NAEWG-EE work plan concentrated initially on the first three of these elements.

[1] CLASP, formed in 1999, is a collaboration among LBNL, the Alliance to Save Energy, and the International Institute for Energy Conservation (IIEC). CLASP's sole mission is to promote the appropriate use of energy efficiency standards and labels for appliances, equipment, and lighting in developing and transitional countries. More information available at www.clasponline.org.

Subsequent activities of the Experts Group have included three more meetings and frequent telephone conferences. The group operates entirely on full consensus among its three members. The Expert Group identified stakeholder participation as a key issue in the continuation of the process. All three countries have solicited the input of their domestic stakeholders on the harmonization of test procedures and endorsement labels, and mutual recognition of test results. Stakeholders generally have expressed positive support for continuing cooperation.

Near the end of 2002, NAEWG published *North American Energy Efficiency Standards and Labeling*, reporting on the NAEWG-EE's activities and results to date. The report contains a description of the legal basis and institutions for energy efficiency standards and labels and the national procedures and protocols for the development of mandatory and/or voluntary MEPS and labels in each of the three countries. It also contains a description of the status of energy efficiency standards and labels in each country, identifying which products already have similar MEPS and test procedures in the three countries, and which products potentially could be harmonized in the short term. Finally, the report discusses the activities of the Expert Group through 2002 (NAEWG 2002). The report is available on the web at http://www.eere.energy.gov/buildings/appliance_standards/ (under "News").

2.0 HARMONIZATION ACTIVITIES AND STATUS

2.1 Comparison of MEPS and Test Procedures

There are 46 energy-using products for which at least one of the three countries has energy efficiency regulations. Three products – refrigerators/freezers, room air conditioners, and integral horsepower three phase electric motors – have identical MEPS and test procedures in the three countries. Ten other products have different MEPS and test procedures, but have the near-term potential for harmonization. There are ten products with different MEPS and test procedures, but which have the near-term potential to develop common MEPS, test procedures, and/or labels.

2.2 Harmonization of MEPS and Test Procedures

At the time of the first NAEWG-EE meeting, the Expert Group identified the MEPS for refrigerators/freezers, split system central air conditioners, and room air conditioners as "similar or identical" in the three countries; and the test procedures for these same three products, as well as three-phase motors, as "similar or identical" throughout the region.

NAEWG-EE undertook to verify that the test procedures for refrigerators and freezers, room air conditioners, and integral horsepower electric motors were identical. Line-by-line comparisons showed each product test procedure to be identical in all three countries, except for a few wording differences. Subsequent clarifications found that the wording differences either resulted from the translation between English and Spanish or were otherwise insignificant.

During the year and a half after the first Expert Group meeting, updates in Mexico's standards for room air conditioners and electric three-phase motors (coming into effect in 2003) effectively harmonized the MEPS for these two products across all three countries. A third product, refrigerators, will join this list in May 2003, when Mexico's new standard takes effect and harmonizes Mexico's MEPS for refrigerators with those in the US and Canada. Mexico had already intended this harmonization, and whether or not NAEWG-EE's attention sped Mexico's harmonization of the three products remains a matter of speculation.

2.3 Mutual Recognition of Test Results

Canada, Mexico, and the United States have independent but, by the nature of their closely-linked economies and electrical safety requirements, already-integrated product certification processes. The Expert Group investigated mechanisms for mutual recognition of test results among the three countries, looking for assurance that any duplicative testing required was not an indirect trade barrier. Each country has solicited the input of its domestic stakeholders on the harmonization of test procedures and mutual recognition of test results.

2.4 Consideration of Participation in Energy Star by Mexico

The USEPA introduced Energy Star in 1992 as a voluntary labeling program designed to identify and promote energy-efficient products, in order to reduce carbon dioxide emissions. USEPA partnered with the USDOE in 1996 to promote the Energy Star label, with each agency taking responsibility for particular product categories. In May 2001, Canada signed an administrative agreement with the USEPA and USDOE to administer the Energy Star program in Canada. Canada's program covers most of the products covered by the US Energy Star program.

Pursuant to the goals of NAEWG-EE, Mexico is exploring the possibility of extending the Energy Star endorsement label to Mexico. This exploration is being undertaken with consultative support from the United States and Canada. USDOE has worked closely with the USEPA and the US Agency for International Development (USAID) to advise Mexico on the requirements and benefits of joining the program. NRCan has carried out detailed studies of the effort involved and the (significant) success resulting from Canada's first two years in the program, and presented the results of these studies to the Expert Group. Based on this information from the other two countries, and its own internal deliberations, Mexico expects to soon make a decision on this issue.

2.5 Continuing Activities

In addition to working on Mexico's possible participation in the Energy Star program, the Expert Group continues to gather information that would be necessary for preparing a long-term harmonization plan for additional test procedures, mutual recognition of laboratory testing and results, voluntary endorsement labels, and other harmonization and energy efficiency promotion activities. At its March 2003 meeting in Mexico City, the Expert Group decided on three new products on which to focus its consideration of possible harmonization: central air conditioners, linear fluorescent lamps, and dry-type distribution transformers. The Group will begin this effort by analyzing the test procedures for these products to assess their degree of similarity. In addition, the Group agreed to follow developments in the three countries related to standby power losses, and to try to develop the issue together in a North American context. The Expert Group is continuing its collaboration and remains poised to undertake whatever other tasks toward further harmonization arise from its continuing deliberations.

3.0 OBSERVATIONS

The following are observations and speculations based on CLASP's experience in supporting NAEWG-EE and other regional S&L harmonization activities. CLASP has participated in S&L activities undertaken by the Asia-Pacific Economic Cooperation (APEC) and the South Asia Regional Initiative for Energy Cooperation and Development (SARI). CLASP has assisted in developing and maintaining APEC's Energy Standards Information System (ESIS) web site, and has participated in APEC and SARI S&L Workshops. CLASP also has gained insight from the rich history of regional coordination surrounding the European Union (EU)'s conversion from individual country standards and labels to a unified EU-wide S&L program. In addition, the Pan

American Standards Commission (COPANT) recently formed an energy efficiency committee and is beginning to undertake S&L harmonization efforts, as are the Asia and South East Asia Network (ASEAN) countries.

3.1 Diverse Motivations for Harmonization

The numerous nations participating in the different regional harmonization activities mentioned above have expressed the following reasons for their participation:

- Improve energy efficiency
- Improve economic efficiency (improve market efficiency)
- Reduce capital investment in energy supply
- Enhance economic development (enhance quality of life)
- Avert urban/regional air pollution
- Help meet goal to reduce climate change
- Strengthen competitive markets (reduce trade barriers)
- Reduce water consumption
- Enhance energy security

The North American nations expressed their different motivations at the first NAEWG-EE meeting. The meeting began with each of the three delegations introducing itself and stating its interest in the collaboration. Each delegation stated a different primary national rationale for its participation, though they embraced each others' goals and many of the other motivations as well.

3.2 Common Interests in Harmonization

The diversity in rationale for participating in regional harmonization activities has not diminished the commonality of interest in achieving harmonization. In every instance that CLASP has encountered, participants have expressed a strong desire to achieve various aspects of a fully-harmonized regional S&L program. The most common interests expressed by the delegations of the three countries and participants in other regional harmonization efforts are:

- Harmonized test facilities and protocols
- Mutual recognition of test results
- Common comparison energy label content
- Harmonized endorsement energy labels
- Harmonized MEPS for some markets
- Shared learning of labeling process
- Shared learning of standard-setting process

There is clearly interest in both: 1) substantive achievements in harmonizing testing, MEPS, and labels (the first five items); and 2) the process of standard-setting and labeling (the last two items). In the latter case, an exchange of information and experiences has been a high priority.

3.3 Benefit of a Broad Agreement on Economics or Trade

In all cases, the creation of an S&L harmonization activity has been an outgrowth of a broader collaborative effort. For example, NAEWG-EE (which focuses on S&L) grew out of NAEWG (which focuses on all aspects of energy policy), which grew out of NAFTA (which focuses on all aspects of trade). The APEC Experts Group on Energy Efficiency and Conservation (which includes S&L harmonization) grew out of the APEC Energy Working Group (which focuses on all

aspects of energy), which grew out of APEC (which focuses on economic cooperation). The EU S&L program is just one aspect of a broad economic alliance.

We know of no instance where regional S&L harmonization has developed independently and operated as a stand-alone enterprise. We believe that the existence of a framework for mutual cooperation on a broader, higher-level mission like economic development is a prerequisite to establishing a thriving cooperative activity addressing S&L. S&L is simply not of high enough political or economic priority for it to stand on its own.

3.4 Formidable Barriers

Despite strong common interest in achieving regional harmonization in several aspects of S&L programs, harmonization activities are complicated and have a long time horizon. First, there are the formalities of establishing official organizational bodies that represent the respective governments. Once legitimized, harmonization bodies must be endowed with adequate resources (financial and human) to accomplish their goals. As important, the organizational bodies must have access to critical data about each country's energy efficiency programs. (In the case of NAEWG-EE, this problem was solved by appointing officials and experts from the three countries' standard-making agencies to be the principal participants of the Expert Group.) Language issues lengthen the time needed to carry out many activities, since documents (e.g., test procedures to undergo comparison, final reports issued by the group) need translation. In addition, setting priorities, creating an ongoing program, and developing written documents can take time and patience in a cross-cultural setting. Finally, any official outputs from the group need official approval from all of the governments involved.

3.5 Abundant Opportunities

Though formidable, the barriers mentioned above are by no means insurmountable. Once the barriers have been addressed, it is often the case that opportunities for harmonization are abundant. As detailed above, in the case of NAEWG-EE, ample opportunity exists for collaboration among the three countries in their energy efficiency standards and labeling programs. In addition to the MEPS and test procedures already harmonized and those identified as near-term possibilities, each country continues to develop its own S&L program. Canada has recently amended the *Energy Efficiency Regulations* for room air conditioners and has proposed other collaborative amendments. The U.S. is currently working on new standards for commercial unitary air conditioners, residential furnaces and boilers, and distribution transformers. These activities are likely to stimulate further cooperative attempts at harmonization.

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