



**Ensuring Electricity Metering
Accuracy and Consumer
Confidence in a Changing Market**

Written by : Patrick Vanasse

For : Office of Consumers Affairs, Industry Canada

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Option consommateurs
2120, rue Sherbrooke est, bur. 604
Montréal (Québec)
H2K 1C3

Telephone: (514) 598-7288
Fax: (514) 598-8511
E-mail: info@option-consommateurs.org

Executive Summary

In 1999, Measurement Canada initiated an electricity trade sector review (ETSR) with a view to modifying the agency's methods of intervention in standard setting, approval, inspection, dispute and complaint settlement and compliance monitoring for electricity meters. In this context, Option consommateurs considers it necessary to represent the interests of the vulnerable party in electricity metering, since most consumers are not in a position to check the accuracy of electricity metering themselves. Therefore, it is Measurement Canada's role to protect consumers by ensuring the accuracy and reliability of electricity meters. Option consommateurs stresses that this role must be maintained.

At present, Measurement Canada intervenes directly at six of the seven stages of the process that ensures meter accuracy: establishing measurement rules and meter requirements; calibrating and certifying measurement standards and test equipment; evaluating and approving new measuring apparatus; initial and reverification testing of meters and devices; inspecting meter installations; investigating measurement disputes and complaints; monitoring and enforcing compliance. Initial and reverification of meters and devices is performed by verifiers accredited under the Accreditation Program for Meter Verification and Inspection. Measurement Canada intends to reduce its level of intervention by establishing industry participation at nearly all stages, except for the establishment of measurement rules and meter requirements and the investigation of measurement disputes and complaints.

In order to place in perspective the current role of Measurement Canada, as well as the agency's and the industry's proposals for the future, we briefly reviewed the regulatory situation in the United States by examining the role of the *American National Standards Institute* (ANSI) as well as the regulatory frameworks of Florida and New York State. We determined that despite ANSI's multi-stakeholder approach, including consumer groups, its decision-making structure distinctly favours industry. As for the state regulations we reviewed, despite certain deficiencies, they do permit the public authorities to exercise a non-negligible role. The case of New York State is particularly interesting, since it empirically demonstrates that the liberalization of metering services can exist within a strict consumer protection framework.

We conducted a scientific survey of the entire Canadian population. Canadians, it was determined, are relatively confident in the accuracy and reliability of their meters, and this confidence can be attributed to the relative rarity with which problems arise, as well as the regularity of their electricity bill. The survey also showed that consumers who do experience meter problems generally seek resolution by contacting the utility directly. In these cases, consumer satisfaction with the handling of their complaint was only moderate.

The survey also revealed that only a small percentage of these consumers had heard of Measurement Canada, and very few of them had ever appealed to this federal agency.

In July 2001, the Environics firm held two focus group sessions in each of the three cities: Montreal, Toronto and Calgary. Consumers' comments reveal that they are relatively confident in the accuracy of their meters. They agreed that a government agency should ensure accuracy, and disagreed with this role being played by industry. The participants were unaware of Measurement Canada's intervention, but when told of it, agreed that it is a good thing and of public benefit. When asked to comment on the need to adopt new metering technologies, and on the proposed

changes to Measurement Canada's role, the participants suspected the industry of being behind the initiatives. They insisted that Measurement Canada—even if it relinquishes the more prescriptive aspects of its involvement—must retain its role as the electricity metering industry watchdog. The Ontario and Alberta consumers made the link between deregulation and rate increases on the one hand, and poorer quality meters on the other; this was one reason why they demanded that Measurement Canada counterbalance the effects of deregulation on consumers by blocking the introduction of such meters. Finally, the focus group participants stressed that Measurement Canada should better publicize its existence and role.

Consumer confidence in electricity meters is indeed generally high, but it is illogical to deduce this, as the industry does, from the small number of complaints filed with Measurement Canada. Consumers, by and large, simply do not know what Measurement Canada does; consequently, few of them think to approach the agency in connection with metering disputes. Most consumers think that they are expected to face the utility alone when it comes to resolving disputes. This situation is prejudicial to the consumers who do have complaints, since they are only moderately satisfied with their utility's complaint handling procedure, as we have found. In our opinion, Measurement Canada must make its role better known to the general public, ensuring that it can adequately respond to the increased number of complaints that would likely result.

Some stakeholders have mentioned the need to open the electricity industry to competition, causing rates to fluctuate from hour to hour or season to season, and making necessary the introduction of new time-of-use meters to adjust billing accordingly. However, it is not clear that consumers desire these changes, nor is it certain that all consumers would benefit from them. The switch to time-of-use billing could very well raise the costs to households that are unable to shift their electricity consumption to off-peak hours.

We are of the opinion that the industry's participation in certain tasks currently carried out by Measurement Canada should be strictly regulated and configured so to preserve the neutrality and impartiality of the mandataries' actions. We question this impartiality, since we suspect that the industry stakeholders may place their business interests before the public interest. These risks will doubtless be accentuated by deregulation and the opening of the electricity industry to competition. In our opinion, deregulation and liberalization must be counterbalanced by close monitoring on the part of Measurement Canada. Consumer confidence is likely to be seriously affected if, on the contrary, Measurement Canada compromises its monitoring role by failing to implement mechanisms that can effectively ensure industry compliance.

In our opinion, Measurement Canada must maintain its direct responsibility for the following key areas in order to preserve metering accuracy and consumer confidence: establishing measurement rules and meter requirements; calibrating and certifying measurement standards and test equipment; evaluating and approving new measuring apparatus; investigating measurement disputes and complaints; monitoring and enforcing compliance.

In its *Industry Initiative: Electricity Metering Accuracy Program*, the Canadian Electricity Association (CEA) put forward a set of proposals. Overall, we feel that the CEA's proposals reflect the concerns of industry alone, with almost no consideration given to consumers' interests. Although carefully worded and documented, the CEA's analysis ignores consumers' concerns regarding standards, impartiality and rigour in meter approval, inspection and quality control. As

to the bodies proposed as industry self-regulators, we consider them to be insufficiently independent of the industry: they hardly provide for protection of the public at all.

We believe that Measurement Canada should take our concerns into account by ensuring that the liberalization of markets and the advent of new metering technologies are strictly regulated and subject to government intervention which, while its most prescriptive aspects are eliminated, is still able to guarantee consumer protection.

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1. Introduction

In 1999, Measurement Canada initiated a review of thirty-nine (39) sectors scheduled to take place over a twelve-year period. The electricity sector is one of the first in which Measurement Canada will investigate “whether our marketplace intervention is appropriate, open, transparent, cost effective and consistent with international best practices.”¹ Certain stakeholders, including electricity industry representatives, argue that Measurement Canada’s role has become inappropriate given the new realities of the industry. Formerly a state-owned, regulated monopoly throughout Canada, the electricity industry has recently been opened to competition and extensive deregulation in certain provinces, particularly Ontario and Alberta. According to industry stakeholders, this liberalization and deregulation will be joined in a few years by the opening of the Canadian electricity market to international competition. These stakeholders assert that US electricity companies will soon be competing on Canadian markets, while Canadian businesses will compete with companies in the US market.

US utilities, it is asserted, have access to new electricity metering technologies with the introduction of new types of meters that have not yet appeared in Canada. The industry argues that current regulations on new meter approvals hinder the adoption of these new meters. For the industry, the solution would be to effect a radical change in Measurement Canada’s practices; the agency would relinquish much of its direct intervention in the industry, giving way to a self-regulation model.

In our opinion, the changes proposed by the electricity industry would not be at all desirable for consumers. Currently, consumers show relatively high confidence in the accuracy of their meters; this confidence is largely due to the perception that a government agency has ultimate responsibility for metering accuracy. In our opinion, the industry should not be left to look after itself: Measurement Canada should continue to play a role in regulation, compliance monitoring and dispute resolution.

Residential consumers are the vulnerable party in electricity metering. After all, it is the utility (or in the future, possibly an independent company) that carries out this task, and consumers perceive their recourse in the event of a dispute as being limited. Unlike large companies and industries which frequently own checkmeters enabling them to validate the utility’s figures, residential consumers must rely on the utility. It is Measurement Canada’s role to protect the consumer as vulnerable party, through a set of mechanisms described below, which we think it highly important to preserve. Industry self-regulation would deprive the consumer of protection against the companies, whose standards and practices would be guided by the motive of profit maximization to a greater extent than measurement accuracy.

The purpose of this report is to defend our position before the Electricity Trade Sector Review (ETSR) hearings, according to the following outline. First, we researched electricity metering regulatory practice in the United States. Second, we conducted a scientific survey of the Canadian public. Third, we held six focus groups in Montreal, Toronto and Calgary. Finally, we

¹ MEASUREMENT CANADA. *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 5.

reviewed a document produced by the Canadian Electricity Association (CEA) and provide our comments here on their proposals.

2. The Current Context of Measurement Canada

The obligations and powers of Industry Canada in the area of the electricity trade are defined by the *Electricity and Gas Inspection Act* which is administered by Measurement Canada. In its enforcement of this act and its regulations, Measurement Canada performs a series of tasks to ensure the accuracy of electricity metering. Measurement Canada currently intervenes directly in the market, but the agency has begun to establish partnerships with the private sector for certain tasks. With the ETSR, Measurement Canada seeks to enter into many more partnerships so that it can limit its intervention to the programs it deems necessary. Measurement Canada is trying to strike a balance between implementing the modern intervention methods demanded by the industry and maintaining consumer confidence.²

2.1 Establishing Measurement Rules and Meter Requirements

Measurement Canada currently administers and enforces the *Weights and Measures Act and Regulations* and the *Electricity and Gas Inspection Act and Regulations*. These two acts establish the rules of governmental intervention in trade measurement and the rights and obligations of stakeholders. In its enforcement of this legislative framework, Measurement Canada currently does all the development and evaluation of technical specifications relating to design, composition, construction, performance, installation, use and testing of meters, metering installations and measuring apparatus.³

According to Measurement Canada, the *Electricity and Gas Inspection Act* and associated Regulations can only be amended through a complex process, while the agency has more control over the development of specifications. Therefore, Measurement Canada suggests “making better use of stakeholders expertise and resources by involving them earlier and more extensively in creating new Specifications.”⁴ This seems to indicate that Measurement Canada would preserve its standardization role while creating further partnerships to carry out this task.

² MEASUREMENT CANADA, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, pp. 8–9.

³ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 17.

⁴ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 17.

2.2 Calibration and Certification of Measurement Devices and Testing Equipment

Measurement Canada maintains reference electricity measurement standards which are periodically calibrated by the National Research Council (NRC). Based on these reference standards, Measurement Canada calibrates and certifies measuring apparatus and test equipment (MATE) owned by the agency or by accredited meter verifiers (AMV) for use in meter testing. It is through this hierarchy of standards that traceability of each individual item of MATE is maintained to NRC's national standards as required by the *Electricity and Gas Inspection Act*. Calibration consoles are the apparatus used by AMVs for the comparison testing of meters. These must be calibrated and certified by Measurement Canada against S-E-01: Specifications for the Calibration, Certification and use of the Electricity Calibration consoles.⁵

Measurement Canada proposes to assess, recognize and monitor the competency of private sector organizations to conduct this work.⁶ This means that AMVs may be in charge of calibration and certification of MATE and calibration consoles used for meter testing.

2.3 Evaluation and Approval of Measuring Apparatus

Prototype measuring devices intended for trade use are evaluated by Measurement Canada for compliance against LMB-EG-07: *Specification for Approval of Type of Electricity Meters, Instrument Transformers and Auxiliary Devices*. Usually prototype devices are submitted to a Measurement Canada lab where tests are performed.⁷

Measurement Canada proposes to assess and recognize the competency of other organizations to do this work. The private partners would test meter prototypes and provide the test results to Measurement Canada. The latter would either approve the tests, request changes or reject the new devices, by reference to the same standards.⁸

2.4 Initial and Reverification of Metering Devices

Approved measuring devices must be verified before their use in trade is permitted and periodically reverified to ensure they are performing within the legal tolerances. Reverification, which extends the validity of the seal on the meter, is not done on all devices used in trade. It involves a statistical sampling and testing methodology in order to determine the level of device compliance relative to an established standard.⁹

⁵ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 18.

⁶ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 18.

⁷ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, pp. 18-19.

⁸ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, pp. 18-19.

⁹ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 19.

Since 1998, Measurement Canada has gradually contracted out the testing and verification of meters to AMVs, who now do most of this work. AMVs may be meter manufacturers, public utilities or meter service providers (MSPs). In total, 24 AMVs¹⁰ perform these tasks, and their work is governed by the Accreditation Program for Meter Verification and Inspection. This program's purpose is to enable Measurement Canada to exert control over the services provided by AMVs. The Program relieves Measurement Canada of verification tasks; the agency merely has to ensure that the AMVs are performing their work in compliance with its rules.

2.5 Inspection of Meter Installations

Measurement Canada has very limited resources and only manages to inspect a small proportion of meter installations. Historically, Measurement Canada randomly inspected 2 % of the meter installations but this program has been cancelled due to resource limitations.¹¹

Measurement Canada plans to make an initial inspection of all meter installations mandatory. To carry this out, Measurement Canada intends to use AMVs accredited under the Accreditation Program for Meter Verification and Inspection.

2.6 Investigation of Measurement Disputes and Complaints

When an electricity consumer and a utility dispute a measurement transaction and the utility's customer service department is unable to solve the problem, the consumer or the utility may request an investigation by Measurement Canada. The agency uses its own or AMV staff and calibration consoles to perform the investigations.¹²

Measurement Canada intends to provide more seamless service in liaison with provincial agencies and non-government organizations to consumers seeking information and recourse during electricity metering complaints.¹³

2.7 Monitoring and Enforcement of Compliance

Measurement Canada conducts product audits on AMV premises to ensure that correct meter testing procedures are being followed and that their mandatory quality assurance system is being maintained. By issuing a notice of non-compliance an AMV is requested to correct observed problem situations. In an extreme case, accreditation status could be revoked if an AMV fails to respond to a Measurement Canada directive.¹⁴

¹⁰ The verifiers originate from the meter manufacturing industry (General Electric and Schlumberger), the utilities and MSPs.

¹¹ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 20.

¹² Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 21.

¹³ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 21.

¹⁴ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 21.

Measurement Canada conducts in-situ audits at electricity contractor sites to ensure meter and billing record keeping is in accordance with the *Electricity and Gas Inspection Act* and that the use of unapproved, overdue or unsealed meters is minimized.¹⁵

Measurement Canada intends to “establish a marketplace monitoring and enforcement policy and reporting mechanisms that meet the public’s needs.”¹⁶ It is unclear how this policy would change Measurement Canada’s role, and whether the agency would still conduct the audits.

Measurement Canada’s level of intervention is currently extensive, but the agency is preparing to curtail it. Certain stakeholders, particularly the utilities and meter manufacturers, are calling for a drastic curtailment of Measurement Canada’s role. They generally invoke the more limited role of regulatory agencies in other countries, where the industry is subjected to fewer constraints. Some industry stakeholders go so far as to conclude that self-regulation is the way of the future, since this model is widely used abroad, especially in the United States. A review of certain US practices will enable us to put these assertions into perspective, and to observe the measures put in place elsewhere in regard to electricity metering.

¹⁵ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 21.

¹⁶ Measurement Canada, *Electricity Trade Sector Review. Ensuring Accuracy and Equity in Electricity Metering: A Discussion Paper*. Ottawa, Measurement Canada, 2000, p. 21.

3. Practices in the United States

The practice of electricity measurement is governed almost exclusively by the states, which have established their own standards and practices on meter accuracy or apply those of the American National Standards Institute (ANSI). Recently, U.S. power utilities implemented new metering technologies in order to satisfy consumer demand for new services, as well as to meet the needs of businesses seeking to become more competitive.¹⁷

These changes are part of the liberalization of the domestic retail electricity market in the United States. These changes led electricity industry associations to form a coalition to develop a set of uniform practices titled the Uniform Business Practices (UBP) for the Retail Energy Market in September of 1999. In March 2000, this coalition developed the UBP for Unbundled Electricity Metering. This standardization of industry measurement practices gives coalition members the responsibility for implementing separate metering services in order to reduce development costs and interstate duplication as well as to improve transactional efficiency. Uniform metering practices are governed by the ANSI and International Electrotechnical Commission (IEC) standards on measurement accuracy, sample tests and quality control.¹⁸

3.1 ANSI

Before examining certain state practices, it is important to consider the case of a major player in the U.S. system. ANSI is the principal standards body in the United States. Founded in 1918, this private non-profit organization administers and coordinates the voluntary standardization and conformity assessment system in many industries, including electricity. The mission of this organization is to enhance both quality of life and the global competitiveness of business by promoting and facilitating voluntary consensus standards and conformity assessment systems.¹⁹

By virtue of its status and mission, ANSI gives the electricity industry a self-regulatory thrust, faithfully reflecting the private-sector focus of the U.S. electricity industry. Unlike in Canada, where standards are set primarily by Measurement Canada, this process is managed by ANSI. As well, the composition of its membership is mixed, although industry representatives dominate. Members are grouped into four major councils, each representing a different category of stakeholder.

1. The Company Member Council (CMC) represents the interests of U.S. industry in the policy setting activities of ANSI. The CMC considers global standardization and conformity

¹⁷ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

¹⁸ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

¹⁹ AMERICAN NATIONAL STANDARDS INSTITUTE, *About ANSI*, Web site, <http://www.ansi.org/public/about.html>.

assessment related issues, provides policy recommendations to the Board of Directors and its committees, and recommends candidates for Board membership.²⁰

2. The Government Member Council (GMC) provides a forum for the discussion of government standards and conformity assessment issues as they relate to the ANSI and its members. Representatives of virtually every federal department participate in this committee.²¹
3. The Organizational Member Council (OMC) represents the interests of US professional societies, trade associations, standards developers and academia. It advises the Board of Directors on policy setting, organization, planning and priorities in relation to standards, certification and conformity assessment.²²
4. The Consumer Interest Council (CIC) facilitates the representation of consumer interests in the voluntary standards process and enhances the effectiveness and credibility of ANSI. The CIC consists of knowledgeable representatives from consumer organizations, producers, retailers, distributors, industry councils, and government.²³ According to article 5.02.5 of the ANSI Constitution and By-Laws, The CIC must strive to maintain a reasonable balance among such groups. No more than one CIC member may be employed by the same company, organization, department or agency. Consistent with available resources, the CIC must promote the education of consumers regarding ANSI's activities, the proper function of standards and standardization and consumer participation in these activities and in the activities of standards developing organizations.²⁴

This structure may at first sight seem fair to all ANSI members, but it actually favours industry to the detriment of consumer associations. By recommending candidates for the ANSI Board of Directors, the CMC wields significant power over the standard setting process. Furthermore, industry representatives participate in the CIC. Consumer associations are only one group among many on the CIC. It appears that this latter council functions to legitimate the standard setting process and offer consumer education rather than to actually influence the standard setting process.

Not only does ANSI handle all matters affecting standards in the United States, but it also exerts a major influence over standard setting around the world. Stakeholders like the CEA consider the ANSI standards to be international; they recommend their use in Canadian self-regulation.

²⁰ AMERICAN NATIONAL STANDARDS INSTITUTE, *Company Member Council Executive Committee*, Web site, http://www.ansi.org/rooms/room_8/.

²¹ AMERICAN NATIONAL STANDARDS INSTITUTE, *Government Member Council*, Web site, http://www.ansi.org/rooms/room_51/.

²² AMERICAN NATIONAL STANDARDS INSTITUTE, *Organization Member Council*, Web site, http://www.ansi.org/rooms/room_20/.

²³ AMERICAN NATIONAL STANDARDS INSTITUTE, *Consumer Interest Council*, Web site, http://www.ansi.org/rooms/room_7/.

²⁴ AMERICAN NATIONAL STANDARDS INSTITUTE, *American National Standards Institute Constitution and By-Laws*, Web site, http://www.ansi.org/public/library/ansi_proc/bylaws/cic.html.

3.2 Practices in U.S. States: Florida and New York

Florida

2.2.1.1- Regulation

The Florida electricity market is composed of municipal corporations, private corporations and cooperatives. This market is regulated by the Florida Public Service Commission's Division of Electricity and Gas of the, which also establishes regulations on electricity meters. The following is a summary of regulatory issues concerning electricity meters.

- 1- All companies submit their testing procedures for review and approval to the Commission's Division of Electricity and Gas for all types of meters. These tests must conform to ANSI standard C12.1. Any changes to test procedures must be approved by the Commission's Division of Electricity and Gas.²⁵
- 2- Each utility must have available at least one watthour meter, which must be verified at least once every twelve months. The utility must compare the measurements of each of its watthour meters. Each utility must establish the traceability of its watthour standard to the national standards by one of the following methods: the Measurement Assurance Program in which the National Institute of Standards and Technology (NIST) has provided a transport standard; by means of a standard measurement which is of the same nominal value and of quality equal to the basic reference standards that are sent to NIST or to an independent laboratory approved by the Commission.²⁶
- 3- Utilities must have available at least one watthour meter for use as a portable standard for in-service testing.²⁷
- 4- The Commission sets standards on meter accuracy. The accuracy of electromechanical meters must be $\pm 4\%$, that of electronic meters must be $\pm 2\%$, that of laboratory watthour meters must be $\pm 0.05\%$ and that of portable watthour meters must be $\pm 0.1\%$.²⁸
- 5- Each utility must test the accuracy of all metering equipment before installing a new meter or where the equipment is suspected of malfunction. However, the company may test new meters by sampling under a sampling plan approved by the Commission. In-service meters must be tested by sampling under a sampling plan approved by the Commission.²⁹

²⁵ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-43, 6-44.

²⁶ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-44, 6-45.

²⁷ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-45.

²⁸ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-43, 6-44, 6-45.

²⁹ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-46.

- 6- Sampling plans must be proposed for each meter type used by the company. The analysis of a proposed sampling plan must include assessments of the plan's ability to detect the presence of inaccurate equipment, the economy of testing only a sample of the units in the population, the impact of having inaccurate units used for billing purposes, the number of units in the population, and the historical performance of the type of equipment covered by the proposed plan.³⁰
- 7- The utility must test the accuracy of a meter at a consumer's request. If the meter was not tested during the previous twelve months, the utility must perform the test at no charge to the consumer. However, if the meter was tested in the previous twelve months, the utility may charge a U.S. \$15 deposit, refundable only if the test shows the meter to be running fast in excess of the limits established by the regulation. The consumer or her representative is entitled to witness the test and to receive a written report of the test upon request.³¹
- 8- At the consumer's request, the utility must make arrangements for the test to be performed by an independent facility of the consumer's choosing. The facility must meet the requirements of the American National Standard Code for Electricity Metering. The consumer is responsible for all the costs to the utility. If the test finds the meter to be running fast in excess of the limits established by the regulation, the utility must refund the test costs.³²
- 9- The company may, at its discretion, perform its own test. In the event that separate tests of the same meter do not lead to agreement between the consumer and the utility, at the request of the utility or the customer, the Commission will resolve the matter.³³
- 10- In the case of an unresolved conflict on the accuracy of the meter reading, a meter test is performed by the utility at a written request to the Commission by the consumer. The test is supervised by a representative of the Commission. A report of the test results is provided to the consumer.

The Florida regulations provide some consumer protection but it is incomplete. The regulations do not cover the approval process for new meters, the inspection of meter installations, nor monitoring industry compliance where the industry performs the tasks itself.

The regulations cover the inspection of meters, govern the use of watt-hour meters and establish standards on meter accuracy, but entrust these tasks to the industry. The utilities perform these tasks whose purpose is to ensure accurate operation of the meters, but the only mechanism ensuring the conformity of the utilities' actions is the sampling plan for the inspection of new and in-service meters. The other actions by the utilities companies are covered by the regulation, but it does not prescribe a mechanism for verifying the conformity of these actions. In our opinion, this is a major deficiency, since we believe that a compliance monitoring mechanism for the

³⁰ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-46, 6-47.

³¹ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-48, 6-49.

³² FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-49.

³³ FLORIDA PUBLIC SERVICE COMMISSION, *Rules of Florida Public Services Commission*, Web site, <http://www.psc.state.fl.us/rules.pdf>, 6-49.

industry's actions is the only guarantee that they will be suitably monitored and that consumers will receive adequate protection.

The conflict resolution procedure regarding meter accuracy puts the consumer at a distinct disadvantage. If consumers do not wish to have their meter verified by the utility, then they must pay to have it verified by an independent entity. In our opinion, these costs constitute a significant deterrent to consumers who distrust the utility's impartiality. Consumers must either trust the utility, or pay independent inspection costs for which they may not be refunded. They can appeal to the Commission, but the regulations do not clearly establish whether this remedy is only available once all other remedies have been exhausted.

2.2.1.2- Use of New Meters: An Example

In 2000, Florida Power and Light, a private company supplying electricity to 7 million residents and businesses³⁴ (approximately 43% of the Florida market), began to replace electromechanical meters with electronic ones. The new electronic meters can record events such as problems with the electrical system and voltage fluctuations.

The new electronic meters also offer residential customers an opportunity to participate in the residential On Call energy efficiency program. Under this program, certain appliances specified in the agreement with the consumer are temporarily shut off at peak periods. In exchange for their participation, consumers receive an annual credit of up to US\$161.³⁵

Businesses, too, can participate in a similar On Call energy efficiency program. The business' air conditioning systems are shut off at peak times in the summer in order to save energy. It is important to note that the power shutoff only affects the air-conditioning; the lighting and other electrical equipment are not affected. The businesses participating in this program receive a credit of US\$14 per ton of capacity of their air conditioning system.³⁶

3.2.2- New York

On June 16, 1999, New York State Public Service Commission (NYPSC) held a series of meetings with a view to opening up the electricity meter and meter reading market to competition. In its Order Providing for Competitive Metering, the NYPSC put forth the idea that mid-sized and large electricity consumers could procure meters and meter reading services on a competitive market. These meetings brought together more than fifty (50) groups representing residential, commercial and industrial customers, utilities, unions, meter manufacturers and other interested parties.³⁷

³⁴ FLORIDA POWER AND LIGHT, *Company Profile*, Web site, http://www.fpl.com/about/profile/contents/company_profile.shtml.

³⁵ FLORIDA POWER AND LIGHT, *Residential on Call*, Web site, http://www.fpl.com/savings/on_call/residential_on_call/contents/residential_on_call.shtml.

³⁶ FLORIDA POWER AND LIGHT, *Business on Call*, Web site, http://www.fpl.com/savings/on_call/business_on_call/contents/business_on_call.shtml.

³⁷ NEW YORK STATE PUBLIC SERVICE COMMISSION, *Competitive Metering Proceeding*, Web site, http://www.dps.state.ny.us/escos_metering.html.

At the meetings, the NYPSC asked utilities to evaluate the cost of their meter service (equipment and reading on consumer's premises) and to publish the results, so consumers can be billed separately for metering service. This evaluation is necessary in order to pave the way for a competitive metering market, since consumers who wish to do business with an independent company for metering services will then have the information necessary to make an enlightened decision. These rates became effective on a temporary basis on June 15, 2001.³⁸

These meeting led to the adoption of the New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment on February 26, 2001.³⁹ This document defines the new rules governing competition in meter distribution and reading services. It is important to note that the regulations separate meter distribution from reading; therefore, companies can perform only one of these activities.

2.2.2.1- Consumer Access to the Competitive Metering Market

The new rules governing metering services cover certain options offered to consumers. First, only consumers who used more than 50 kW for at least two consecutive months during the preceding twelve months can obtain competitive metering services.⁴⁰ This clarification is important since most residential consumers do not use this much energy; for instance, this level is considered to be overconsumption for residential customers in Québec.⁴¹ But the case of New York is interesting nevertheless, since it gives one example of how the liberalization of electricity metering can take place.

Competition arises from the opportunity offered to eligible customers of keeping their current utility (which then bills metering charges separately) or doing business with an independent meter service provider (MSP) or meter data service provider (MDSP). Consumers who choose the latter route must do so for both meter and meter data services. However, consumers can purchase their own meter and contract the installation, maintenance and reading to the utility.⁴² We see this flexibility as potentially advantageous for consumers insofar as MSPs are adequately regulated and the NYPSC has binding authority over them.

Meters distributed by independent companies belong to them and are rented to consumers. To avoid conflicts of interest, an MSP/MDSP cannot use its own metering services; it must do business with another company or with the utility.⁴³

³⁸ NEW YORK STATE PUBLIC SERVICE COMMISSION, *Competitive Metering Proceeding*, Web site, http://www.dps.state.ny.us/esco_metering.html.

³⁹ NEW YORK STATE PUBLIC SERVICE COMMISSION, *Competitive Metering Proceeding*, Web site, http://www.dps.state.ny.us/esco_metering.html.

⁴⁰ NEW YORK STATE PUBLIC SERVICE COMMISSION, *Competitive Metering Proceeding*, Web site, http://www.dps.state.ny.us/esco_metering.html.

⁴¹ In Québec, residential consumers using more than 50 kW are billed an extra charge.

⁴² NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 2-3.

⁴³ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, 2-3, 12.

2.2.2.2- Eligibility of Meter Companies

MSPs and MDSPs must request authorization from the NYPSC to offer services to consumers. The application must contain the following information:

- a listing of the utilities in whose service territories the company will offer its services;
- a listing of services to be provided;
- attestation as to the company's commitment to maintain ongoing training to ensure continued employee competence;
- for the MSPs, a description of the program for testing meter devices, including attestation of compliance with the requirements of state regulation 16 NYCRR Part 92, and the location of the test facilities, which must be in New York State;
- for MDSPs, a description of the equipment (hardware and software) used;
- attestation that the company has a security system in place to protect meter equipment and/or data from unauthorized physical or electronic entry or tampering;
- a description of how and where records of meter installations and/or data will be kept, as well as plans for disaster recovery of those records and a means of ensuring that those records will be available to the utility if the MSP/MDSP goes out of business;
- attestation that the company maintains worker's compensation insurance for its employees;
- an acknowledgement that the company's services are subject to audit by the NYPSC and/or the utility.⁴⁴

An MSP/MDSP applying for an authorization must agree to abide by the following:

- 16 NYCRR Parts 13, 92, 93 and 125;
- any applicable business laws;
- all applicable local, state and federal provisions;
- codes governing occupational health and safety in the electricity industry, including OSHA and other safety related regulations and environmental requirements;
- all consumer protection and complaint handling procedures required by the NYPSC to be provided by the electricity distributor;
- the provisions of these new practices and procedures.⁴⁵

⁴⁴ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 5-6.

⁴⁵ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 6.

An MSP/MDSP filing an application for authorization must demonstrate that it holds sufficient insurance to cover claims against it: at least US\$2 million for aggregate general liability and US\$1 million for each occurrence of bodily injury, property damage and personal injury. Coverage must be sufficient to cover claims filed for 2 years after the company ceases to offer metering services in New York.⁴⁶

Where MSP/MDSP receive an authorization, they may offer their services to electricity distributors (which then refer them to their customers) or directly to consumers. MSPs must give each utility a list of their first ten (10) installations in the service area of that utility. Where an MSP/MDSP fails to comply with the eligibility conditions, the NYPSC can revoke its authorization if corrective action is not implemented.⁴⁷

2.2.2.3- Inspection, Consumer Service and Meter Installation Requirements

These requirements apply to MSPs only.

The company must perform a site inspection on each visit to a customer's site. It must ensure that the meter and associated equipment is correctly identified and has the correct characteristics for the type of service provided to the customer. Any necessary repairs identified during the inspection should be completed in a timely manner. The inspection should cover the following aspects:

- detection of hazards related to customer premises (e.g. unsafe access to the building, vicious or unrestrained animals, etc.)
- detection of physical hazards (e.g. debris around the meter site, environmental hazard, etc.);
- detection of the presence of life support equipment (e.g. respirators) requiring uninterrupted power supply during meter installation;
- detection of electrical hazards (e.g.: exposed or defective wiring, missing panels, etc.)
- detection of signs of theft of service (e.g. unsealed or improperly sealed equipment, unauthorized connection to the service entrance, etc.)⁴⁸

Meter service providers must comply with a variety of standards. First, all site wiring must comply with the provisions of the National Electrical Code and any applicable state or local code. Second, all MSPs must comply with the Occupational Safety and Health Administration Regulations. Finally, electricity meters must be tested and maintained according to the rules established by the NYPSC.⁴⁹

⁴⁶ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 6-7.

⁴⁷ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 7-8.

⁴⁸ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 9-11.

⁴⁹ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 12.

Meters that are owned, installed, maintained and read by MSPs must meet criteria a) to d) below. Meters that are owned by customers, but installed, maintained and read by the utility, must meet criteria a) through f) below:

- a) meters used must comply with all applicable federal and industry standards for accuracy, functionality and monitoring the electrical service for they will be used, and must be approved by the NYPSC;
- b) the meter must physically interface with the utility's distribution system, and the consumer bears any cost of ensuring this compatibility;
- c) all meters must have a visual read capability, and demand reset mechanisms in manually read meters must have key locks that can be opened by the utility;
- d) meters must be capable of developing and supplying billing determinants in a manner and a timeframe consistent with the requirements of the utility;
- e) the utility must have the means of programming and installing program files on the meter, and the consumer is responsible for establishing this programming capability;
- f) the utility must have the equipment and procedures needed to test and maintain the meter.⁵⁰

The meter owner (MSP or consumer) must provide the utility with the information necessary to test the compatibility of a meter with the utility's system. The utility has thirty (30) days in which to evaluate this compatibility. If the meter is deemed incompatible, the utility must advise the MSP or the owner and the two parties will attempt to resolve the problems. If they are unable to reach an agreement, the MSP may appeal to the NYPSC.⁵¹

The rules set forth detailed provisions on meter identification, inventory of meters not owned by the utility, meter equipment ceiling and locking, security for programmable meters, meter access and service interruptions for meter maintenance.⁵² These provisions are not detailed here.

The MSP is responsible for maintaining in-service data on the meters it supports, in conformity with 16 NYCRR Part 92. This data must include test results for all meters on which service or calibration has been performed, for the life of the meter and for two years after the meter has been retired. Where the company ceases to do business in New York State, this data must be transmitted to the new service provider. All data must comply with 16 NYCRR Part 92.⁵³

In new installations, the MSP must ensure that the appropriate inspections by regulatory authorities and the utility are completed. Once the meters are installed, the MSP must verify whether billing remains constant and whether consumption record data does not vary before and

⁵⁰ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 12-13.

⁵¹ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p.13.

⁵² NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 14-17.

⁵³ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 17.

after the installation of the new meter. The consumer load must be compared before and after installation of the new meter. For meters that can be read remotely, the MSP must verify that the remote location is operational through local and/or network systems checks.⁵⁴

Where it is necessary to repair or replace a meter, the MSP is responsible for doing so within twenty-four (24) hours and for securing the consumer's cooperation. If the utility discovers a malfunction, it may either contact the MSP to report the problem, or make the repairs itself, but it cannot invoice for such repairs. If the conditions pose a hazard to health or safety or if a service interruption occurs as a result of a meter malfunction, the period is two hours. Where the MSP does not respond to a service request within ten (10) days, the utility may replace the meter with its own at a maximum cost of US\$150, until such time as the MSP replaces the meter.⁵⁵

The MSP is responsible for the transmission of data regarding the identification and start readings of any new meter it installs as well as any existing meter it removes. It must notify the consumer, the utility and the MDSP if it encounters hazardous or theft of service conditions. If appropriate, the MSP must also notify the regulatory authority, the local inspection agency and any other interested party. Reprogramming, replacement or repair of a meter and any discrepancy in data must be reported to all appropriate parties. The MSP must notify the utility any time that work being performed on a consumer's premises could result in the creation of a new metering point and/or affect distribution system facilities.⁵⁶

2.2.2.4- Complaint Resolution

In cases where the resolution of a dispute between a utility, MSP/MDSP and/or consumer concerning a meter reading require a test of the meter's accuracy, the following procedures concerning payment for the test apply:

- if the meter registers outside of the tolerance for accuracy set forth in 16 NYCRR Part 92, the cost of the test is the responsibility of the MSP;
- if the meter registers within the allowable limits set forth in 16 NYCRR Part 92, the cost of the test is the responsibility of the party demanding the test. However, the consumer's liability for such costs will not exceed US\$50, with the balance being the responsibility of the meter owner. Under this provision, if the consumer owns the meter or if the test identifies fraud or electricity theft by the consumer, the latter may be charged the full cost of the test;
- any interested parties may witness a meter test.⁵⁷

If a consumer disagrees with an MSP/MDSP and complains to the utility, the latter must inform the consumer of her right to file a complaint with the MSP/MDSP, or to the NYPSC if the

⁵⁴ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 18-19.

⁵⁵ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 19-20.

⁵⁶ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 20-21.

⁵⁷ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 22.

complaint is not resolved. Following a complaint to the MSP/MDSP, the latter must respond to the consumer in accordance with the NYPSC procedures. The MSP/MDSP must also inform the consumer of the NYPSC complaint handling procedures. If a consumer is unable to reach a satisfactory solution in this way, the consumer can complain, either orally or in writing, to the NYPSC, which has the authority to request and witness the test of a meter.⁵⁸

2.2.2.5- Audits and Compliance Verification

The staff of the NYPSC has the overall responsibility for the auditing of metering infrastructure. Staff activities may include, but are not limited to:

- performance, or authorizing the performance, of site inspections of a customer's premises;
- reviews of procedures;
- inspections of meter testing and repair facilities;
- witnessing of installations in progress;
- and any other audits and reviews deemed necessary.⁵⁹

The staff of the NYPSC may require utilities to conduct audits for which it is responsible. The MSP/MDSP must cooperate with these audits. It must also report all meter service and meter data service information for the services it provides under the Practices and Procedures. An MSP must provide work schedules on request of the NYPSC staff or the utility for the purpose of auditing meter installations, meter readings and other on-site work. In addition, each MSP must submit a work schedule to each utility for the first ten (10) installations by the MSP in that utility's service area.

At the direction of the NYPSC staff, the utility will conduct an audit of metering site installation and of meter maintenance performed by MSPs. The costs of these audits are reimbursed by NYPSC. A utility may, at its own expense, audit the performance of MSPs/MDSPs by witnessing the work performed and/or by performing follow-up inspections.⁶⁰

Efficient data collection is necessary for audit effectiveness. The NYPSC rules provide as follows concerning data collection:

- the utility will track all meter removal, installation, replacements, modifications and accuracy tests;
- the MSPs/MDSPs will provide the utility with data related to all meter removals, installations, replacements, modifications and accuracy tests;

⁵⁸ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, pp. 24-25.

⁵⁹ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 28.

⁶⁰ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 28.

- the results of audits or other investigations by MSPs/MDSPs or utilities must be forwarded to the utility;
- the utility will maintain a meter and site configuration database that contains the data needed to ensure that all service delivery points are metered;
- MSPs, MDSPs and utilities will take all appropriate steps to ensure that the data collected is available only to authorized parties.⁶¹

Each entity conducting an audit must provide a report to the NYPSC staff, the MSPs/MDSPs concerned by the audit and any other interested parties on request. Each utility must provide the NYPSC staff with a list of competitively supplied meters attached to its distribution system.⁶²

2.2.2.6- Conclusions

In our estimation, the rules governing the liberalization of electricity metering are quite complete and seem to provide good consumer protection. New York State has apparently succeeded in liberalizing a market without deregulating it, and without leaving it up to the industry to define and apply its own rules. Thus, companies wishing to enter the market must obtain the authorization of a state agency and fulfil certain requirements. The meter installation procedure is governed by rules, and related apparatus and equipment must be approved by the government. MSPs have obligations relating to meter malfunction. Complaint handling and consumer appeals are regulated. Product audits are required, and the NYPSC either does them directly or supervises their performance by the utility.

However, the new rules have some failings which may cause prejudice to the consumer. In Florida, for example, the complaint procedure may discourage consumers from demanding a meter audit if they will have to pay for the test if it is not in their favour. Consumers may also be deterred by the fact that it is the MSP that performs the test; they may feel that an independent test would be more impartial. New York consumers may appeal to the NYPSC, but this is only allowed where the consumer and the MSP were unable to resolve their dispute.

The role of the utilities in this process is perplexing. Their mandate is to carry out most of the auditing of the actions of the MSPs/MDSPs on behalf of the NYPSC. It is true that utilities and MSPs are statutorily independent from one another, but their *de facto* interdependence is likely to lead to a conflict of interest where conformity auditing is concerned. This could be detrimental to consumers if the utility is lax in applying the NYPSC's rules. In our opinion, the NYPSC's regulations are not sufficiently clear and compulsory in the area of auditing by the utilities.

⁶¹ NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 29.

⁶² NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE, *New York Practices and Procedures for the Provision of Electric Metering in a Competitive Environment*, State of New York, 2001, p. 29.

4. Survey Analysis

4.1 Introduction

A survey was conducted of 2,049 people from across Canada to determine their confidence in their electricity meters and the handling of complaints by their utility in the event of inaccuracy. Of this total, the survey questions were administered to 1,484 people (70%)⁶³, which consists of only those people responsible for paying some or all of their household electricity bill.

Hydro-Québec is the electricity utility with the largest number of respondents (25%), followed by British Columbia Hydro with 13%, Hydro One with 6% and Toronto Hydro with 5%. The remaining respondents are divided among the other 25 utilities, with each accounting for 3% of respondents or less.

4.2 Confidence in Electricity Meters

The confidence of respondents in their electricity meters is generally quite high. Of those questioned, 77% had complete or relative confidence in the accuracy of their meters, while 23% had little or no confidence. We would rate the confidence level on the whole, as relatively rather than very high, since only 23% of the respondents had complete confidence in the accuracy of their meter, whereas 50% had relative confidence. We also observe that, at 6%, the proportion of people having no confidence in the accuracy of their meters is very low.

Table 1 – Confidence in meter accuracy

Confidence Level	Proportion (%)
Complete confidence	27
Relative confidence	50
Little confidence	14
No confidence	6

This breakdown of confidence levels varies relatively little between subgroups of respondents. It remains more or less constant in each region of Canada, with variations of 3% or less between them, while slightly more significant variations were observed for certain socio-economic variables.⁶⁴

⁶³ Of this total, 189 are from the Atlantic Provinces, 374 from Quebec, 385 from Ontario and 536 from western Canada.

⁶⁴ The variables used are employment status, employment type, income level and education.

Therefore, we derived a first approximation of confidence in electricity meters, which we term the “confidence level,” as the proportion of respondents averring “confident” responses, i.e. either complete or relative confidence. With respect to employment status, this confidence level was higher-than-average for retirees, 84% of whom had complete or relative confidence in the accuracy of their meters. Homemakers and the unemployed have a lower confidence level, with respective rates of 71% and 70%. As for those working outside the home, the confidence level is about average. Variations are also observed by type of employment: the confidence level is highest among administrators and professionals, with a rate of 80%, and lowest among technicians and semi-skilled workers, with respective rates of 72% and 71%.

Variations of the same magnitude occur by income group, but the relationship between income and confidence is not continuously increasing or decreasing. People with the highest incomes (\$60,000 and over) have the highest confidence level, varying between 82% and 85%; whereas at 71%, those with average incomes (\$40,000 to \$60,000) have the lowest confidence level. People with lower incomes (\$40,000 and under) fall in between, with rates of between 75% and 79%.

Finally, a degree of correlation was observed between education and confidence: people who attended university are the most confident (84–87%); while with 73%, those with a college-level education are the least. Individuals with a high school education or less rated average, with a confidence level of 75%.

4.3 Factors Explaining Confidence Levels

To delineate the reasons underlying the confident responses, we asked respondents to select one of the following reasons:

- has never experienced problems;
- considers the amount of the bill to be consistent and reasonable or that the billing is precise;
- has never considered the accuracy of the meter or believes that it works properly;
- knows how to read the meter;
- meter is new or has recently been serviced.

To delineate the reasons underlying the “unconfident” responses (i.e. “little confidence” or “no confidence”), we asked respondents to select one of the following reasons:

- distrusts the electric utility, the billing or the meter;
- electric bill is too high;
- extremely variable electric bills;
- is unable to read meter.

Before continuing, it is important to mention that there is some intentional overlap in the reasons offered to consumers expressing relative or little confidence in meter accuracy. These groups

were offered a choice from among all of the reasons for both “confidence” and “unconfidence.” The overlap is necessary, since one may assume that those with relative confidence in the accuracy of their meters have reasons for not being completely confident, while those little confidence have reasons for not responding “no confidence.” The inclusion of extra responses did not yield significant results for relatively confident respondents, since all the reasons for lacking confidence only accounted for 2% of the responses in this category. On the other hand, it did yield significant results among the group with little confidence in the accuracy of their meters, as we will see later, in the analysis of this latter group.

4.3.1- Breakdown of Confident Responses

The two main reasons for confidence in meter accuracy are the absence of problems, and reasonable and consistent bills/precise billing; these are cited equally often (32%) by those with relative confidence in the accuracy of their meters. Among those with complete confidence in meter accuracy, the absence of problems is the main reason, accounting for 37% of responses; consistent bills ranked second at 27%.

The third reason for confidence is never having given thought to meter accuracy, which accounts for 11% of “complete confidence” responses and 12% of “relative confidence” responses. The fourth reason, ability to read the meter, is infrequently cited, accounting for 11% of completely confident and 8% of relatively confident respondents.

Finally, the recent installation of a new meter or recent servicing is an almost negligible factor, chosen by only 2% of respondents expressing confidence.

Table 2 – Reasons cited by people with complete confidence in meter accuracy

Reason	Proportion (%)
Never experienced problems	37
Amount of bill seems reasonable and consistent/billing precise	27
Never given thought to meter accuracy/believes it works properly	11
Can read the meter	11
Meter new or recently serviced	2

Table 3 – Reasons cited by people with relative confidence in meter accuracy

Reason	Distribution (%)
Never experienced problems	32

Amount of bill seems reasonable and consistent/billing precise	32
Never given thought to meter accuracy/believes it works properly	12
Can read the meter	8
Meter new or recently serviced	2
Distrust of electric utility, billing or meter	2
Extremely variable electric bills	1
Can't read the meter	1
Electric bill too high	0

4.3.2- Breakdown of Unconfident Responses

The two main reasons cited by people expressing little or no confidence in meter accuracy are a distrust of the utility, the billing or the meter and the impression that the bill is too high. Among people with little confidence in meter accuracy, these two reasons are cited equally often (25%). Those expressing no confidence most often cited a distrust of the utility, billing or meter (35%); the next ranked reason was excessive bills (32%).

Extremely variable bills is the third most common response for those expressing little confidence (13%) and no confidence (19%). Of those with no confidence, inability to read the meter was the least common reason, accounting for 6% of responses.

As previously mentioned, respondents expressing little confidence were offered both the reasons for confidence and unconfidence in their meters. Not only did they choose the overlapping reasons more often than did the relatively confident respondents—two of these reasons accounted for a significant portion of the reasons cited by this category of respondents—but in fact, these reasons were more popular than one of the “unconfident” reasons. Specifically, 13% of respondents cited trust in the utility, the billing or the meter, and 7% mentioned their ability to read the meter, whereas only 5% responded that the main reason for little confidence was their inability to read the meter. The other reasons for confidence in the meter were negligible in this respondent category (1% or less).

Table 4 – Reasons cited by people with little confidence in meter accuracy

Reason	Proportion (%)
Electric bill too high	25
Distrust of electric utility, billing or meter	25

Extremely variable electric bills	13
Never experienced problems	13
Can read the meter	7
Can't read the meter	5
Amount of bill seems reasonable and consistent/billing precise	1
Never given thought to meter accuracy/believes it works properly	1
Meter new or recently serviced	0

Table 5 – Reasons cited by people with no confidence in meter accuracy

Reason	Proportion (%)
Distrust of electric utility, billing or meter	35
Electric bill too high	32
Extremely variable electric bills	19
Can't read the meter	6

4.3.3- Conclusions

The main concerns for the consumers who participated in this survey are the degree of confidence they place in their utility, their bills or their meter and the amount of their electricity bill. While the former concern is ranks first among their concerns, the latter is not far behind, and we observed that these two rank far ahead of the other reasons cited. Therefore, it is their perceptions of these two factors on which the majority of consumers base their confidence or unconfidence in the accuracy of their electricity meters.

Some variations were observed by socioeconomic and geographic population segment, but an in-depth analysis identified no major patterns, for two reasons. First, a number of socioeconomic or geographic differences did not show up consistently in both subgroups of “confident” and “unconfident” respondents. When these differences appeared in one subgroup, they were often canceled out or even reversed by the other subgroup. For example, 74% of unemployed people with no confidence in the accuracy of their meters cite distrust of the utility, the billing or the meter, whereas no one in this socioeconomic group cited this reason among those with little confidence. In these cases, one cannot describe the reality without either compromising rigour or

going into such minute detail as to render the analysis nearly incomprehensible. Second, where socioeconomic or geographic differences were consistent across the “confident” or “unconfident” groups of respondents, they were insignificant due to the small number of respondents in the relevant subgroup: namely, those with no confidence in the accuracy of their meters. This subgroup only comprises 85 respondents to begin with; since, for example, only 5 of them are unemployed, it is easy to see that rigorous statistical analysis and conclusions are precluded.

4.4 Handling of Electricity Metering Complaints by the Utility

We examined cases where consumers had had a dispute with their utility on electricity metering. Of the respondents, 15% reported a problem concerning meter reading; they were asked to provide certain information on the handling of their cases.

We first asked the respondents if their utility had taken certain measures following their request for a review, and to indicate their level of satisfaction with the handling of their case. We then asked them questions about Measurement Canada: whether they knew of this agency and if they had considered filing a complaint with it concerning the meter reading.

4.4.1- Handling of Requests for Review of Meter Readings

First, we asked consumers if their electricity utility had provided them information on their usage and on the amount they were billed. Of the total, 67% had received this information. On this question, we noted significantly higher rates for people earning between \$20,000 and \$30,000 (83%) and for Québec respondents (79%).

Next, we asked if the utility sent an employee to verify the meter and whether or not the bill had been reduced following the visit. Of those indicating a problem with a meter reading, 36% received a visit by an employee which resulted in a reduction of their bill, and 42% received a visit with no subsequent reduction. For these responses, we observed four significant variables:⁶⁵ only 25% of people with a high school education and 23% of respondents from Alberta received the visit of an employee that resulted in a reduction of their bill; 58% of those holding an office, sales or service job and 57% of those earning \$20,000 and under were visited by an employee following which their billing was upheld.

Very few of the respondents who disputed their bills were referred by the utility to Measurement Canada (5%). Finally, 21% of these respondents indicated any other measures taken following their complaint. Specifically, 26% had their meter repaired or replaced, 24% were offered information on their energy usage, 22% had their bill reduced, 10% were ignored by their utility, 5% saw their bill upheld or increased and 21% mentioned other measures by their utility.

We asked the respondents who disputed their meter readings to rate their satisfaction with the handling of their complaint by the electricity utility on a scale of 1 to 10, with 10 being the highest. The overall satisfaction level is 6.2. Breaking this down, 16% of respondents were completely dissatisfied, 10% were quite dissatisfied (score of 2 to 4), 17% were moderately

⁶⁵ A difference was observed among the unemployed whose bill remained the same, but the very small sample size (five respondents) makes this statistic non-significant.

satisfied, (score of 5 or 6), 33% were quite satisfied (score of 7 to 9), and 18% were completely satisfied.

4.4.2- Measurement Canada

Among respondents who disputed their meter readings, awareness of Measurement Canada's role is very low: only 17% of them know that this agency is competent to handle their complaint if they are not satisfied with its handling by their electricity utility.

Of those aware of Measurement Canada's role, only 4 % would like to file a complaint with this agency. The proportion was higher for some socioeconomic segments and regions of the country, but the sample size is much too small (38 respondents in total) to find any significant differences.

4.5 Conclusion

Only 17% of consumers who reported meter reading-related problems know of Measurement Canada, and only 4% of these would file a complaint with the agency. This means that only 0.68% of all consumers experiencing electricity metering problems have the intention of filing a complaint with this agency. We can conclude that this option is very rarely considered by consumers. Furthermore, in a dispute between a consumer and a utility, the latter very infrequently mentions Measurement Canada as a possible recourse. It is therefore obvious that the number of complaints received by Measurement Canada is not a reliable indicator of Canadian consumer confidence in electricity metering accuracy.

To the contrary, this very low number can be ascribed to consumers' lack of knowledge about Measurement Canada, not to their overwhelming confidence in their meters. We are convinced that consumer confidence in metering accuracy is much more reliably measured by our direct survey data on consumer confidence and satisfaction with utility complaint handling. This data yields a less optimistic portrait of consumer confidence than the data on recourse to Measurement Canada.

5. Analysis of Focus Groups

As mentioned previously, in July 2001 the Environics firm held two focus group sessions in each of three cities: Montreal, Toronto and Calgary.

5.1 Consumer Confidence in Billing and Metering

The position of the focus group participants is similar to that of the survey participants: they pay close attention to their electricity bill, especially in Calgary, where rates have increased substantially over the last year. Their concern relates much more to the rate at which they are billed than to the accuracy of the meter, in which they are generally very confident. While in certain cases people felt that they were overbilled, they did not think that meter inaccuracy was the cause. In Toronto, a number of people thought they were overbilled due to an incorrect estimate or human error on the part of meter reader or other utility personnel. In Calgary, people were more inclined to think the overbilling was due to the deregulation. In Montreal, people were more satisfied with their bills, which are relatively low.

Like the survey participants, the majority of the discussion group participants considered meter accuracy to be a minor concern. The majority of them have never looked at a meter and are unable to read one. Like the survey participants, the focus group participants expressed relatively high confidence in their electricity meters. This confidence is based on the consistency of their bills and on the fact that meters use simple, reliable technology. Only three participants have ever experienced problems with their meters.

However, this does not mean that no one is concerned with metering accuracy. Several Calgary participants blamed their meters for the steep increases in their bills, which are actually due to the rate hikes. For those few people who suspected malfunctioning meters, the reason expressed was the advanced age of the device. They felt that any malfunction would be dramatic, with a correspondingly dramatic increase in their bills. They do not believe that a meter could have a minor defect resulting in a reading slightly above or below actual usage.

5.2 Consumer Confidence in Utility's Meter Verification

According to the participants, verification of meter accuracy should ideally be done by a government agency. The idea of an independent agency such as Measurement Canada performing this function is generally well received. The electric utilities should not hold ultimate responsibility for meter verification, since they have other interests that could conflict with this responsibility. However, consumer perception differed by city. Toronto and Calgary participants are more skeptical about the utilities' integrity in this matter. In Montreal, Hydro-Québec is perceived as an arm of the Québec government and the participants believe that the company has a mandate to protect the public interest. Still, some Québec participants expressed concern that Hydro-Québec might find itself in a conflict of interest if it were responsible for the verification of its own meters.

In all the focus groups, the participants were hostile to the idea of the CEA leading the advisory committee that will oversee the monitoring of compliance with regulations. In all three cities in which discussions took place, people were very skeptical that an association of electricity companies could impartially monitor the enforcement of standards.

In conclusion, even though some of the participants trust the utilities with respect to meter verification, they unanimously think that consumers' interests can only be protected by Measurement Canada retaining its leadership as an independent monitoring agency and.

5.3 Awareness of Measurement Canada and its Role

While practically all of the participants knew that meter accuracy is overseen by a government agency, they were almost unanimously surprised to learn that this agency is Measurement Canada. Some people knew of this agency as the one associated with the system of weights and measures, or by its logo found on gasoline pumps.

The participants were divided between those for whom awareness of Measurement Canada's role increases their confidence in their electricity meters and those for whom it does not increase their already-high confidence level. It should be pointed out that no participants felt the current regulations give too large a role to Measurement Canada, or decrease their confidence in electricity metering accuracy. They felt there are few reasons for opposing the current role of Measurement Canada, and that generally, this organization constitutes an effective means of verifying meter accuracy, since it has no interest in being dishonest with consumers.

5.4 The Future of Electricity Measurement and the Need for Change

The majority of the participants agree that meters must change in the future and that the current devices are technologically outdated. They predict that meters of the future will use digital technology and be able to transmit reading automatically over the Internet; that consumers will be able to view meter readings on the Internet, and that consumers will be able to ascertain the consumption of each device by that channel. For most participants, such changes are welcome, although some question their necessity since they think the current system works well. Some participants wonder if consumers will have any say in how the new technologies are applied, since at present it is the utility that chooses the type of meter.

The participants were unsure why metering regulations should change. Some feared that Canadian standards are being relaxed because of trade agreements such as NAFTA or pressure from the US government. They also suspect that the utilities' and meter manufacturers' motives for favouring a relaxation of the regulations may be to increase their profits. The Montreal participants mentioned that if Hydro-Québec were to be privatized, Measurement Canada's role should be strengthened.

5.5 Reactions to Measurement Canada's Trade Sector Review Process

The reactions to this process are somewhat divided. Most feel that it is a good idea, especially since the procedures have not been reviewed for a long time. The people most favourable to this process are in Toronto and Calgary, where the electricity industry has already been deregulated. They feel that the federal government should step up its vigilance following deregulation. People generally agree that the review should address the electricity sector first. But some participants expressed reservations about the fact that the process will take 12 years, and about the costs it will entail.

In general, people see this as a bureaucratic process, one in which they have little interest. Of much more concern to them is its results. For the majority of participants, there is a consensus on the need for Measurement Canada to perform a regulatory role in the electricity sector. This role should consist of monitoring meters and utilities, mediating in disputes between consumers and utilities and ensuring that the meter verification process is not monopolized by the utilities, whose interests might be opposed to those of the public. The participants mentioned that with all the changes occurring in the sector and the new players making an entrance, it is even more important for Measurement Canada to be vigilant about meter accuracy. It should retain the final say and have the capacity to review policies in this sector. In Toronto and Calgary, some participants reacted negatively to the idea of further deregulation, which they associate with price increases in Alberta and the Walkerton situation in Ontario. For these people, Measurement Canada must maintain its role in counterbalancing the risks to consumers posed by deregulation.

5.6 Reactions to Proposed Changes in Measurement Canada's Role

The majority of participants found the descriptions of proposed changes in the regulatory framework confusing and difficult to understand. Some wondered whether there is a need to change anything, since the current regulations have made accurate metering possible. In Toronto, some participants wondered whether Measurement Canada was attempting to evade its responsibilities.

While the participants understood that the utilities and meter manufacturers have requested the changes to keep pace with new technologies and devices, a number of them wondered why there was a need to approve so many types of meters, since all they do is measure electricity usage. They wondered whether it would be better for Measurement Canada to approve a single standard meter type.

The consumers were unsure how these changes might benefit them personally. Even if the new regulatory framework meant the approval of more new devices, this would not mean that consumers have the freedom to choose a meter. The participants suspect that the requested changes may be coming from meter manufacturers who wish to produce less expensive, poorer quality devices.

When it was explained to the participants that Measurement Canada's current regulatory framework is very detailed and prescriptive and that this might pose a barrier to the development of new meter types, they became more open to the changes. What is most important for the participants is that the meters be accurate. They are not very concerned whether the internal operation of the meters is strictly controlled by Measurement Canada, and would accept a relaxation of the most prescriptive regulations. The consumers would accept a process whereby electricity utilities would be obligated simply to respect meter accuracy standards.

However while it is acceptable to participants that Measurement Canada no longer oversee the internal workings of meters, this agency should still rigorously apply standards and keep the public informed of its role. The consumers think that Measurement Canada should play the following roles: penalize and fine instances of noncompliance; collect data on meters and utilities, as well as on their level of regulatory compliance; mediate in disputes and maintain the final say; establish general guidelines for meter operation. Consumers think caution should be taken in changing the regulatory framework so they are not left at the mercy of the utilities.

The participants understood that Measurement Canada operates with limited resources which it must use as efficiently as possible, and that in its new role, it would be able to redouble its efforts in areas with the most positive impact on consumers.

5.7 The New Role of Measurement Canada

The description of the new role of Measurement Canada was quite well received. For consumers, it makes sense for Measurement Canada to monitor electricity utilities and meter manufacturers and to apply regulations. It was also mentioned that as a federal agency, Measurement Canada should propose laws and policies and see that they are enforced. However, a minority of participants felt that Measurement Canada's veto over new devices is excessive. Meanwhile, some participants in a Montreal discussion group feared the consequences of Measurement Canada's withdrawal from the establishment of regulations if this could lead to the market's being inundated with poor quality meters. On the other hand, participants generally have no problem with the contribution of the utilities to new rules and policies, provided Measurement Canada has the final say and retains the responsibility of certifying and verifying the process.

The participants unanimously approved of Measurement Canada's role as mediator in disputes about meter accuracy and that it should have the last word. They also wanted to see consumers informed of their right to appeal to Measurement Canada in the case of disputes with their utility.

Participants from all three cities were categorical in their assertion that Canada must not approve new meters simply because this has been done in other countries. There is a consensus that Canadian standards should remain higher than those of other countries.

5.8 Consumer Education on Measurement Canada's Role

While practically all the participants knew that meter accuracy is overseen by a government agency, they were unanimously surprised to learn that this agency is Measurement Canada. Some people had heard of this organization, or seen its logo somewhere, but none associated it with this

role. The participants would like to be better informed of their right to appeal to Measurement Canada in the event of disputes with their utility.

Some participants were skeptical about Measurement Canada's ability to carry out its entire mandate. These people had never heard of Measurement Canada or seen one of its inspectors, and they wanted to know if, as individual consumers, they are affected by this agency's activities. Some people suggested that Measurement Canada should better publicize its mandate to Canadians.

The participants are quite favourable to the idea of Measurement Canada compiling and publishing statistics about complaints, compliance rates, etc. Participants generally wished to see Measurement Canada be more visible and provide more information to Canadian consumers. Publication of statistics, they felt, would be a step in the right direction.

6. Option consommateurs Arguments on Electricity Trade Sector Review

6.1 Consumer Confidence in Meter Reliability

As evidence of consumers' confidence in the accuracy of their meters, the industry stakeholders point to the amount of refunds paid following appeals to Measurement Canada. Since refunds are minimal with respect to the utilities' revenues, the industry concludes that very few appeals have been filed and that the share of refunds in total sales was insignificant.⁶⁶ Based on this data, the industry stakeholders are quick to conclude that consumer's confidence in their meters is very high.

In our opinion, this line of argument about consumer confidence in meter accuracy is invalid. Very few consumers have heard of Measurement Canada; and of those who have, and have experienced problems with meter accuracy, only a tiny percentage considered appealing to this body. Indeed, the funding provided by Measurement Canada for many of our focus groups illustrates its awareness that the appeals data is an unreliable indicator of consumer confidence in metering accuracy.

In our view, the survey data and the focus group comments are much more reliable in this respect. True, this data indicates that consumers are relatively confident in the accuracy and reliability of their electricity meters. However, it is important to mention that this confidence is not as total as the industry claims. The survey data and focus group comments show that consumer confidence is based largely on the low variability of their electric bill and on the fact that they simply have not experienced problems with the device. Moreover, a non-negligible proportion of respondents had little or no confidence in their meter's accuracy.

6.2 Reaction of Consumers who Experienced Metering Problems

Whereas the indicators put forward by the industry suggest that a tiny proportion of consumers have problems with their meters, our data indicates a considerably larger problem: 15% of our respondents reported a problem with their meter to their utility. The discrepancy resides in the fact that consumer confidence is being extrapolated from different consumer actions in the two cases. When a metering conflict arises between the two parties, the utility generally takes steps to correct the problem, but it rarely tells the consumer that Measurement Canada is competent to arbitrate the dispute and make the final decision. Meanwhile, consumers are not in the habit of appealing to Measurement Canada, quite simply because most of them have never heard of this body and its arbitration role.

⁶⁶ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

Consumers who doubt their meter's accuracy generally go it alone against their electricity utility. This situation is prejudicial to consumer's interests, for our survey shows that consumer satisfaction with utility complaint handling is only moderate. Ignorance of their options for recourse puts consumers in a vulnerable position. Consumers also feel that they lack the time, money and legal knowledge necessary to go up against a utility and its vast resources. Therefore, it is important for consumers to be better informed about their recourse options in the event of a dispute; they should know that they can appeal to Measurement Canada, which is competent to arbitrate their dispute in a fair and equitable manner. We are convinced that Measurement Canada must heighten public awareness of its existence and arbitration role.

This opinion is shared by the focus group participants. We think that if the public were better informed about Measurement Canada's role, consumer confidence in electricity metering would increase. But the most significant impact of a broader public understanding of Measurement Canada's role would be to give consumers assurance that it is not just a case of "consumers versus the utility;" there are actions they can take in the case of the dispute. This would diminish the sense of powerlessness that consumers may well feel before large corporations.

We support Measurement Canada's intention to better integrate its complaint handling service with the provincial agencies and non-governmental organizations. However, it will be necessary to ensure that the quality and impartiality of complaint handling are preserved. To do so, Measurement Canada must continue to arbitrate disputes, relegating partner organizations to a purely informative role. Such a change would also increase the numbers of complaints filed with Measurement Canada, providing the agency with a truer assessment of consumer confidence in electricity metering accuracy. However, an increase would raise the problem of Measurement Canada's capacity to respond to consumer demand and to effectively in process disputes. In our opinion, dispute resolution must remain an important role of Measurement Canada, which must take steps to meet the demand. Consumers' confidence in their meters is likely to be jeopardized if Measurement Canada is unable to fulfill its arbitration role, and thus to continue to defend the public interest.

6.3 Need for New Metering Technologies

The need to expedite the approval of new meters is one of the major reasons why the electricity industry is calling for an in-depth review of Measurement Canada's role, and a partnership between the agency and the private sector. The industry argues that this will enable new metering technologies, such as time-of-use, to be brought to market. In its proposals to the ETSR, the Canadian Electricity Association (CEA) calls for Canada to make up its technological deficit by allowing meters based on new technologies to be installed. The industry is not the only interested party here: consumers too may well benefit in many cases. However, these new technologies are a double-edged sword for consumers, and it is not clear that all would benefit.

The electricity market liberalization underway in several Canadian provinces will result in consumers paying market prices, which vary from hour to hour and season to season as a function of supply and demand. This type of pricing could also be implemented in Québec and other provinces where electricity rate setting is regulated. In these provinces it would simply be a matter of amending regulations to allow time-of-use billing. However, the rate appearing on the consumer's bill would be a weighted average of the rate fluctuations during the billing period.

The current meters do not support time of use billing, so consumers cannot take advantage of rate reductions during off-peak periods or reduce their consumption during peak periods; in short, they cannot adjust their consumption so as to reduce their electric bill.

One may assume that with the introduction of time-of-use billing, consumers will lobby for the introduction of new metering technologies. Indeed, to take advantage of these rates, they will need meters that can calculate consumption in real time. And unless suitable meters are available at a reasonable cost, the introduction of time-of-use meters and associated billing procedures will be held back.

By facilitating the market transition with the introduction of new metering technology, Measurement Canada will enable utilities to bill their low-volume customers (residential customers, among others) by time of use, resulting in electricity savings for the consumer. To give consumers this opportunity, it is important for Measurement Canada to approve meters with time-of-use capability as rapidly as possible. However, Measurement Canada must not approve meters based on unreliable technologies, which could well undermine consumer confidence in the new devices. This would deter consumers from adopting them, evacuating one of the main reasons for the ETSR.

When time-of-use meters are brought to market, the utilities will have strong incentives to implement them as quickly as possible so as to attract new customers. The risk is that in the resulting competitive rush, various companies may be tempted to use poorer quality meters to gain competitive advantage over the first to market, without sufficient regard to criteria such as durability, reliability or accuracy. Hence it is important for Measurement Canada to play its consumer protection role by ensuring that all meters are approved and meet the relevant standards; an unregulated market might offer opportunities for various unproven technologies to gain a foothold, an outcome which we strongly oppose.

When considering the need to implement new electricity meters, certain caveats are in order. First, it is not clear to all consumers that there is a need to bring more advanced meters onto the market. The focus group participants did not generally perceive the benefits of these new devices. In general, consumers are satisfied with the current electromechanical meters and their simple, proven technology. Most consumers thought that a meter is just a device to measure electricity usage, and some wondered why it is necessary to diversify the offering. Consumers must be made aware of the advantages offered to them by the new technologies.

The second caveat is more important. The introduction of time-of-use-based rate setting will benefit consumers only if they are able to shift their consumption to off-peak hours. For many consumers, especially families in which the parents work a normal schedule (nine to five on weekdays), this may be difficult to achieve without sacrificing basic needs such as food preparation and hygiene. These customers represent a more captive market in this respect, and are likely to be penalized by rate increases at peak periods if the new time-of-use meters are introduced to: what seemed an advantage thus becomes a disadvantage. Families and other users who are unable to shift their consumption may in fact have to pay larger, not smaller, electricity bills. Since low- and middle-income families are among the groups represented by Option consommateurs, we are greatly concerned by these possible outcomes.

6.4 Industry Participation in Performing Measurement Canada Mandates

As we have seen, residential consumers are vulnerable to possible fluctuations in the measurement of their electricity usage, and their only protection vis-à-vis the utility is the intervention of Measurement Canada. Up to now, this intervention guaranteed consumers that their meters would be designed, manufactured and installed according to exacting standards enforced by Measurement Canada. The agency also has the power to settle disputes between the consumer and the utility, acting as an impartial arbitrator.

As mentioned in Section 2, Measurement Canada proposes to shift to the industry the responsibility for four of the seven tasks it currently performs directly:

- a) calibration and certification of measurement devices and testing equipment;
- b) evaluation and approval of measuring apparatus;
- c) initial and reverification of metering devices;
- d) inspection of metering installations.

Before proceeding, it is important to mention that we are strongly opposed to Measurement Canada's transferring the calibration and certification of measurement devices and test equipment, as well as the evaluation and approval of new measuring apparatus, to the industry.

6.4.1 Regulation of Industry Involvement: An Important Measure

We concur that there is a need for Measurement Canada to exercise its role efficiently, and to find new ways of intervening that involve the participation of industry stakeholders. We agree that the latter have the expertise and rigour necessary to perform the tasks which the agency intends to transfer (except for calibration, and for evaluation and approval of measuring apparatus).

But it is important that the self-regulation model adopted by Measurement Canada does permit the industry to take control of the meter monitoring process. Consumers' opinion is quite clear on this subject: they do not wish to see the industry in charge of these tasks, particularly not in the absence of neutral and partial government regulation of the approval, verification and inspection of meters. Therefore, Measurement Canada must retain its leadership role in the monitoring of metering accuracy, and its collaboration with industry must clearly establish the agency's control over the process as a whole. Only Measurement Canada has the requisite neutrality to protect the public interest—the industry does not, despite its discourse and good intentions.

Although we acknowledge the expertise of the utilities and the meter manufacturers, we hold that it would be prejudicial to consumers' interests to give them free reign in performing these tasks. We do not impugn these industry stakeholders' expertise in conducting various meter inspection tasks. However, we are not convinced that they would be able to accomplish their task neutrally and impartially, with meter accuracy and consumer protection as their primary goal: only Measurement Canada can do so, by virtue of its status as a government agency. We believe that profitability and cost cutting are among the industry's prime interests. Given these priorities, it

seems clear to us that should the need arise to choose between guaranteeing metering accuracy or maximizing profit, industry personnel would opt for profitability to the detriment of the mandates entrusted by Measurement Canada. It is our belief that the allegiance of the electricity industry personnel in charge of carrying out these mandates would lean toward the interests of the company instead of the agency.

The Accreditation Program for Meter Verification and Inspection currently used by Measurement Canada to guide the work of accredited meter verifiers (AMV) is a promising way to delegate these tasks to industry while ensuring that Measurement Canada maintains control over meter inspection and verification. We want this program to be extended to the other tasks assigned to industry stakeholders by Measurement Canada.

Nevertheless, we have some concerns about the AMVs, principally regarding their independence and possible conflicts of interest. We are skeptical about the delegation of verification tasks to industry, and consider it difficult to guarantee an AMV's impartiality. It is essential for Measurement Canada to establish strict rules guaranteeing the independence of AMVs. For example, we would not want a single group of verifiers to conduct both metering and installation inspections. Rather, Measurement Canada should assign each of these tasks to different AMVs, so as to prevent any of them from taking control over the process, in which case the AMV might be tempted to place its corporate interest before the public interest. We also stress that AMVs must be excluded from performing tasks that could generate a conflict of interest given the nature of their company. For example, it would be unwise to permit an AMV affiliated with a meter manufacturer to handle initial meter verification.

6.4.2 Threats to the Consumer Interest

In our opinion, less direct intervention by Measurement Canada could very well induce the industry to relax its vigilance over electricity metering accuracy, especially in the context of deregulation prevailing in some provinces. Since we see self-regulation as bearing some risks, we believe that Measurement Canada must carefully regulate the electricity industry's performance of the tasks delegated to it. First, the relatively high consumer confidence in metering accuracy is likely to experience a notable decline. Comments heard in our discussion groups suggest that this high level of confidence is due to the awareness that some entity is looking after the quality and accuracy of their meter. Other focus group comments indicate that consumers are generally unfavourable to industry self-regulation, which they do not see them as capable of defending their interests the way an agency like Measurement Canada can do. To preserve consumer confidence, the actions of AMVs in the area of quality control and accuracy must be regulated by Measurement Canada; the agency must see to it that this work is done according to the standards it sets. Such supervision will be necessary in order to eliminate the possible effects on meter accuracy of the deregulation underway in certain Canadian provinces. We would not wish to see a model in which standards exist but are enforced by industry, as is the case in Florida.

Second, the opening of electric markets to competition in Alberta and Ontario could lead to a reordering of industry priorities, placing cost cutting before metering accuracy. Liberalization may lead to the introduction of competition in all services other than energy distribution, from transmission to the household meter. Competing unregulated companies could install and read their own meters in consumer's homes, as they now do in New York State. Meters would no longer be controlled by the utility, but rather by other profit-making enterprises. The latter might

very well seek to cut their metering costs down to the level where further cuts would result in lost revenue. For these companies, the meter purchase and maintenance cost would begin to outweigh considerations of accuracy. They would be tempted to purchase devices more cheaply and maintain them less assiduously. This could also occur with regulated companies, since in some provinces, the regulatory agencies are gravitating from a cost-of-service model to a performance-based model, in which public utilities are encouraged to reduce costs. As well, deregulation and regulatory changes would exert downward pressure on meter quality and maintenance, which Measurement Canada would be duty bound to counteract. The self-regulation model proposed by the electric industry and the new modes of intervention proposed by Measurement Canada would slacken will the agency's vigilance over meter approval and inspection, when precisely what is needed is stepped-up vigilance. Consumers who have expressed fears about deregulation say that it heightens the necessity of government supervision of the utilities. The case of New York State discussed in Section 3 is interesting, for it demonstrates that metering market liberalization can fit within a regulatory framework ensuring metering quality and accuracy as well as consumer protection. True, this regulatory framework is imperfect, but it indicates that the authorities of an important state of the United States—a country held up by the industry as a paragon of deregulation—have created a sound framework for liberalization and have not left it up to the companies, as self-regulators, to supersede the governmental authorities.

6.5 Areas of Continued Need for Measurement Canada's Direct Intervention

While we agree—with important reserves, and provided close supervision is exercised by Measurement Canada—that the industry may play a role for certain tasks, we believe that Measurement Canada must maintain its direct intervention in certain areas we consider to be key to consumer protection. First, Measurement Canada must be solely responsible for establishing measurement rules and metering requirements. If this were left up to the industry, it would act in defense of its own interest, despite its expressions of concern for the public interests. If the industry were to set standards on meter quality and accuracy, it would draft them to the advantage of meter manufacturers and electric companies, not consumers. It is highly likely that laxer standards than those of Measurement Canada would be adopted, to the benefit of the industry. In its plea for self-regulation, the CEA attempts to prove the contrary by invoking developments in the Alberta and Ontario wholesale markets. There, the industry has set stricter standards than Measurement Canada for meter tolerance limits. But in reality, those standards benefit the industry itself, since the wholesale market is composed of electric companies. If this is the only evidence the CEA can adduce for its position, it only lends further credence to the idea that the industry will act in its own interests when setting standards, and that if it has to choose between the consumer interest and its own interest in this matter, it will favour the latter.

Calibration and certification of measurement devices and testing equipment must remain under the responsibility of Measurement Canada. The industry would be in a flagrant conflict of interest if it were allowed to determine the measurement of a kilowatt-hour. As the agency in charge of monitoring the accuracy of weights and measures, Measurement Canada must without question maintain direct control over this measurement. In our opinion, the hierarchy of standards providing for the traceability of measuring apparatus must remain in the hands of a Canadian

government agency: at stake is nothing less than public confidence in the system of weights and measures.

The approval of new meter types must remain under the responsibility of Measurement Canada. Under the model currently being proposed by the industry and Measurement Canada, the industry would approve meters based on the results of tests performed by industry stakeholders. We contend that the industry would be in a conflict of interest if it took part in the approval of new devices. Meter manufacturers and utilities both have a vested interest in new meters being approved as quickly as possible; we believe that the companies might apply less rigour than Measurement Canada in testing these devices. Even though an accreditation process would govern the tests, we believe that new meter approval is too important an aspect of Measurement Canada's role to be entrusted to the stakeholders who market these devices.

Without question, Measurement Canada must maintain its role in dispute settlement. In the event of a dispute between a consumer and utility, consumers must have the available recourse of a neutral and impartial arbitrator at no cost to them. We are convinced that an agency composed of industry representatives or mandataries in charge of settling disputes on behalf of Measurement Canada would not be impartial enough to do this work. The focus group participants were unanimous on this point. Only a government agency like Measurement Canada can resolve disputes with the necessary impartiality and neutrality. The cases of Florida and New York State, where consumers who resort to external verifiers must pay the test expenses if the meter is found to be accurate, strengthen our conviction of the need for Measurement Canada to maintain this role.

Finally, Measurement Canada must continue to monitor and control compliance by AMVs, through product audits on their premises. It is important to ensure that adequate procedures are followed by AMVs, especially if their responsibilities are extended to inspection of meter installations. In our opinion, audits constitute not only a mechanism for monitoring the compliance of verifiers accredited under Measurement Canada's standards, but also—and more important for us—provides an essential bulwark against bias on the part of AMVs. We insist that any industry participation in verification and testing must be carefully regulated so as to ensure the conformity and impartiality of the work of the AMVs.

6.6 Proposals of the CEA

The Canadian Electricity Association (CEA) is a grouping of public and private electricity production and distribution companies accounting for 95% of all electricity produced in Canada. The association's members also include large electrical equipment manufacturers (for example, meter manufacturers) and consultants.⁶⁷

In its document *Electricity Measurement Accuracy Program (E-MAP) Proposal*, the CEA proposes radical changes to the system for monitoring of meter quality, amounting to industry

⁶⁷ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

self-regulation and self-discipline, as well as the replacement of Canadian electricity metering standards by international standards.⁶⁸

According to the CEA, the electricity metering sector in Canada is lagging behind that of other countries due to overly restrictive regulations that block the adoption of new metering technologies. The CEA considers that the current regulatory framework and the direct intervention by Measurement Canada, although well suited to conventional electromechanical devices, is too costly if applied to new electronic meters. Moreover, in the context of globalization, the Canadian electricity industry is coming under competition, and the current regulatory framework puts us in an unfavourable competitive position.⁶⁹

On the whole, we view the CEA proposals as reflecting the concerns of industry alone, according almost no importance to consumers' interests. The CEA analysis, although carefully phrased and documented, does not take account of consumers' concerns regarding standards, impartiality and rigour in the approval, inspection and quality control of meters.

6.6.1- CEA Proposals for Changing the Role of Measurement Canada

The CEA put forth a series of proposals on changes to the role of Measurement Canada. Below, we summarize and comment on each of these proposals.

6.6.1.1- Adoption of International Standards

The CEA argues that Measurement Canada should revise its regulations and specifications in order to establish how it will abolish Canadian standards in favour of international ones. The CEA does not propose any transitional period between the two, nor any adaptation of international standards to specific Canadian needs and requirements.⁷⁰

In our opinion, the outright abolition of Canadian standards in favour of international standards would be a step backwards for consumers. It is true that international standards are of just as high quality as Canadian ones, with just as solid scientific and technical underpinnings. The problem is that they may be incomplete, not providing for all the quality requirements of our electric meters. Canada-specific requirements may be due to local conditions such as climate. By abolishing Canadian standards without an exhaustive review of electricity trade measurement needs, there may be lacunas that could lead to decreased meter quality and accuracy. It is our opinion that the adoption of international standards should be accompanied by an assessment of needs regarding standards, so as to fill in any gaps. The assessment should provide for a consultation mechanism led by Measurement Canada, into which interested parties, including consumer advocacy associations, could have input. The goal of this process should be to redefine the framework of standards, resulting in an amalgamation of international standards with Canadian standards that are tailored to our specific requirements concerning meter accuracy.

⁶⁸ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁶⁹ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁷⁰ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

6.6.1.2- Quality Assurance Program

The CEA proposes that the Measurement Canada Accreditation Program, which supervises the work of AMVs, be modified to replace the Canadian accreditation standards by ISO 9000, with tests and procedures based on ANSI standards.⁷¹

This proposal is diametrically opposed to our position on the supervision of meter verifiers. In our view, it is essential that these industry verifiers must be held to strict standards if their neutrality and impartiality are to be credible. ISO 9000 in no way guarantees the impartiality of verifiers, since the standard merely requires that those who apply it engage in continuous improvement. If verifiers happen to be biased from the outset, the standard will do nothing to render them impartial. As to the adoption of ANSI standards to cover this work, we oppose the replacement of the current standards by international standards for electronic meters without a needs assessment regarding standards and a consultation of the interested parties, so as to fill in any gaps in the emerging regulatory framework.

6.6.1.3- Certification of Meter Verification Devices

The CEA proposes that the certification of meter verification devices, i.e., calibration, be performed by a meter service provider accredited by Measurement Canada, rather than Measurement Canada itself.⁷²

As mentioned earlier, we feel strongly that Measurement Canada must maintain a direct role in calibration, and we oppose the delegation of this task, even to an entity accredited by Measurement Canada.

6.6.1.4- Evaluation and Approval of New Meter Types

The CEA proposes that the evaluation and approval of new meter types be streamlined to reduce current delays of up to two years. According to the CEA, Canadian standards should be replaced by international ones, including ANSI standards. In addition, argues the Association, compliance testing should be performed by the companies, which would relay the results to Measurement Canada for approval of the new meter types.⁷³

We have serious reservations about such a process. In the first place, as mentioned above concerning the adoption of international standards, we oppose the replacement of current standards by international standards without a needs assessment regarding standards and a consultation of the interested parties, so as to fill in any gaps in the emerging regulatory framework. Second, though we approve of Measurement Canada's decision to approve new meter types, we have reservations about manufacturers performing the tests themselves. We are

⁷¹ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁷² CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁷³ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

concerned about the quality of these tests, and we would like to know how Measurement Canada intends to ensure conformity to its standards.⁷⁴

6.6.1.5- Initial and Reverification for Renewal of Security Seal

The CEA proposes that initial and reverification for renewal of the security seal on electronic meters be performed using international standards. For electromechanical meters, the CEA proposes that the current standards remain in force.⁷⁵

As mentioned previously concerning the proposal to adopt international standards, we oppose the replacement of current standards by international standards for electronic meters without a needs assessment regarding standards and a consultation of the interested parties, so as to fill in any gaps in the emerging regulatory framework.

6.6.1.6- Meter Testing Procedures

The CEA proposes that meter testing procedures be expedited. It suggests that, in the short term, the joint Measurement Canada/CEA working group pursue its work to establish new procedures to expedite the tests. In the long term, the CEA seeks the adoption or endorsement of international standards on testing procedures, under the authorization of the National Standards System of the Standards Council of Canada.⁷⁶

We agree in principle that the joint working group should strive to develop more expeditious testing procedures, but this should not take place to the detriment of meter accuracy. As to the adoption of international standards, we oppose the replacement of current standards by international standards for electronic meters without a needs assessment regarding standards and a consultation of the interested parties, so as to fill in any gaps in the emerging regulatory framework.

6.6.1.7- Annual Verification of Remote and Automatic Reading Devices

The CEA proposes that the annual verification of remote and automatic reading devices be abolished. The CEA asserts that such verification would cancel out any financial advantage of the use of this meter type.⁷⁷

We are strictly opposed to such an abolition, which goes against consumer protection. Instead of abolishing annual verification for this type of meter, Measurement Canada should revise the verification procedure to reduce the costs to the electricity industry.

⁷⁴ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁷⁵ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁷⁶ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁷⁷ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

6.6.1.8-Product Inspections

The CEA proposes the abolition of product inspections that duplicate other testing procedures. According to the CEA, this measure is unique to Canada, it does not improve meter accuracy and it increases the costs of quality control programs.⁷⁸

We are conscious of the importance of eliminating redundant tasks in order to render Measurement Canada's operations more efficient. However, the CEA has not, in our estimation, adequately demonstrated the redundancy of these inspections, nor the truth of the statement that their abolition would not jeopardize meter accuracy. We cannot endorse this request without a clear demonstration by the CEA.

6.6.1.9- Certification Audits of Metering Service Providers

The CEA considers the certification audits for metering service providers (MSP) performed by Measurement Canada to be redundant, since the companies perform internal audits and an entity accredited by the Standards Council of Canada conducts audits based on ISO 9000. The CEA argues that these multiple audits increase the costs of quality control. Therefore, the CEA proposes that these audits be replaced by one audit based on ISO 9000, conducted by a third party with the participation of Measurement Canada.⁷⁹

This proposal is promising, since it includes Measurement Canada in the process, which would guarantee the conformity and impartiality of the MSP's performance of the tasks. However, we have serious reservations about the replacement of Canadian standards by ISO 9000 standards. As mentioned above concerning the proposed adoption of international standards, we oppose the replacement of current standards by international standards for electronic meters without a needs assessment regarding standards and a consultation of the interested parties, so as to fill in any gaps in the emerging regulatory framework.

6.6.2- CEA Proposals on Industry Self-Regulation

To frame the proposed self-regulation process, the CEA calls for the creation of National Conformity Assessment, an entity with a mandate to ensure the maintenance of meter accuracy. In the first place, this agency would self-monitor the industry with reference to the ISO 9000 international quality standards rather than the Canadian standards on meter accuracy, so as to enable the electricity industry to make an entry into the international competitive market. In the second place, National Conformity Assessment would approve new meter types based on international standards (ANSI/IEEE, IEC, etc.) rather than Canadian standards. Meter manufacturers would present the results of their tests to National Conformity Assessment, which would assess their compliance with international standards.⁸⁰

⁷⁸ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁷⁹ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

⁸⁰ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

We oppose these two initiatives for the following reasons: we are against the abolition of Canadian standards in favour of international standards (ISO 9000 for quality control and ANSI/IEEE for meter accuracy) without a review process taking place. We believe that the test results should be submitted to Measurement Canada rather than an industry-based body.

In the interests of allowing public input into the self-regulation work of the industry, the CEA proposes to set up an independent advisory committee. This committee would be composed of individuals from outside the electricity industry, such as residential, commercial or industrial customers, consumer advocates, academics or electricity specialists and provincial government representatives.⁸¹

In our reading of the CEA's proposal, this committee appears to have the cosmetic function of protecting the industry's image, more than that of a truly independent monitoring body with real powers. First, this committee would not have any binding authority over the industry, its function vis-à-vis the self-regulation system would be purely advisory. Second, this committee would deliver its recommendations to the industry itself, which would make use of them as it saw fit. There would be no government agency with the power to compel the industry to implement the recommendations. Third, the committee would derive its information from data provided by the industry, which could very well refuse to divulge compromising information. We can only conclude that the committee, as proposed by the CEA, would be unable to ensure consumers that its actions are overseen by a neutral entity with sufficient powers to protect the public interest, as Measurement Canada does.

6.6.3- Conclusions

Despite the avowals of the CEA that it has consumers' interests at heart, its recommendations as part of the ETSR do not reflect our interests in terms of consumer protection. For the following reasons, the CEA's proposals would considerably weaken consumer confidence in the accuracy of their electricity meters.

The proposed self-regulation scheme would deprive the public of the neutral and impartial protection afforded by Measurement Canada. Worse, the CEA proposes that the industry supervise and verify its own work in areas hitherto reserved to Measurement Canada, with reference to its own standards, monitored by an advisory committee that would derive its information from industry data. This structure will inevitably engender major conflicts of interest in the industry, which would in effect control the entire process. In fact, the CEA proposal would wrest away from Measurement Canada nearly all its prerogatives regarding verification of meter accuracy. The only sphere of direct intervention remaining to Measurement Canada would be final arbitration in the event of a dispute over metering accuracy.

Our consumer focus groups unanimously expressed reserves about the industry's self-regulation process as a whole. We do not believe that the industry would see beyond its own interests; consumer rights and interests would not be protected in the absence of a neutral and impartial body such as Measurement Canada with direct powers to intervene, or at least guarantee the

⁸¹ CANADIAN ELECTRICITY ASSOCIATION (CEA), *Industry Initiative: Electricity Measurement Accuracy Program (E-MAP) Proposal*, electronic document, 2001.

conformity of the companies' actions in terms of meter verification, where Measurement Canada would have very clear and compulsory authority.

We consider the outright abolition of Canadian standards in favour of international standards (ISO 9000 for process quality control and ANSI/IEEE for meter accuracy) to constitute a step backwards for consumers. First, we have reservations about how well these standards are adapted to the specific electricity metering needs of Canada. It is true that international standards are generally of just as high quality as Canadian ones, with just as solid scientific and technical underpinnings. The problem is that they may be incomplete, not providing for all the quality requirements of our electric meters. Canada-specific requirements may be due to local conditions such as climate. By abolishing Canadian standards without an exhaustive review of electricity trade measurement needs, there may be lacunas that could lead to decreased meter quality and accuracy. It is our opinion that the adoption of international standards should be accompanied by an assessment of needs regarding standards, so as to fill in any gaps. The assessment should provide for a consultation mechanism led by Measurement Canada, into which interested parties, including consumer advocacy associations, could have input. The goal of this process should be to redefine the framework of standards, resulting in an amalgamation of international standards with Canadian standards that are tailored to our specific requirements concerning meter accuracy. In this regard, a decision-making structure similar to that of ANSI, but with a greater preponderance of consumers' associations, could be promising.

Second, the standards proposed by the CEA are inadequate to the task at hand: the ISO 9000 standards cover internal business processes and cannot guarantee meter accuracy. US industry exerts a stronger influence than the other stakeholders over the process, leading to the adoption of ANSI standards, and we feel that they primarily serve the interests of the businesses operating in that sector.

The proposed industry self-regulation mechanisms afford excessively weak assurances of consumer protection. These mechanisms are much too closely tied to industry, and do not possess the binding nature to effectively serve as a watchdog of the public interest in general, and consumers' interests in particular.

7. Conclusion

The stakes are high for consumers in the Measurement Canada ETSR, since the process will produce changes with non-negligible consequences on consumers. Consumers are concerned by the deregulation that may follow any weakening of Measurement Canada's role and powers. Consumers' confidence in their electricity meters is partly due to the existence of regulations enforced by a government agency. In our opinion, a relaxation of the regulations, together with the substitution of industry self-regulation for the role played by the government agency, would considerably undermine consumer confidence in these devices. The consumers who participated in our focus groups were perfectly clear on this subject: they do not trust industry self-regulation, and they perceive past deregulation in certain processes as the prime factor causing their electricity bills to rise.

We realize that Canada must keep pace with technological change in the field of electricity metering, and that the opening of electricity markets to competition is pressuring companies to introduce meters based on new technologies. We are also aware that the adoption of new meter types requires major changes in the level and nature of Measurement Canada's intervention. But these changes must give consideration to consumer's point of view—after all, it is the consumer who pays for the electricity services in question. So far, consumers are unconvinced that they would benefit from changes in electricity metering and relevant regulations. Many of them doubt the desirability and usefulness of this change, since they see their device as serving no other purpose than to calculate their electricity use. They perceive the changes in metering technology as being industry-driven, designed to benefit industry by replacing current meters with cheaper, poorer quality ones. Therefore, the introduction of new meter types and associated regulatory changes must be adjusted to benefit the consumers as well, who should not be made to feel that the quality and accuracy of their meters is being sacrificed.

As in New York State, competitive metering could very well become a reality within a few years. The industry has seized on this possibility to demand deregulation and self-regulation in this sector. But the example of New York State shows that markets can be opened to competition without sacrificing regulatory arrangements that guarantee meter quality and accuracy, and thus consumer protection.

It is our position that Measurement Canada should take our concerns into account by guaranteeing that market liberalization and the advent of new metering technologies are covered by a regulatory framework and a level of intervention which, while eliminating the most prescriptive aspects, can continue to guarantee consumer protection.

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