

**COMPREHENSIVE ENERGY EFFICIENCY PLAN
2005-2010**

2005 BUDGET

EVIDENCE

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1 SUMMARY – KEY CHARACTERISTICS OF PGÉE – 2010 HORIZON

This document presents an update/revision of the HQD Comprehensive Energy Efficiency Plan (*Plan global en efficacité énergétique*—PGÉE) as well as an evaluation of the budget required to carry out the programs and activities planned for 2005.

The table below provides an overview of the PGÉE for the entire period 2003–2010.

TABLE 1.1
SUMMARY OF PGÉE – 2010 HORIZON

MARKET	Objective (TWh) implemented by year-end 2010 ¹	Investments in \$M for the period 2003–2010			
		Customers	HQD	AÉE	TOTAL
Residential	1.0	142	328	47	517
Commercial and institutional (tariffs G, M, L)	1.1	272	308	---	580
Small and medium industries (SMI; tariffs G and M)	0.2	31	48	---	79
Large industries (LI; tariff L)	0.5	59	71	---	130
Core components (common to all markets)	0.2	137	160	---	296
Contingency	---	---	72	---	71
Capitalized borrowing costs	---	---	28	---	28
TOTAL	3.0	641	1015	47	1701

¹ The concept of GWh implemented by year-end 2010 means that the measures designed to achieve the 3.0 TWh target will be implemented incrementally until year-end 2010. The full impact of the PGÉE, 3.0 TWh of annual energy savings, will be felt as of 2011. In view of the incremental implementation of the measures, the effective impact for the year 2010 is 2.7 TWh.

² The total and subtotals may be different from the sum of the data due to rounding-off.

The following are the main features of this PGÉE:

- Built on the PGÉE 2003–2006, the PGÉE updated to the 2010 horizon introduces several modifications aiming to:
 - ◆ consolidate the existing programs;
 - ◆ substantially expand the promotion and financial support of a larger number of measures;
 - ◆ promote the emergence of innovative products and approaches thanks to financial support for experimentation and ongoing consultation mechanisms.
- The PGÉE for the 2010 horizon comprises a larger number of core activities and financially supports a larger number of measures than previously. The number of programs is now eleven (11), certain programs having been consolidated due to their similarities and in the interests of simplifying and optimizing their administration. In particular, the following consolidations were made:

- ◆ Promotion of equipment to the residential market (thermostats, pool timers) was consolidated with new promotions under an umbrella program called *EnergyWise – Energy Star Product Promotion (Promotion des produits Mieux consommer – Energy Star)*.
- ◆ Likewise, a program called *EnergyWise – Energy Star Product Promotion* was created for the commercial and institutional markets and includes small building analysis, traffic signals, and other equipment.
- ◆ The two programs designed for small and medium industries (SMI) were merged under the name *Energy Initiatives – Industrial Systems (Initiatives énergétiques – Systèmes industriels)*.
- Still among the programs offered to the residential market are the following three programs of the Agence de l'efficacité énergétique (AÉE): *EnerGuide Energy Inspection (Inspection énergétique EnerGuide)*, *Novoclimat*, and *Low-Income Households (Ménages à budget modeste)*. The Distributor's financial assistance has been significantly increased for two of them.
- The PGÉE was not only updated to the 2010 horizon but enhanced significantly in consideration of the following factors:
 - ◆ the Government of Québec's establishment, in July 2004, of a minimum energy conservation target of 2.4 TWh in 2010 for the Distributor;
 - ◆ requests by customers, partners, and intervenors before the Régie de l'énergie (the Régie) to expand the areas of action of the PGÉE and step up the Distributor's investment in energy efficiency;
 - ◆ the upward revision of the current technical/economic energy conservation potential for all markets (residential, commercial and institutional, SMI, LI);
 - ◆ The increase of about 35% in the Distributor's avoided costs following the methodology approved by the Régie in May 2004 and the revision of the calculation parameters.
- The anticipated energy efficiency impacts amount to 3.0 TWh implemented by year-end 2010, representing nearly 19% of the technical/economic potential evaluated at at least 16 TWh over a five-year horizon. This new estimate of potential takes account of the revision for the residential, commercial, and institutional markets.
- Beyond the efforts, rigorous follow-up, and regular updating to which HQD commits, achieving this objective depends on customer participation and partner buy-in.

- The market approaches have all been enhanced essentially along the following lines:
 - ◆ for the residential market, the range of measures supported by financial assistance was expanded to cover a larger number of equipment items and to accommodate more costly measures (building envelope, geothermal, etc.);
 - ◆ for the commercial and institutional markets, a product-based approach was introduced as a complement to the performance-based approach to meet the more targeted needs of certain customers, particularly the smaller ones, and to facilitate specific work on other customers' premises;
 - ◆ in most programs, the level of financial assistance, where it was already being offered, was increased significantly so as to increase the rates of participation in the programs;
 - ◆ for large industries, the per-plant financial assistance ceilings were raised.
- The core component was also enhanced by stepping up efforts devoted to communication and education, consultation, and modernization of the applicable regulations in Québec, as well as accommodating projects designed to experiment with new technologies or commercial approaches considered too risky until now.
- The share of investments borne by the Distributor is larger in the period 2005–2010 than in 2003–2006, and this share is relatively equal across all markets at about 60%. The PGÉE for the 2010 horizon is, in this respect, more balanced than was the PGÉE 2003–2006, more sensitively responding to the concern for equity among the different clienteles.
- The Distributor's view is that access to financial assistance has been improved to the point of considerably reducing, even eliminating in certain cases, the economic barrier that may explain the failure of certain customers to participate, especially given that this assistance is additional to other types of assistance offered (information, education, diagnostic tools, technical support, etc.). The financial assistance budgets include an estimate of the opportunism effect, where present, which is necessarily more significant in this PGÉE since the financial assistance is more generous and is expanded to include a larger number of measures.
- The successful completion of the revised PGÉE requires investments of over \$1.7 billion over the period 2003–2010, \$1.015 billion of which will be borne by HQD, \$47 million of which is expected from its principal partners (the AÉE and the Office of Energy Efficiency (OEE)) and \$641 million from participating customers.

- In economic terms, the PGÉE passes the total resource cost (TRC) test and yields a value of 657 million 2005 dollars.
- Moreover, the participating customer tests yields a gain of 1.004 billion 2005 dollars, verifying that the programs are cost-effective for all participating customers.
- In financial terms, the PGÉE causes a rise in the Distributor's required revenues, which impact reaches a peak of \$139 million in 2010, or 1.6% of the projected 2004 revenues.

For purposes of comparison, Table 1.2 below gives the names of the programs presented in case R-3519-2003 and the programs to which they correspond in this case. Follow-up to the programs for 2003 and 2004 presented in exhibit HQD-2 was done on the basis of the presentation of last year's programs (R-3519-2003).

TABLE 1.2
CHANGES TO PROGRAM NAMES

Program Names R-3519-2003	Program Names R-3552-2004
Residential market	Residential market
Diagnostic énergétique personnalisé – clientèle résidentielle (Customized Energy Efficiency Analysis for Residential Customers)	Diagnostic résidentiel (Residential Analysis)
Thermostats – marché existant (Thermostats-Existing Market)	Promotion des produits Mieux consommer – Energy Star (EnergyWise – Energy Star Product Promotion)
Thermostats – nouvelle construction (Thermostats-New Construction)	
Minuteries pour piscines (Pool Timers)	
Novoclimat avec l'AEÉ – volets Unifamiliales et Logements sociaux (Novoclimat with AEÉ – Single-Family and Social Housing Components)	Novoclimat de l'AEÉ – volets Unifamiliales, Logements sociaux et privés (AEÉ Novoclimat – Single-Family and Social and Private Housing Components)
Inspection énergétique EnerGuide avec l'AEÉ (EnerGuide Energy Efficiency Inspection with AEÉ)	Inspection énergétique EnerGuide de l'AEÉ (AEÉ EnerGuide Energy Efficiency Inspection)
Ménages à budget modeste de l'AEÉ (AEÉ Low-Income Households)	Ménages à budget modeste de l'AEÉ
Habitations à loyer modique (Low-Income Dwellings)	Rénovation des habitations à loyer modique (Renovation of Low-Income Dwellings)
Commercial and Institutional Markets	Commercial and Institutional Markets
Initiatives énergétiques bâtiments CI (CI Building Energy Initiatives)	Appui aux initiatives – Optimisation énergétique des bâtiments (Support for Building Energy Efficiency Optimization Initiatives)
Bâtiments d'Hydro-Québec Distribution (HQD Buildings)	
Diagnostic énergétique personnalisé (Customized Energy Efficiency Analysis)	Promotion des produits Mieux consommer – Energy Star (EnergyWise – Energy Star Product Promotion)
Éclairage public - Feux de signalisation (Public Lighting – Traffic Signals)	
Small and Medium Industries Market	Small and Medium Industries Market
Aide à la décision (Decision Support)	Appui aux initiatives – Systèmes industriels (Support for Industrial Systems Initiatives)
Initiatives énergétiques PMI (SMI energy efficiency initiatives)	
Large Industries Market	Large Industries Market
Analyse et démonstration industrielles – Grandes entreprises (PADIGE) (Industrial Analysis and Demonstration Program for Large Industries)	Analyse et démonstration industrielles – Grandes entreprises (PADIGE)
Initiatives industrielles – Grandes entreprises (PIIGE) (Industrial Initiatives Program for Large Industries)	Initiatives industrielles – Grandes entreprises (PIIGE)

2 UPDATING OF THE PGÉE TO THE 2010 HORIZON

2.1 Context of PGÉE Revision

The first PGÉE submitted by the Distributor to the Régie in November 2002 (R-3473-2001) had a target of 0.75 TWh implemented in 2006. In January 2004, the Distributor, during the work of the Parliamentary Committee on Labour and the Economy, undertook to triple its financial contribution to the AÉE for actions directed at lower-income households. This increased budget was approved by the Régie in June 2004 (D-2004-106), allowing for a slight increase in the target to 0.78 TWh implemented in 2006.

With the filing of the first budget approval application for the PGÉE, the Distributor indicated to the Régie that it was working on increasing the mid- and long-range energy conservation targets. In addition, the following factors spurred the Distributor's energy efficiency efforts:

- In its decision D-2004-96 (R-3519-2003) of May 2004, the Régie approved the Distributor's avoided cost determination methodology. Pursuant to this decision, the Distributor updated the avoided cost of electricity for the period covered by this new PGÉE, i.e., 2005 and subsequent years, and it presents the results in section 5.2. The result of this revision is a rise of about 35% in avoided costs, creating more financial leeway for the Distributor to invest in energy conservation.
- Pursuant to decision D-2004-133, a working group involving the Distributor and the intervenors recognized by the Régie was created for the purposes of reviewing the technical/economic potential for energy conservation. The preliminary results for the residential, commercial, and institutional markets, presented in the context of case R-3519-2003 Phase II, show that the potential is nearly double that of 2001. The increased potential is primarily due to the higher avoided costs and the lower cost of certain measures. The overall results for all markets will be submitted to the Régie in the context of the application for authorization of the 2006 budget.
- Comments and suggestions received on the current programs in the context of their delivery (customers, prescribers, suppliers), institutional advisory committees (professionals and customer representative associations) as well as the regulatory process (intervenors recognized by the Régie) indicate the need to expand the PGÉE's areas of action and to identify financial and other methods for eliciting greater participation in energy efficiency activities.
- The public consultation held by the Régie in the spring of 2004 to help with the formulation of its Opinion (A-2004-01) on the energy security of Quebecers with respect to electricity supplies and the contribution of the Suroît project (the Opinion) aroused heightened interest in energy efficiency and promoted the

emergence of ideas as to measures or approaches that may generate energy savings.¹ Furthermore, in view of the current level of public concern around energy and environmental issues, the Opinion sets guidelines for the level of financial effort toward energy efficiency by the Distributor that will be considered acceptable.

- After analysis of the Opinion, the Government of Québec announced in July 2004 that it was setting an energy conservation target of 2.4 TWh in 2010 for the Distributor. This target is greater than the one settled upon by the Régie in its Opinion (2.1 TWh in 2010), which reflected a scenario under consideration by the Distributor, and also exceeds the 1.5 TWh in 2010 associated with the current PGÉE.

This was the context for the Distributor's revision of its PGÉE. The revision work followed through on the work undertaken in early 2004 when the Distributor was envisaging a target of 2.1 TWh in 2010 (R-3526-2004). The results obtained to date were taken into consideration in determining whether the nature and magnitude of the support offered (awareness, training, financial assistance, etc.) should be revised in order to augment the target initially set.

HQD saw the necessity of updating the guidelines it had set out in case R-3473-2001 so as to take account of how the context had changed. These guidelines are now as follows:

- Speed the realization of the technical/economic potential by offering increased financial assistance and technical support.
- Emphasize the comprehensive building-based approach, combining it with the product-based approach.
- Promote the transformation of the markets by adapting actions swiftly and flexibly.
- Strive for added value for our actions with respect to those of other stakeholders.
- Observe the recognized economic viability criteria.
- Have an impact on required revenues that is acceptable to customers.

2.2 Directions and Strategies

With consideration of the contextual factors and the comments and suggestions received, the Distributor set the revision of its PGÉE within the following guidelines:

¹ The Distributor's responses to the intervenors' proposals are presented in Appendix 1.

- Enhance communication and education in order to create the required awareness of the PGÉE programs and motivate customers to participate in them, while adding a component for recognition of significant or innovative projects carried out by customers, partners, and collaborators;
- Facilitate the revision of the plan through consultation with stakeholders and partners on an ongoing basis as well as through testing of new equipment, technologies, or commercial approaches;
- Consolidate the actions undertaken by enhancing the existing financial incentives and financially supporting a wider range of energy-efficient products and equipment in order to lower the economic barrier to participation in the programs;
- Offer all customers a product-based approach while continuing to place the emphasis on the building performance-based approach;
- Promote the adoption of the modernized building codes at the 2007 horizon by participating in preparatory work with the government departments concerned and by facilitating the transformation of the market through financial support for implementation of measures designed to improve building thermal envelopes and energy performance.

As regards the selected strategies, adjustments were made to the existing programs, and new actions were developed with a view to eliminating certain irritants and better responding to needs that appeared inadequately satisfied by the current PGÉE. The quest for synergies and complementarity with provincial and federal government programs remained a key concern throughout the process.

The considerably higher energy conservation target for 2010 is made possible by implementing a strategy for action that is summarized in Table 2.1 and presented in detail in section 4.

GOALS	PRINCIPAL ACTIONS
<p>Arouse greater interest in energy efficiency in all markets</p>	<ul style="list-style-type: none"> • Implement a sustained awareness campaign targeting all customers via the print, radio, television, and electronic media with a view to supporting the deployment of all the programs. • Create recognition activities for energy efficiency leadership by our partners and customers in the residential, CI, SMI and LI markets.
<p>Increase the number of customized analyses performed</p>	<ul style="list-style-type: none"> • Step up efforts to promote energy efficiency products with a view to achieving the energy conservation objectives of the <i>Residential Analysis</i> program. • Continue the pilot project with Négawatts Production Inc. on the community-based approach to the deployment of the <i>Residential Analysis</i> program in an urban setting. • Put more emphasis on the customized analysis approach in interactions with small service companies in the CI markets through the new <i>EnergyWise – Energy Star Product Promotion for the Business Market</i> program.
<p>Intensify consultation with energy stakeholders and customers</p>	<ul style="list-style-type: none"> • Create a standing mechanism for instituting an ongoing dialogue with our customers, our partners, and the intervenors before the Régie concerning options for improvement of the PGÉE.
<p>Promote the adoption of regulations favouring the construction of more energy-efficient buildings</p>	<ul style="list-style-type: none"> • Financially and technically support the AÉE and the government departments on work leading to new regulations concerning the energy efficiency of new buildings for the residential and CI markets.
<p>Support testing and demonstration of innovative techniques and equipment</p>	<ul style="list-style-type: none"> • Through the existing <i>IDÉE</i> initiative (previously called RDDE), test and demonstrate proven technologies that are not yet in use in Québec or in certain segments having commercial potential. • Through the new <i>PISTE</i> initiative, test commercial approaches (e.g. recovery of second and third refrigerators) or emerging technologies whose viability has not been demonstrated in Québec (e.g.

GOALS	PRINCIPAL ACTIONS
	<p>smart meters, etc.).</p> <ul style="list-style-type: none"> • Select projects submitted by customers, partners, and various other entities under the auspices of <i>PISTE</i> and <i>IDÉE</i> with the help of external advisory committees. • Add value to various administrative arrangements to make possible a larger number of projects under the existing <i>PADIGE</i> (<i>Industrial Analysis and Demonstration Program for Large Industries</i>) program.
<p>Contribute to energy-efficiency renovation and construction of energy-efficient housing for lower-income households</p>	<ul style="list-style-type: none"> • Financially support renovation designed to improve the thermal envelope of subsidized housing complexes in partnership with the Société d’Habitation du Québec (provincial housing authority). • Through the existing <i>AÉE Novoclimat</i> program, increase financial support from 25 to 75% of the cost differential for construction of social housing. • Maintain the adjustments approved by the Régie in its decision D-2004-106 concerning the <i>AÉE Low-Income Households</i> program.
<p>Favour construction of energy-efficient homes and dwellings</p>	<ul style="list-style-type: none"> • Under the auspices of the existing <i>AÉE Novoclimat</i> program, introduce financial assistance (50% of cost differential) for construction of single-family and private dwellings.
<p>Facilitate access to financial assistance for targeted energy-efficiency products or services</p>	<ul style="list-style-type: none"> • Through the new <i>EnergyWise – Energy Star Product Promotion</i> program, promote more energy-efficient products to residential customers and financially support (20–75% of cost differential) the purchase of targeted products such as compact fluorescents, electronic thermostats, pool timers, geothermal heat pumps, and certain household appliances. • Introduce a new <i>EnergyWise – Energy Star Product Promotion for the Business Market</i> program whose purpose is to promote energy-efficiency equipment and provide financial assistance (30–50% of cost differential) for implementation of geothermal systems and energy-saving measures that are relatively easy to implement, such as T-8 fluorescents and variable-frequency drives. This program

GOALS	PRINCIPAL ACTIONS
	<p>complements the existing <i>Support for Building Energy Efficiency Optimization Initiatives – CI Markets</i> program.</p> <ul style="list-style-type: none"> • Under the existing <i>Industrial Initiatives Program for Large Industries (PIIGE)</i> program, increase the per-plant financial aid ceiling from \$1 million to \$5 million.
<p>Improve home thermal envelopes</p>	<ul style="list-style-type: none"> • Under the existing <i>EnerGuide Energy Efficiency Inspection with AÉE and OEE</i> program, step up financial support for single-family, duplex, and triplex inspection and introduce financial support (40–60% of cost differential) for implementation of energy conservation measures.
<p>Emphasize the energy performance-based approach for buildings and processes</p>	<ul style="list-style-type: none"> • Step up financial assistance from 30 to 50% of cost differential for the existing <i>Support for Building Energy Efficiency Optimization Initiatives – CI Markets</i> and <i>Support for Industrial Systems Initiatives</i> programs.
<p>Position Québec government and municipal entities as energy efficiency leaders</p>	<ul style="list-style-type: none"> • Support the Government of Québec and the municipalities in their efforts to exercise leadership in the field of energy efficiency by allocating greater financial assistance to renovation of their buildings' thermal envelopes and the purchase of energy-efficiency equipment. This higher assistance will be provided through the <i>Support for Building Energy Efficiency Optimization Initiatives – CI Markets</i> and <i>EnergyWise – Energy Star Product Promotion for the Business Market</i> programs. • Under the <i>EnergyWise – Energy Star Product Promotion for the Business Market</i> program, double financial assistance (from 40 to 80% of the cost differential) for purchase and installation of more efficient traffic signals so as to completely transform the market by year-end 2008. • Explore interest in and feasibility of a public lighting program in partnership with municipalities. • Encourage implementation of urban planning regulations favouring energy efficiency.

3 OVERVIEW OF THE PGÉE FOR THE 2010 HORIZON

In view of the context, the development process, and its overall strategic directions, the Distributor is filing with the Régie a PGÉE for the 2010 horizon with a target of 3.0 TWh implemented in 2010 (2.7 TWh on a month-by-month basis), thus surpassing the objective of 2.4 TWh set by the Government of Québec last July.

3.1 Overview of the New PGÉE for the Period 2003–2010

In order to establish the various hypotheses underlying the revision of the PGÉE to the 2010 horizon, the Distributor considered the results of its actions in 2003 and 2004.

As illustrated by Table 3.1, the revised PGÉE is much more than merely an extension of the PGÉE 2003–2006 to the 2010 horizon, since the Distributor is quadrupling its investments and doubling its energy conservation target. The economic analysis presented in section 5 demonstrates that the return on the new investments is diminishing, meaning that the additional energy savings resulting from the revised PGÉE cost more, on average, than the energy savings associated with the current PGÉE.

TABLE 3.1
PGÉE 2003–2006 VERSUS PGÉE REVISED TO THE 2010 HORIZON

	Current PGÉE		Revised PGÉE	
	Budget 2003–2010 (\$M)	Energy savings in 2010 (GWh)	Budget 2003–2010 (\$M)	Energy savings in 2010 (GWh)
Residential	98	570	328	1,000
Commercial/institutional (CI)	72	390	308	1,085
Small and medium industries (SMI)	25	150	49	206
Large industries (LI)	52	415	71	529
Core components	33	--	160	200
Contingency	--	--	72	--
Capitalized borrowing costs	--	--	28	--
TOTAL	280	1525	1015	3021

Note: The total and subtotals may be different from the sum of the data due to rounding-off.

The proposed alternative is considered the maximum effort that the Distributor can make in the medium term since it takes account of the following key considerations:

- i) the average cost of the newly implemented measures is higher (see section 5.2);
- ii) the impact of 1% of required revenues considered reasonable by the Régie is achieved or slightly exceeded (see section 5.2);
- iii) the level and pace of investments expected from participating customers and partners are significant;

- iv) certain time frames are required in order to establish and develop other partnerships and programs, and
- v) the new construction and renovation markets are already operating at full capacity, leaving little time for the various stakeholders to concentrate on the energy-efficiency quality (as opposed to quantity) of the work and the choice of efficient equipment or products.

The execution of this strategy requires investments of \$1.7 billion over the period 2003–2010, \$1.015 billion borne by the Distributor, \$47 million expected from its principal partners, the AÉE and the OEE, and \$641 million from the participating customers. The detailed information on these investments is given in Tables 3.2 and 3.3. The activities and programs and their energy impacts are described in section 4.

TABLE 3.2
DISTRIBUTOR'S ANNUAL BUDGET FORECASTS FOR THE PGÉE 2003-2010 IN \$M

	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL 2003- 2010
Programs/activities									
Residential market									
Residential analysis									
AEÉ Novoclimat									
AEÉ EnerGuide energy efficiency inspection									
AEÉ low-income households									
Energy efficiency renovation for low-income dwellings									
EnergyWise – Energy Star Product Promotion									
Subtotal – Residential market									
Commercial and institutional markets									
Support for Building Energy Efficiency Optimization Initiatives									
EnergyWise – Energy Star Product Promotion for the Business Market									
Subtotal – CI markets									
Small and medium industries market									
Support for Industrial Systems Initiatives									
Subtotal – SMI market									
Large industries market									
PADIGE									
PIIGE									
Subtotal – LI market									
Core components									
Planning and design									
Communication									
Follow-up and evaluation									
IDÉE									
PISTE									
Ongoing consultation									
Regulations									
Subtotal – Core component									
TOTAL									
<i>Contingency</i>									
<i>Capitalized borrowing costs</i>									
GRAND TOTAL									

Note 1: A 10% contingency is applied to the residential, business, and large industry market programs.

Note 2: The year 2003 includes 2002 expenses (Reference R-3473-2001, HQD-3, Document 1, p. 4 of 5).

Note 3: The total and subtotals may be different from the sum of the data due to rounding-off.

**TABLE 3.3
CUSTOMERS' AND PARTNERS' ANNUAL BUDGET FORECASTS
FOR THE PGÉE 2003-2010 (IN \$M)**

Programs/activities	2003		2004		2005		2006		2007		2008		2009		2010		TOTAL 2003-2010	
	Clients	Partners	Clients	Partners	Clients	Partners	Clients	Partners	Clients	Partners	Clients	Partners	Clients	Partners	Clients	Partners	Clients	Partners
Residential market																		
Residential analysis																		
AEÉ Novoclimat																		
AEÉ EnerGuide energy efficiency inspection																		
AEÉ low-income households																		
Energy efficiency renovation for low-income dwellings																		
EnergyWise – Energy Star Product Promotion																		
Subtotal – Residential market																		
Commercial and institutional markets																		
Support for Building Energy Efficiency Optimization Initiatives																		
EnergyWise – Energy Star Product Promotion for the Business Market																		
Subtotal – CI markets																		
Small and medium industries market																		
Support for Industrial Systems Initiatives																		
Subtotal – SMI market																		
Large industries market																		
PADIGE																		
PIIGE																		
Subtotal – LI market																		
Core components																		
Planning and design																		
Communication																		
Follow-up and evaluation																		
IDÉE																		
PISTE																		
Ongoing consultation																		
Regulations																		
Subtotal – Core component																		
TOTAL																		

Note 1: The total and subtotals may be different from the sum of the data due to rounding-off.

Table 3.4 below presents the energy impacts of the PGÉE for each program and core activity for the period 2003–2010. The energy impacts of the revised PGÉE surpass the 21% energy conservation target of the current PGÉE for the year 2006. This surplus reaches 100% at the 2010 horizon.

TABLE 3.4
ENERGY IMPACTS FOR THE PGÉE 2003–2010
(GWh IMPLEMENTED)

Programs/activities	2003	2004	2005	2006	2007	2008	2009	2010
Residential market								
Residential analysis								
AEÉ Novoclimat								
AEÉ EnerGuide energy efficiency inspection								
AEÉ low-income households								
Energy efficiency renovation for low-income dwellings								
EnergyWise – Energy Star Product Promotion								
Subtotal – Residential market								
Commercial and institutional markets								
Support for Building Energy Efficiency Optimization Initiatives								
EnergyWise – Energy Star Product Promotion for the Business Market								
Subtotal – CI markets								
Small and medium industries market								
Support for Industrial Systems Initiatives								
Subtotal – SMI market								
Large industries market								
PADIGE								
PIIGE								
Subtotal – LI market								
Core components								
Planning and design								
Communication								
Follow-up and evaluation								
IDÉE								
PISTE								
Ongoing consultation								
Regulations								
Subtotal – Core component								
TOTAL								

Note: The total and subtotals may be different from the sum of the data due to rounding-off.

The Distributor stresses the importance of customer and partner participation in the PGÉE activities and programs. Without their participation at the anticipated levels, the energy conservation target of 3 TWh at the 2010 horizon cannot be attained.

3.2 2005 Budget Request

For the year 2005 only, the resources required by the Distributor to implement the PGÉE are evaluated at \$119.3 million, or \$77 million greater than the amount contemplated in case R-3519-2003. With this budget for 2005, the Distributor ranks among the top 10 electricity utilities in North America on the basis of per-capita investment and investment-to-electricity sales revenues ratio. Table 3.5 itemizes the 2005 budget by program or activity and budget item.

This 2005 budget request includes the changes made to the various programs described in section 4. They are of three types:

- The adjustments to the programs, including certain financial assistance enhancements relating to the programs already underway, have been in effect since 14 October 2004 for the PIIGE and PADIGE programs and since 21 October 2004 for the social housing component of *Novoclimat* and the *Support for Building Energy Efficiency Optimization Initiatives* and *Support for Industrial Systems Initiatives* programs.
- The financial assistance for the new components of existing programs (general component of EnerGuide energy efficiency inspection and single-family and private dwelling components of Novoclimat) will be paid in 2005 and the eligibility date is set at 21 October 2004.
- The marketing of the new programs (*EnergyWise – Energy Star Product Promotion for the Residential and Business Markets* and *Energy Efficiency Renovation for Low-Income Dwellings*) will begin in 2005.

TABLE 3.5
DISTRIBUTOR'S 2005 BUDGET FOR THE PGÉE BY BUDGET ITEM (\$M)

Programs/activities	Development, tools and training	Administration	Financial assistance	Communication	TOTAL
Residential market					
Residential analysis					
AEÉ Novoclimat					
AEÉ EnerGuide energy efficiency inspection					
AEÉ low-income households					
Energy efficiency renovation for low-income dwellings					
EnergyWise – Energy Star Product Promotion for the Business Market					
Subtotal – Residential market					
Commercial and institutional markets					
Support for Building Energy Efficiency Optimization Initiatives					
EnergyWise – Energy Star Product Promotion for the Business Market					
Subtotal – CI markets					
Small and medium industries market					
Support for Industrial Systems Initiatives					
Subtotal – SMI market					
Large industries market					
PADIGE					
PIIGE					
Subtotal – LI market					
Core components					
Planning and design					
Communication					
Follow-up and evaluation					
IDÉE					
PISTE					
Ongoing consultation					
Regulations					
Subtotal – Core component					
TOTAL					
<i>Contingency</i>					
<i>Capitalized borrowing costs</i>					
GRAND TOTAL					

Note: The total and subtotals may be different from the sum of the data due to rounding-off.

The \$8.6 million contingency item represents 10% of the Distributor's planned 2005 investments in its energy conservation programs, or \$85.6 million. The contingency item is applied to the programs only (not the core components) because the budget corresponding to them relies in part on external factors (reactions of customers and the market in general).

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SECTIONS 4 AND 4.1. (PP. 26-51). TRANSLATION
CONTINUES HEREAFTER FOR 4.2—END.

4.2 Commercial and Institutional (CI) Markets

The diagram below illustrates the preferred approach for the commercial and institutional markets. The Distributor wants to enhance the performance-based energy efficiency approach of the existing *Support for Building Energy Efficiency Optimization Initiatives* (*Appui aux initiatives – Optimisation énergétique des bâtiments*) program by stepping up financial assistance as a function of the percentage of energy savings achieved; the greater the reduction in energy consumption, the greater the financial assistance. In addition to new construction, this program financially supports major renovation work, building expansion, and replacement of a large number of equipment items.

CI MARKETS 1,085 GWh in 2010	
<p><i>Support for Building Energy Efficiency Optimization Initiatives</i> (464 GWh):</p> <ul style="list-style-type: none"> • Commercial buildings (200 GWh) • Government of Québec buildings (200 GWh) • Municipal buildings (40 GWh) • HQD buildings (24 GWh) 	<p><i>EnergyWise – Energy Star Product Promotion for the Business Market</i> (621 GWh):</p> <ul style="list-style-type: none"> • Commercial buildings (406 GWh) • Government of Québec buildings (98 GWh) • Municipal buildings (38 GWh) • Traffic signals (40 GWh) * • Energy Star analysis – small service companies (39 GWh)
* Ends in 2008	

With the new *EnergyWise – Energy Star Product Promotion for the Business Market* (*Promotion des produits Mieux consommer – Energy Star marché affaires*) program, the Distributor will meet other market needs relating to minor renovation (e.g., work to accommodate a new occupant) and replacement of failing equipment or a limited number of energy-inefficient equipment items reaching the end of their useful life.

In order to ensure that the performance-based approach is valued by the market following the introduction of this new program, the financial assistance offered under *Support for Building Energy Efficiency Optimization Initiatives* is greater than that offered under *EnergyWise – Energy Star Product Promotion for the Business Market*.

4.2.1 Support for Building Energy Efficiency Optimization Initiatives

Program Description

The purpose of the program is to use a financial assistance amount in ¢/kWh saved as an incentive for carrying out work to reduce energy consumption in commercial and institutional buildings. This program applies to the overall energy performance of the building, which is determined with the help of a simulation tool. This approach, which

treats the building as an integrated system, makes it possible to include a great many energy efficiency measures, thus tailoring each intervention to the building in question. That is, the Distributor does not prescribe any specific measure to its CI customers under this initiative.

The program covers all commercial and institutional buildings with minimum potential energy efficiency gains of 10,000 kWh/year, as well as all uses of electricity.

Key Features

Based on its experience with the implementation of the program and the work of the advisory committees with stakeholders in the municipal, health and social services, and education sectors (see section 2.5 of HQD-3, Document 1 of this case), the Distributor considers it necessary to place a priority on addressing the following barriers to achieving the program's energy conservation objectives:

- lack of awareness in the market of: i) the concept represented by the performance-based approach and its advantages and tools, and ii) energy efficiency investment opportunities (*knowledge barrier*);
- the cost differential for major energy efficiency measures, i.e., costly measures with a long investment recovery period and non-negligible potential, such as building envelope-related measures (*economic barrier*), and
- the administrative complexity of the program as perceived by customers (*administrative barrier*).

In terms of intervention strategy, the Distributor plans to undertake the following actions to lessen the impacts of these barriers by the end of 2005:

Knowledge barrier:

- Step up and target training of key influencers (engineers, architects, technologists) to better meet their needs and the requirements of the energy efficiency performance concept.
- Augment customer education activities so as to influence them earlier in the decision-making process around equipment purchases and building design. The Distributor's sales force will play an important role here in carrying out these activities.
- Grant financial assistance for feasibility studies whose goal is to clearly identify energy efficiency measures, their costs, and their implementation timeline.

Economic barrier:

- Increase average financial assistance for implementation of energy efficiency measures from 12.5 to 20 ¢/kWh by modifying the financial assistance levels and brackets as a function of percentage of energy savings.
- Increase average financial support from 12.5 to 30 ¢/kWh for Government of Québec and municipal buildings so as to back the public authorities in taking a leadership role in energy efficiency.
- Increase maximum financial assistance per project from \$150,000 to \$500,000.

Administrative barrier:

- Simplify the financial assistance application process by pursuing efforts to harmonize with the various OEE programs so that the client has only one application to prepare, not several, as is the case at present.

It is important to emphasize that another purpose of increasing financial assistance as discussed above is to help CI customers obtain Leadership in Energy & Environmental Design (LEED) certification for their buildings. Though the Canada Green Building Council issues this certification for environmentally sound buildings (existing and new) that meet exacting performance criteria in five categories: energy and air; environmentally sound landscaping; efficient water, material, and resource management; quality indoor environments, and innovation and design process. The minimum energy efficiency performance required by LEED is to reduce consumption by 25% for new construction and by 10% for existing buildings with respect to the Model National Energy Code of Canada for Buildings 1997 (MNECB).

The *Energy Initiatives – Hydro-Québec Distribution Buildings (Initiatives énergétiques – Bâtiments Hydro-Québec Distribution)* program included in the 2003–2006 Comprehensive Energy Efficiency Plan (*Plan global en efficacité énergétique—PGEÉ*) has been incorporated into this program since the Distributor is using the performance-based approach to evaluate the energy efficiency of its buildings. In the summer of 2004, the Distributor conducted a detailed review of its buildings, enabling it to identify additional measures. Following this review, the energy conservation target was revised upward from 12 to 24 GWh in 2010.

Financial Assistance

Table 4.7 presents the proposed changes concerning financial assistance and various features of the program.

TABLE 4.7
CHANGES TO FINANCIAL ASSISTANCE

	Effective before 21 October 2004	Effective as of 21 October 2004
IMPLEMENTATION OF ENERGY SAVING (ES) PROJECTS		
Level of financial assistance	<p><u>Existing building:</u></p> <ul style="list-style-type: none"> • 0-10% ES = 10 ¢/kWh • + 10% ES = 25 ¢/kWh <p><u>New construction:</u></p> <ul style="list-style-type: none"> • 0-15% ES = 10 ¢/kWh • + 15% ES = 25 ¢/kWh 	<p>Government of Québec and municipal</p> <p><u>Existing building:</u></p> <ul style="list-style-type: none"> • 0-10% ES = 10 ¢/kWh • 10-25% ES = 45 ¢/kWh • + 25% ES = 85 ¢/kWh <p><u>New construction:</u></p> <ul style="list-style-type: none"> • 0-15% ES = 10 ¢/kWh • 15-35% ES = 45 ¢/kWh • + 35% ES = 85 ¢/kWh <p>Other sectors</p> <p><u>Existing building:</u></p> <ul style="list-style-type: none"> • 0-10% ES = 10 ¢/kWh • 10-25% ES = 30 ¢/kWh • + 25% ES = 55 ¢/kWh <p><u>New construction:</u></p> <ul style="list-style-type: none"> • 0-15% ES = 10 ¢/kWh • 15-35% ES = 30 ¢/kWh • + 35% ES = 55 ¢/kWh
Maximum assistance per project	<p><u>Existing building:</u> \$150,000 40% of eligible expenses based on cost differential</p> <p><u>New construction:</u> \$150,000</p>	<p>Government of Québec and municipal</p> <p><u>Existing building:</u> \$500,000 40% of eligible expenses based on total cost</p> <p><u>New construction:</u> \$500,000</p> <p>Other sectors</p> <p><u>Existing building:</u> \$500,000 or 40% of eligible expenses based on total cost</p> <p><u>New construction:</u> \$500,000</p>
PREPARATION OF APPLICATIONS AND FEASIBILITY STUDIES		

	Effective before 21 October 2004	Effective as of 21 October 2004
Preparation of application	10% of financial assistance (maximum \$600)	<u>Tariff G and M customers</u> 50% of feasibility study cost (maximum \$7,500)
Feasibility studies	No financial assistance	<u>Tariff L customers</u> 50% of feasibility study cost (maximum \$15,000)

Calculation Assumptions and Energy Conservation Target

The energy conservation target of 464 GWh in 2010 for this program was calculated from the unit gains per project and the number of projects as presented in Table 4.8 below.

TABLE 4.8
CALCULATION ASSUMPTIONS

	Unit gain (kWh/year)	Number of projects (2004-2010)	Energy conservation in 2010 (GWh)
Commercial buildings	550,000	364	200
Government of Québec buildings	475,000	421	200
Municipal buildings	250,000	160	40
HQD buildings	1,525,000	16	24

4.2.2 EnergyWise – Energy Star Product Promotion for the Business Market

Program Description

The purpose of this new program is to provide financial assistance to business customers as an incentive to install energy-efficient equipment having the following principal characteristics: ease of implementation (i.e., not involving major building and system redesign and not necessarily requiring the help of a consultant), and short investment recovery period. It targets existing buildings and focuses on lighting, heating, and motive power.

Business customers with annual consumption under 90,000 kWh can also carry out the *EnergyWise Analysis for Small Service Companies (Diagnostic Mieux consommer – Petites entreprises de services)*, an analysis of energy consumption using a software package offered on the Hydro-Québec website. After completing the questionnaire, the customer receives a customized report via Internet enabling it to plan measures whose implementation will optimize energy consumption.

Key Features

As a complement to the energy performance-based approach of *Support for Building Energy Efficiency Optimization Initiatives*, the Distributor is proposing to launch, by the fall of 2005, the *EnergyWise – Energy Star Product Promotion for the Business Market* program, which relies on a prescriptive approach. This means the promotion of energy efficient equipment to each of the target clienteles: commercial, Government of Québec, and municipal. As an example, the following products would be eligible for financial support: T-8 fluorescents, compact fluorescents, high-efficiency rooftop units, heat recovery fans, and geothermal systems. The Distributor wishes to do special promotion of geothermal systems in concert with industry (see section 4.1.6).

Through this program, the Distributor intends to address two key market barriers: i) customer lack of awareness of the current availability of energy efficiency products on the market, and ii) the cost differential of this equipment with respect to less energy-efficient equipment.

From now until the launch of the program, the Distributor plans to conduct market surveys to determine channels of distribution, partners, and the level of financial assistance necessary to transform the market in the medium term. These partnerships could involve manufacturers, Distributors, energy efficiency service companies, and the Office of Energy Efficiency with a view to placing the commercial strategy on a solid footing.

It is planned for the targeted energy efficiency products and their level of financial assistance to be updated regularly to take account of market reactions to the Distributor's actions as well as new developments in the products offered on the market by the manufacturers and Distributors. It is also envisioned that the promotion of energy efficiency products could take place over a very short period (e.g., 2–3 weeks) or a long period (2–3 years) depending on market conditions and the commercial strategy worked out with the partners.

The *Traffic Signal Optimization (Optimisation des feux de signalisation—POFS)* program and the *EnergyWise Analysis for Small Service Companies (Diagnostic Mieux consommer – Petites entreprises de services)* program included in the PGEÉ 2003–2006 are now incorporated into this program for the following reasons: i) the former program was already offering an energy efficiency product to the municipal market (electroluminescent diode technology), and ii) the latter program supported small service companies in selecting the best equipment from the energy efficiency standpoint.

Financial Assistance

The proposed budget for this program covers, among other items, financial assistance paid upon equipment installation at an average of 5–28 cents per kilowatt hour saved, as presented in the table below. As in the case of the *Support for Building Energy Efficiency Optimization Initiatives* program, the Distributor's financial contribution for Government

of Québec and municipal buildings will be greater, supporting these public entities in their effort to play a leadership role in the field of energy efficiency.

TABLE 4.9
FINANCIAL ASSISTANCE

	Average financial assistance
Commercial buildings	5 ¢/kWh
Government of Québec and municipal buildings	8 ¢/kWh
Traffic signals	28 ¢/kWh

A financial assistance threshold per customer will be set so as to minimize administrative expenses related to application processing.

Calculation Assumptions for Energy Conservation Target

The energy conservation target of 621 GWh in 2010 for this program was established based on the unit gains and the number of projects as presented in the table below.

TABLE 4.10
CALCULATION ASSUMPTIONS

	Unit gain (kWh/year)	Number of projects (2004–2010)	Energy conservation in 2010 (GWh)
Commercial buildings	100,400	4043	406
Government of Québec buildings	86,700	1129	98
Municipal buildings	45,700	833	38
Traffic signals	1430	112,500 signals	40
EnergyWise Analysis for Small Service Companies	660	58,870 analyses	39

1. Small and Medium Industries (SMI)

The diagram below illustrates the updated approach for small and medium industries.

SMALL AND MEDIUM INDUSTRIES 206 GWh in 2010
<i>Energy Initiatives – Industrial Systems (Initiatives énergétiques – Systèmes industriels)</i> (206 GWh) including:
<i>Decision Support (Aide à la décision)</i> (9 GWh)

4.3.1 Energy Initiatives – Industrial Systems

Program Description

The program consists in encouraging SMI customers to implement energy efficiency measures that do not necessarily meet their profitability criteria by offering them a financial incentive. It covers projects to renovate, expand, or install new plants. To be eligible, a project submitted must generate a minimum of 25,000 kWh of energy savings per year.

In addition to offering financial assistance, the Distributor is making available various tools, guides, technical documents, and supplier referral documents to its SMI customers so as to facilitate the implementation of energy conservation measures. These tools are available on the Hydro-Québec web site.

Key Features

The Distributor seeks to encourage more SMIs to implement energy conservation measures, particularly the more costly ones. For this purpose, it is increasing the financial assistance for this program from 10 to 15 ¢/kWh and the maximum amount granted from \$150,000-\$300,000 and decreasing the required investment recovery period from 18 to 12 months. Not only do these adjustments lower the barrier to the implementation of measures represented by the cost differential of energy efficient equipment, but they also will allow SMIs to be more competitive.

In response to one recommendation of the advisory committee on the municipal component (see section 2.5 of HQD-3, Document 1 of this case), the Distributor is relaxing the rules of the program to promote energy efficiency projects in municipal processes. Thus, for the purposes of the program, the installation of a water supply system or a wastewater and storm water treatment system for a single municipality constitutes an establishment.

The *Decision Support (Aide à la décision)* program, targeting energy efficiency measures that do not require financial support, is merged with this program. The *Decision Support* program had, until now, been presented separately despite the fact that it shared nearly all of its costs with *Energy Initiatives – Industrial Systems*. The energy savings generated by these two programs will be presented separately but on a consolidated budget basis.

Financial Assistance

The changes made to the program are presented in the table below.

TABLE 4.11
CHANGES TO FINANCIAL ASSISTANCE

	Effective before 21 October 2004	Effective as of 21 October 2004
Level of financial assistance	The lowest of the following: <ul style="list-style-type: none"> • 10 ¢/kWh saved on an annual basis following the application of any eligible measure; • the amount necessary to reduce the investment recovery period to 18 months, calculated as a function of the eligible costs; • \$150,000 	The lowest of the following: <ul style="list-style-type: none"> • 15 ¢/kWh saved on an annual basis following the application of any eligible measure; • the amount necessary to reduce the investment recovery period to 12 months, calculated as a function of the eligible costs; • \$300,000

Calculation Assumptions and Energy Conservation Target

The energy conservation target of 206 GWh in 2010 for this program was established on the basis of unit gains per project and number of projects as presented in Table 4.12.

TABLE 4.12
CALCULATION ASSUMPTIONS

	Unit gain (kWh/year)	Number of projects (2004–2010)	Energy savings in 2010 (GWh)
Projects receiving financial assistance	375,000	524	197
Projects not receiving financial assistance	30,000	303	9

2. Large Industries (LI) Market

The diagram below illustrates the updated approach for large industries.

LARGE INDUSTRIES
529 GWh in 2010

<i>Industrial Analysis and Demonstration Program for Large Industries (Programme d'analyse et de démonstration industrielles – Grandes entreprises—PADIGE)</i>	<i>Industrial Initiatives Program for Large Industries Programme d'initiatives industrielles – Grandes entreprises (PIIGE)</i>
60 GWh	469 GWh

4.4.1 Industrial Analysis and Demonstration Program for Large Industries (Programme d'analyse et de démonstration industrielles – Grandes entreprises— PADIGE)

Program Description

The *Industrial Analysis and Demonstration Program for Large Industries* aims to disseminate information, do promotion, and educate customers about electricity conservation, as well as to demonstrate the benefits of new technologies that are more efficient from the standpoint of electricity consumption. The program is divided into two components: analysis and demonstration.

Analysis

This component offers customers financial assistance to conduct an energy analysis covering all forms of energy for an industrial site. The energy analysis must:

- cover total consumption (all forms of energy) of the industrial site;
- raise the awareness of management and staff to energy efficiency with a view to encouraging the implementation of recommended electricity conservation measures;
- give rise to a comprehensive vision of energy efficiency;
- be documented in a written report;
- generate a plan of action for implementation of the energy efficiency measures selected by the customer.

Demonstration

The new technology demonstration component offers customers financial assistance to demonstrate the use of a new, highly electricity-efficient technology implemented for the first time in an industrial sector in Québec.

Key Features

Analysis

The energy analysis component fulfills a need, witness the fact that the number of participating customers has greatly exceeded projections so far. As of 30 September 2004, 35 projects had been accepted. The Distributor expects 16 of these projects to be completed by year-end 2004.

Demonstration

As of 30 September 2004, no applications had yet been received. This result may be explained by the following factors:

- fear of disclosure of confidential information;
- longer implementation time given the need for coordination between customers and equipment manufacturers on such projects.

In addition, of the targets had been based on the introduction of a new “low-e” refining plate technology in the pulp and paper industry that was to generate savings of 60 GWh in 2006. Low-e plate projects are not taking place within the Distributor’s energy conservation programs. The requirement of having to disclose all information was a barrier to customers’ submitting projects under these programs. Moreover, certain plants implemented them without assistance since the return on investment was attractive. Thus, low-e plates have already been introduced in Québec and the Distributor no longer considers them eligible for the demonstration component of the program.

The requirements for demonstration projects were relaxed as of October 2004 to encourage customers to submit promising projects:

- disclosure of results will be subject to prior agreement with the customer;
- the investment recovery period for the technology to be demonstrated is increased from less than one year to less than 10 years;
- the maximum amount of financial assistance per project and per site is increased from \$200,000 to \$300,000.

The Distributor is retaining in its projections only those new technologies that have not yet been implemented in Québec, the impact of which is to raise the average cost of financial assistance per kWh saved.

Typical Case*Analysis*

An energy analysis consists of a comprehensive review of energy consumption from all sources in a plant, identification and recommendation of electricity conservation measures, and proposal of an action plan for their implementation.

Demonstration

The very nature of this component is such that no two projects will be identical; hence there is no such thing as a typical case. The following case is presented as a hypothetical example:

- With financial assistance from the demonstration component of the PADIGE program, a customer signs an agreement with an equipment manufacturer to test a technology new to its industrial sector that has the potential to yield significant electricity savings with respect to the required investment. The results are disclosed so as to encourage customers to adopt this technology.

Electricity Conservation*Analysis*

The purpose of the program is to generate 40 GWh/year in electricity savings by 2010. No savings had yet been recorded as of 30 September 2004 because the completed studies had only been completed recently and there is a time lag between the end of a study and the implementation of the recommended conservation measures. The Distributor expects savings to be realized as of the last quarter of 2004.

The customer signs a contract with the Distributor to provide an action plan concerning the energy conservation measures identified in the analysis. For each measure selected, this plan presents its projected date of implementation and the anticipated annual energy savings. In addition, the customer undertakes to inform the Distributor of any recommendations ensuing from the energy analysis that are in fact implemented within the five (5) years following the signing of the contract.

The 2005–2010 forecasts are based on an assumption of 0.5 GWh of savings per analysis project.

Demonstration

In view of the results as at 30 September 2004, the initial target was reduced to 20 GWh in 2010 for demonstrations of new technologies implemented for the first time in a Québec industrial sector with investment recovery period less than 10 years. The increased maximum investment recovery period broadens the range of eligible projects. This target is based on an assumption of 1.7 GWh per project.

Participants*Analysis*

The Distributor anticipates that 72 more energy analysis projects will be carried out during 2005–2010.

Demonstration

The number of projects anticipated for the period 2005–2010 is 12.

Financial Assistance*Analysis*

The program sets the amount of financial assistance at 50% of the costs of the energy analysis performed by the customer up to a maximum of \$25,000 per analysis. There is also a cumulative maximum of \$25,000 per industrial site.

Over the period 2005–2010, the Distributor estimates the average cost of financial assistance at \$25,000 per analysis for total financial assistance of \$1,800,000 with an average cost of 5 ¢/kWh.

Demonstration

Financial assistance is evaluated case by case with a maximum of 50% of the project costs and a ceiling of \$300,000 per project.

Over the period 2005–2010, the Distributor estimates the average cost of financial assistance at 12 ¢/kWh of savings. Total financial assistance planned for this period is estimated at \$2,400,000.

3. Industrial Initiatives Program for Large Industries (Programme d'initiatives industrielles – Grandes entreprises—PIIGE)

Program Description

This program offers large industrial customers financial assistance for projects designed to reduce electricity consumption.

It does not prescribe specific electricity conservation measures but, rather, provides a set of criteria for acceptance of electricity conservation projects proposed by customers.

Consumption measurements before and after an initiative, demonstrating the reductions achieved, are required in order to obtain financial assistance under the program.

To be eligible, an initiative must meet the following conditions:

- replacement of equipment by more electricity-efficient equipment;

- installation of new equipment designed to reduce the specific electricity consumption of existing processes.

However, the following projects are not eligible:

- addition of new production lines;
- new plant construction or plant expansion;
- energy substitution projects;
- electricity generation or cogeneration projects;
- projects whose investment recovery period is greater than 10 years where the costs are amortized only by electricity savings.

Key Features

The program has been well received so far. As of 30 September 2004, 84 projects representing potential electricity savings of 142 GWh had already been accepted. This should be sufficient to meet the 2003-2006 target of 100 GWh implemented for this program.

Customer participation is appreciable. Several customers have already submitted more than one project and some have reached the limit of \$1 million per plant.

In order to achieve maximum conservation with this program, the Distributor is increasing the per-plant financial assistance limit from \$1 million to 5 million.

The Distributor clarified at the last provincial meetings of large industrial customers in the fall of 2004 that fossil fuel substitution projects are not eligible. However, projects such as solar walls and geothermal energy are accepted and are not considered substitution.

Typical Case

The great variety of plants and processes makes it impossible to present a representative case. The evaluation of the technical/economic potential relies on data from various studies, the analysis of previous programs, and promising technologies.

As examples, with financial assistance from the PIIGE program:

- Certain plants have opted to install variable speed drives on variable pump motors, generating electricity savings by enabling the motor to operate under optimal conditions.

- Certain industrial facilities will reduce the consumption of their refrigeration systems with the help of natural cooling or by modulating operational variability using ice banks.
- Certain plants are replacing the compressed air used in their processes with supply air, which requires 2–3 times less electricity to produce.

Electricity Conservation

The program's target is to generate 469 GWh of energy savings in 2010 based on an assumption of 2 GWh per project. The energy savings estimate is based on the history of projects already submitted.

Participants

The Distributor anticipates that 237 energy initiative projects will have been carried out by year-end 2010.

Financial Assistance

The program sets financial assistance at the lowest of the following four amounts:

- amount to bring the investment recovery period (investment recovery period) for the project to 1 year;
- 75% of project costs;
- 15 ¢/kWh saved, calculated for the first full year of operation;
- \$350,000 per project.

Over the period 2003–2010, the Distributor estimates the average unit cost at 10 ¢/kWh and at 15 ¢/kWh for the latter years of the time horizon to account for the fact that the least costly projects will be completed first. The total financial assistance to be allotted over this period was set at \$54.4 million.

4. Publicity – Communication – Promotion

Internet

The Hydro-Québec website for large industry customers offers a virtual library containing reference works on energy efficiency.

It also informs customers about programs available to them, providing complete guides to the operation of the programs as well as project proposal forms.

In 2005, the Distributor will update the site by publishing a list of electricity conservation measures broken down by industrial sector, among other information.

Program Promotion

Programs will be promoted using the following methods, among others:

1. Meetings with customers, industrial associations, and engineering consulting firms.
2. Participation in industrial trade shows.
3. Advertising in trade journals.

Recognition Activities

Recognition activities will be held starting in 2005 to highlight the electricity conservation efforts of the plants and to encourage customer participation in industrial energy efficiency programs for large industries.

4.5 Core Components

4.5.1. Planning and Design

Description of Activity

This basic PGEE activity is divided into two parts: planning and design.

1. **Planning:** ongoing information watch and specific benchmarking against practices and trends in the field of energy efficiency (energy economics, management, and use); updating of technical/economic potentials, market strategies and approaches; strategic partnerships (e.g. AEÉ, OEE); preparation of annual budget requests and their regulatory processing; identification of action areas; management of PGEE portfolio of programs and activities; consolidation for the Distributor of all PGEE-related information (demand forecasting, supply plan, rate case, and business plan).
2. **Design:** Choice of concepts and strategies appropriate to each clientele or program; preliminary and feasibility studies for all components of an energy conservation (or energy efficiency) program, i.e., inventory of products or services covered, structure of this market (manufacturers, Distributors, retailers, installers, contractors, architects, engineers, other consultants and influencers), required training, choice of most effective media of communication, and required levels of technical support (tools, information, advice) and financial support.

Key Features/New Features**1. Planning:**

- preparation and holding of meetings planned in the context of Phase 2 of case R-3519-2003;
- regulatory processing of this case;
- preparation of the 2006 budget request.

In order to enrich the activity (following case R-3526-2004), the Distributor proposes for 2005 the implementation of three new specific components, each of them including a description and a budget request:

- implementation of a Backbone Initiatives in Efficient Technologies (PISTE) process (section 4.5.5).
- implementation of an ongoing consultation process (section 4.5.6);
- substantial financial contribution to the review of the applicable Québec regulations in this area (section 4.5.7).

2. Design

The Distributor's priority design work in 2005 will deal with the EnergyWise and Energy Star programs for residential and business customers, the new components of the *EnerGuide Energy Inspection (Inspection énergétique EnerGuide)* and *Novoclimat* programs, the *Low-Income Housing Renovation (Rénovation des habitations à loyer modique)* program, the governmental and municipal components of the *Support for Building Energy Efficiency Optimization Initiatives* program, continuation of the pilot project with Négawatts Production inc., and evaluation of opportunities in the agricultural market.

As applicable, preliminary and feasibility studies will be performed for equipment recommissioning, renovation of buildings with four or more dwellings, mixed-use buildings (residential and commercial) and small businesses.

In order to carry out all the work contemplated for this activity, the Distributor is requesting a budget of \$2,300,000 for 2005.

5. *Communication*

Description of Activity

In application R-3473-2001, the Distributor expressed its intention to carry out general communication activities designed to support the execution of the PGEÉ as a whole by publicizing the programs offered and educating customers to the value and importance of participating in them.

The Distributor's communication plan for the 2005-2010 horizon has been considerably enhanced for the following reasons:

- The Distributor observed that the efforts devoted to communication were insufficient to create the requisite awareness of the PGEÉ programs and, especially,
- The execution of the PGEÉ 2005-2010, whose scale is much larger than that of the PGEÉ 2003-2006, will require stepped-up communication efforts not only to ensure that customers fully understand the energy conservation tools being offered to them but also to motivate them to participate in this project of great societal importance.
- The Distributor is adding a recognition component for public recognition of customers, partners, and collaborators who carry out significant or innovative energy efficiency projects.
- The Distributor reiterates that besides the core communication efforts that may be termed "general," specific, more targeted communication activities are also being carried out within each of the programs.

The core communication activities are of two types:

- General public education activities concerning energy efficiency in general and the programs offered by the Distributor and, in some cases, its partners.
- Activities or events promoting a group of programs.

Communication Efforts Planned for 2005

Table 4.13 below presents, in outline, the list of core communication activities planned for 2005.²

² The list of core communication activities carried out in 2004 is presented in section 2.2 of Exhibit HQD-2, Document 1 of this case.

TABLE 4.13
2005 CORE COMMUNICATION ACTIVITIES

Activity	Budget (in thousands of \$)
Advertising <ul style="list-style-type: none"> • Promotional material, design and development of messages, placement in written and TV media, EnergyWise website 	5010
External communication – customer support component <ul style="list-style-type: none"> • Hydro-Contact, messages on invoices, 1-800-ENERGIE line 	180
External communication – events component <ul style="list-style-type: none"> • EnergyWise events at points of sale or other special projects in partnership with manufacturers and retailers, including promotional material, stands • Infomercials 	1349
Internal communication <ul style="list-style-type: none"> • Information and awareness meetings, including presentation tools, lunch/learn sessions, promotional posters 	200
Education component <ul style="list-style-type: none"> • Educational activities for youth: school visits, curriculum content for teachers, Montreal Science Centre • Presentations to businesses 	300
Concept testing and awareness surveys <ul style="list-style-type: none"> • Campaign pre-testing and post-testing 	50
CI and SMI partnerships	1850
Recognition activities	500
Management of communication activities	553
TOTAL	9992

4.5.3 Monitoring and Evaluation

In its June 2003 decision on the PGEÉ 2003–2006 (D-2003-110), the Régie stated that “*the monitoring and evaluation process is of critical importance*” in achieving the objectives of the PGEÉ. The scale of the PGEÉ 2005–2010 heightens the importance of implementing a structured plan. The Distributor is filing its monitoring and evaluation plan as Exhibit HQD-2, Document 1 of this case. The cost of the entirety of the planned work represents a budget request of \$1.9 million for this activity in 2005.

4.5.4 Technological Demonstration and Experimentation Initiatives (Initiatives de démonstrations technologiques et d'expérimentations—IDÉE)

Description of Activity

In 2004 the Distributor clarified the RDDE component approved by the Régie in its previous decisions. As indicated in the evidence for case R-3473-2001, and with a view to minimizing the financial risks, the activity is situated at the level of demonstration and experimentation (D&E). In this way the Distributor seeks to intervene at an essential stage of the energy efficiency technology development cycle, downstream of R&D

(research and development) and upstream of commercialization. The activity, now called IDÉE, is designed to provide the resources necessary to:

1. Stimulate the market to design energy efficiency D&E initiatives.
2. Promote the execution of D&E projects.

A demonstration (or technological showcase) project serves to validate the benefits, cost-effectiveness, and commercial promise of a new technology or a new application of an existing technology. It is a “life-size” project.

An experimentation project serves to validate the technical and energy performance of a new technology or a new application of an existing technology. It is a “lab-size” project.

The IDÉE activity accommodates project submissions on an ongoing basis and also by means of an annual call for proposals.

For the sake of transparency and market representativity, the Distributor decided to form an advisory committee composed of 12 members. Each member of this committee can express the specific concerns of various market segments. These persons all have specific experience in their spheres of action. Their role is to assess and recommend the acceptance or rejection of project proposals submitted. The advisory committee members are presented in Appendix 2.

Key Features/New Features

So far the committee has reviewed and approved its guide to operations, project selection process, and project evaluation criteria.

At the next meeting, projects will be submitted for approval. The first call for proposals should take place in the first quarter of 2005.

The IDÉE activity is composed of three main stages:

- technical validation of projects by Distributor’s personnel according to specific criteria;
- after evaluation and recommendation by the advisory committee, financial assistance for execution of energy efficiency demonstration or experimentation projects is granted as applicable;
- follow-up and technical coaching throughout the project execution phase for a maximum duration of thirty-six (36) months are supported by the Distributor, which reports to the committee.

Nature and Level of Assistance (Support)

Experimentation project:

- Maximum \$75,000 per project or maximum 60% of cost differential of project

AND

- Minimum 25% of applicant/customer's investment.

Demonstration project:

- Maximum \$250,000 per project or maximum 60% of cost differential of project

AND

- Minimum 25% of applicant/customer's investment.

Budget Request for 2005

The Distributor is requesting a budget of \$1.5 million for this activity in 2005. However, it submits that with respect to projects exhibiting strong energy conservation potential and market replicability, it would like the advisory committee to manage applications within a three-year envelope of \$4.5 million. During the Régie's annual follow-up, the Distributor will specify the status of disbursements and commitments for each project.

The \$1.5 million annual budget request comprises:

- financial assistance for projects selected by call for proposals and without call for proposals;
- costs of tests, follow-up, and measuring by the Energy Technologies Lab (Laboratoire des technologies de l'Énergie);
- a specific budget allowance for university student projects;
- costs of preparation, logistics, and participation for this committee.

The demonstration projects for large industry are covered by the PADIGE program (see section 4.4.1).

4.5.5 *PISTE (Backbone Initiatives in Efficient Technologies)*

Description of Activity

The proposal to implement the PISTE activity is yet another demonstration that the Distributor is willing to enhance its PGEE so as to reach or even exceed the energy conservation target it has set for 2010. With this new activity, it will test the profitability and commercial acceptability of opportunities offered by the market. These opportunities could be based on the implementation of little-known technologies and/or commercial approaches considered by the Distributor to be insufficiently perfected or developed for inclusion in the PGEE at this time. Depending on the nature of the projects and energy conservation measures involved, certain technological adaptations may be necessary.

As illustrated in the diagram below, the Distributor situates this new activity downstream of the IDÉE activity and upstream of the programs offered and proposed.

Research and development	Lab-scale prototype	Experimentation and pilot project	Demonstration	Commercialization	Proliferation in the market
IDÉE		PISTE			PROGRAMS
Possible technological adaptations					

Selected projects that pass the PISTE testing stage will be wholly or partially incorporated into the PGEE at a later date. Unlike IDÉE, in which experimental projects must be carried out on one customer's premises, those submitted to PISTE may be carried out on the premises of a sample of the target clientele.

Primarily inspired by the experience of US initiative funds managed by the Northwest Energy Efficiency Alliance (NEEA) and the New York State Energy Research and Development Authority (NYSERDA), the Distributor will manage this activity by means of an annual call for proposals. With the help of an advisory committee representing various customer segments and interests, it will define the niches for which it will issue such calls for proposals. This committee will assist the Distributor in analyzing proposals received and will produce recommendations in accordance with a set of criteria to be defined. The Distributor will keep it informed of the progress of the selected projects.

Nature and Level of the Assistance (Support)

The Distributor plans to allocate 5% of the annual value of the budgets for all of its programs for the current year to these market tests, representing a sum of \$4.7 million in 2005. The breakdown and level of assistance granted per project will be defined with the external committee. The projected budget includes the costs associated with measuring the impact of the projects carried out by the Distributor.

Goal of Participation

During its annual follow-up exercises, the Distributor will report to the Régie the commercial and energy reduction targets of the selected projects, their status and progress, and the ensuing evaluation.

Budget Requested for 2005

The \$4.7 million budget requested for 2005 breaks down as follows:

- \$0.3 million for the development of processes and procedures, calls for proposals, training, communication;
- \$0.2 million for management, including expenses of the external committee and supervision of follow-up and evaluation to be conducted by Hydro-Québec Distribution staff; and
- \$4.2 million in financial assistance for project execution.

4.5.6 Ongoing Consultation

Description of Activity

In view of its will to maximize energy conservation under the conditions expected by various segments of its clientele, the Distributor wishes to specifically evaluate the interests and needs of these clientele. Thus, the Distributor wants to implement four standing consultation roundtables in early 2005, each representing a portion of its main clientele. Each of these roundtables will be composed of customers, organizations representing them, and stakeholders interacting with them.

This consultation will involve the following clientele:

- i) residential market;
- ii) commercial and institutional markets;
- iii) municipal market;
- iv) small and medium industries market.

As regards the large industries, the consultation will take place in the form of individual meetings with customers and through their personalized business relationship with HQD, enabling the latter to obtain ongoing feedback on its programs.

Participation Target

Each of the roundtables will enable the Distributor to identify the strengths and weaknesses of its activities and programs, solutions to the obstacles encountered, as well as new opportunities that may ultimately lead to new programs.

Budget Requested for 2005

The Distributor is requesting a budget of \$460,000 in 2005 to carry out this activity, allocated as follows:

- \$300,000 for preparation, facilitation, and logistics of these roundtables;
- \$160,000 for participation expenses.

4.5.7 Regulation

Description of Activity

Recommendation no. 5 of Opinion A-2004-01 stated that:

The government must initiate and implement a national energy efficiency plan, including at a minimum:

- a) an improvement in the energy performance of its buildings and vehicles;*
- b) a modernization of construction equipment standards and regulations;*
- c) an awareness and education campaign.*

Concerning the modernization of equipment standards, the Distributor is pursuing its involvement in various provincial and national committees. Meanwhile, the AEÉ is cooperating on an ongoing basis with the federal authorities and those of other provinces in an effort to achieve a degree of harmonization of their respective regulations. Any emerging proposals to amend the regulation will not only consider gains in terms of energy efficiency but should also be aimed at measuring the economic impacts of such gains.

Further to this opinion and the numerous recommendations made by the intervenors in case R-3526-2004, the AEÉ and the Distributor agreed upon a professional and financial contribution to the work of the working group officially formed in April 2004, whose mandate is to review the energy efficiency regulations for Québec buildings.

Principal Goals of Working Group

- To establish the current status of Québec by reviewing regulations existing in Canada, industrialized countries, and countries having trade relations with Québec in the building sector.
- To justify the relevance of revising the existing regulations.
- To assess possible approaches for the revision and to propose a realistic revision scenario.
- To establish the broadest possible government-level consensus around the proposed scenario by striving for synergies between the proposed scenario and other government policies, plans and programs.
- To obtain the industry's and public's positions on the draft revision.
- To provide the Government of Québec with the information necessary to make an informed decision on revision of the regulations.

Methods

The implementation of the new regulations would be preceded by a period of market transformation designed to facilitate the introduction and assimilation of new building energy performance requirements. The new regulations would thus be preceded and accompanied by an awareness, training, and technical support program for building designers (technologists, architects, engineers), builders, municipal inspectors, and other industry stakeholders.

The timeline for this working group calls for the implementation of the new regulations by the Government of Québec in January 2007.

Project Costs

According to the AEE, the Project costs are estimated at \$4.8 million for the period from 1 April 2004 to 31 December 2007, nearly 30% of which will be funded by HQD and the rest by the other partners, these being the AEE, the Régie du bâtiment du Québec, the Ministry of the Environment of Québec, the Ministry of Natural Resources, Wildlife, and Parks of Québec, the Société d'habitation du Québec, the Société immobilière du Québec and the OEE.

Nature and Level of the Assistance (Support)

In addition to being a partner, the Distributor will participate at two levels:

- Professional contribution to the working group's studies and analyses.

- Financial support for the project and the work of the working group in an amount of \$0.8 million for 2005, \$0.6 million for 2006, and \$0.2 million for 2007.

Anticipated Results of Regulations

The implementation of the new regulations would significantly contribute to reducing the energy consumption of new buildings in Québec. Further to these efforts to heighten Québec's standards, beyond the impacts already factored in for these programs, the Distributor takes credit for annual savings on the order of 200 recurrent GWh implemented as of year-end 2010, divided between the residential and CI markets.

5 ECONOMIC AND FINANCIAL ANALYSES

This section presents the economic and financial evaluation of the PGEÉ for the period 2005–2010. It demonstrates that the plan passes the usual economic tests, i.e., the total resource cost (TRC) test and the participating customer (PC) test. As with the PGEÉ 2003–2006, the analyses are done over the lifetime of each measure implemented during the plan's horizon (2005–2010).

The economic analysis takes account of the costs to be incurred during the period 2005–2010 and the associated savings. The years 2003 and 2004, during which the Distributor, its partners, and the participating customers invested \$85 million for 167 GWh are not taken into account in this analysis.

The financial analysis measures the impact on the Distributor's required revenues under the plan at the 2010 horizon. It takes into consideration the costs borne by the Distributor, the avoided costs, and the loss of revenues associated with this new plan. As with the economic analysis, the impacts of costs already incurred for the years 2003 and 2004 are not included in the evaluation.

5.1 Updating of Economic Parameters

The economic and financial analyses are performed with the updated parameters. The parameter changes with respect to the evidence filed in case R-3519-2003 are given below.

- Nominal discount rate of 6.75% in accordance with decision D-2004-47 (R-3492-2002, Phase 2).
- Elimination of the tax on gross income and consideration of the Tax on Public Services (TSP) in accordance with the government's directive of June 2004. This tax resembles the capital tax and is set at 0.55% of the value of undepreciated capital assets.

- The financial analysis is performed taking into account the rates in effect since 1 April 2004.
- Capitalized borrowing costs are taken into account in the financial analysis of the PGEÉ 2005-2010. These costs are added to the analysis because the investments are not commissioned until December 31 of each year. The calculation is done on a monthly basis at a rate of 6.75%, that is, the average rate of the prospective cost of capital.
- The avoided costs were updated as presented in detail in section 3.1 of Exhibit HQD-3, Document 1 of this case. The principal adjustments are:
 - ◆ Consideration of a short-term supply cost for 2005 of 7.5 ¢/kWh.
 - ◆ Rise in the cost of supply from 6.1 to 6.5 ¢/kWh as of 2006 (application of decision D-2004-96).
 - ◆ Addition of a winter power cost as of 2011 (application of decision D-2004-96).
 - ◆ Updating of avoided costs of transmission/local load and distribution based on the investment plans as filed in case R-3520-2003 for transmission and R-3492-2002 Phase II for distribution.

5.2 Economic and Financial Analyses

The Distributor used the usual tests to evaluate this PGEÉ for the period 2005-2010, i.e., the total resource cost (TRC) test, the participating customer (PC) test, and the analysis of the impact of the Comprehensive Plan on the Distributor's required revenues. In addition, the rate neutrality test (RNT) was performed for purposes of information.

To obtain more substantial energy reduction volumes, the Distributor had to support more costly measures and raise direct financial assistance to customers. As a result, the unit costs of the various programs for each market (residential, commercial, institutional, industrial) increased significantly with respect to the PGEÉ 2003-2006 (R-3519-2003).

Table 5.1 illustrates, in cents per kilowatt hour, the unit costs (in increasing annual installments) for the Distributor and the participating customers and partners, of the PGEÉ for the period 2005-2010 and the PGEÉ 2003-2006.

TABLE 5.1
INVESTMENTS BY HQD
AND PARTICIPATING CUSTOMERS AND PARTNERS

	PGEÉ 2005–2010		PGEÉ 2003–2006		Change 2005–2010 vs. 2003–2006	
	HQD invest.	Participant/ partner invest.	HQD invest.	Participant/ partner invest.	HQD invest.	Participant/ partner invest.
¢/kWh						
Residential market	3.09	1.54	1.57	2.33	97%	-34%
Commercial and institutional markets	2.97	2.33	1.89	2.21	57%	5%
Small and medium industries market	2.79	1.61	2.58	1.16	8%	39%
Large industries market	1.66	1.25	1.19	0.50	39%	149%
Subtotal for all markets	2.80	1.65	1.66	1.67	69%	-1%
Core components for all markets (over all GWh of the plan)	0.48	0.40	0.24	0	101%	n/a
For entire PGEÉ	3.00	2.02	1.90	1.85	58%	9%

The Distributor's unit cost for the entire plan rises from 1.9 to 3 ¢/kWh for a 58% increase. This increase is 97% for residential customers; thus for this segment, the Distributor had to multiply its investments by six (6) in order to be able to triple its energy conservation target. For commercial and institutional customers, the increased unit costs to Hydro-Québec Distribution are 57%, and 8% and 39% for SMI and LI customers, respectively. One may also note that the PGEÉ for the period 2005–2010 forecasts unit costs to the Distributor of nearly 3 ¢/kWh for all markets except the large industries market.

For participating customers and partners the unit cost rises by 9%, or six (6) times lower than the increase absorbed by the Distributor.

TABLE 5.2
RATIO OF DISTRIBUTOR'S AND PARTNERS'
INVESTMENTS TO TOTAL INVESTMENTS

	PGEÉ 2005-2010				PGEÉ 2003-2006			
	HQD inv.	Partic. & partner inv.	Total inv.	Ratio HQD inv./total inv.	HQD inv.	Partic. & partner inv.	Total inv.	HQD inv./total inv.
¢/kWh								
Residential market	3.09	1.54	4.63	67%	1.57	2.33	3.9	40%
Commercial and institutional markets	2.97	2.33	5.30	56%	1.89	2.21	4.1	46%
Small and medium industries market	2.79	1.61	4.39	63%	2.58	1.16	3.73	69%
Large industries market	1.66	1.25	2.91	57%	1.19	0.50	1.70	70%
Subtotal for all markets	2.80	1.65	4.45	63%	1.66	1.67	3.33	50%
Core components for all markets (over all GWh of the plan)	0.48	0.40	0.88	55%	0.24	0.00	0.24	100%
For entire PGEÉ	3.00	2.02	5.02	60%	1.90	1.85	3.75	51%

The ratio of the Distributor's investments to the total investments indicates that the share of investments borne by the Distributor is larger in the period 2005-2010 than 2003-2006 and that this share is relatively equal across all markets at about 60%. The PGEÉ at the 2010 horizon is, in this sense, more balanced than the PGEÉ 2003-2006, and better responds to the concern for equity among the different clienteles.

The tables below present the overall results of the economic and financial analyses. The details of these analyses are presented in Appendix 3.

TABLE 5.3
RESULTS OF ECONOMIC ANALYSIS OF PGEÉ 2005-2010

In million 2005 dollars	TRC	PC	RNT
Residential market			
Residential analysis	94.2	112.5	(2.3)
AEÉ Novoclimat	34.3	53.2	(5.6)
AEÉ EnerGuide energy efficiency inspection	42.0	106.0	(12.3)
AEÉ low-income households	7.8	20.4	(7.9)
Energy efficiency renovation for low-income buildings	1.5	3.5	(1.4)
EnergyWise – Energy Star Product Promotion for the Business Market	116.4	144.0	(4.5)
Subtotal – Residential Market	296.2	439.6	(34.1)
Commercial and institutional markets			
Support for Building Energy Efficiency Optimization Initiatives	111.5	153.4	(9.9)
EnergyWise – Energy Star Product Promotion for the Business Market	91.1	194.1	(61.2)
Subtotal – CI Markets	202.5	347.6	(71.1)
SMI Market			
Support for Industrial Systems Initiatives	42.5	67.2	(12.8)
Subtotal – SMI Market	42.5	67.2	(12.8)
LI Market			
PADIGE	18.6	14.4	6.6
PIIGE	119.5	96.4	41.4
Subtotal – LI Market	138.1	110.8	48.0
Subtotal for all markets	679.4	965.2	(70.0)
Core components for all markets	(22.8)	39.1	(43.0)
For entire PGEÉ	656.6	1004.3	(113.0)

TABLE 5.4
IMPACT ON DISTRIBUTOR'S REQUIRED REVENUES
(CURRENT M\$)

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Residential market									
Impact of long-term prepayment account									
Costs avoided by Distributor									
Lost revenues									
Impact on Distributor's required revenues									
Institutional and commercial markets									
Impact of long-term prepayment account									
Costs avoided by Distributor									
Lost revenues									
Impact on Distributor's required revenues									
Small and medium industries market									
Impact of long-term prepayment account									
Costs avoided by Distributor									
Lost revenues									
Impact on Distributor's required revenues									
Large industries market									
Impact of long-term prepayment account									
Costs avoided by Distributor									
Lost revenues									
Impact on Distributor's required revenues									
CORE COMPONENTS									
Impact of long-term prepayment account									
Costs avoided by Distributor									
Lost revenues									
Impact on Distributor's required revenues									
GRAND TOTAL (Measures and Core Components)									
Impact of long-term prepayment account									
Costs avoided by Distributor									
Lost revenues									
Impact on Distributor's required revenues									

Despite the higher amounts invested by the Distributor, the new plan passes all the economic tests. Thus, the total resource cost (TRC) test is \$657 million (2005 dollars) and the participating customer (PC) test is \$1004 million (2005 dollars).

The maximum impact on the Distributor's required revenues is \$138.6 million. This occurs in 2010 and represents 1.6% of the 2004 projected revenues. However, the real

impact on the required revenues will normally be lower as a function of any rate increases that may be applied in the period from 2005-2010.

Compared to the results of the evidence in R-3519-2003, the results of the TRC and PC tests are significantly higher. This is due to the fact that in the PGEÉ 2005-2010, the annual energy conservation target is four (4) times higher and the avoided costs (2005 and onward) are 35% higher, as detailed in HQD-3, Document 1, section 3.1.3.