LE GOUVERNEMENT
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Luxembourg 2020

National Reform Program
for the Grand Duchy of Luxembourg
under the Europe 2020 Strategy

The European Semester – April 2011

ACRONYMS

ABBL	The Luxembourg Bankers' Association
ADEM	Labor Administration
AIP	Professional Insertion Activities
ALJ	Local Youth Action
CAE	Work-Support Contract
CASNA	Welcome center for newly arrived students
CCSS	Joint Social Security Centre
CEPS	Centre for Population, Poverty and Socio-Economic Policy Studies
CES	Economic and Social Council
CFE	Financial Contributions by the State
CIE	Initial Employment Contract
CIE-EP	Initial Employment Contract - Practice
CIPU	Urban Policy Information Cell
CNS	National Health Fund
CPTE	Permanent Committee for Labor and Employment
CRP	Public Research Center
CSL	Employees' Chamber
CTIE	Centre for Information Technologies of the State
DIRD	Gross domestic expenditure on R & D
DSGE	Dynamic Stochastic General Equilibrium
EFT	Labor Force Survey
EPC	Economic Policy Committee
ETS	Emission Trading Scheme
FNR	National Research Fund
FNS	National Solidarity Fund
ESF	European Social Fund
GHG	Greenhouse Gas Emissions
IFBL	Luxembourg Institute of Banking Education
IGSS	Inspectorate General for Social Security Administration
IVL	*Integratives Verkehrs-und Landesentwicklungskonzept*
OCM	Open Coordination Method
NEET	Not in Education, Employment or Training
NREAP	National Renewable Energies Action Plan
NGO	Non Governmental Organization
PAEE	National CO2 Emissions Quota Allocations Plan
GDP	Gross Domestic Product
NRP	National Reform Program
PRO-SUD	Syndicate of Communities for the Promotion and Development of the South Region
SGP	Stability and Growth Program
R&D	Research and Development
RDI	Research-Development-Innovation
RMG	Guaranteed Minimum Income
SNAS	National Social Action Service
SNJ	National Youth Service
SPOCS	Simple Procedures Online for Cross-border Services
SRAS	Regional Social Action Service
SSM	Minimum wage
STATEC	Luxembourg national statistical institute
SVO	Voluntary Guidance Service
SYVICOL	Syndicate of Cities and Towns in Luxembourg
EU	European Union
UEL	*Union des entreprises luxembourgeoises* (Employer's Organization)

Preliminary Remarks

This report, entitled Luxembourg 2020, is the final version of the National Reform Program for Luxembourg prepared as a part of the Europe 2020 strategy and the first European Semester. This edition of the NRP is the update of the temporary and transitory publication of November, 2010.

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1. Introduction

The recent economic and financial crisis has had the effect of greatly reducing employment and potential production and has significantly weakened the state of public finances. The European economic recovery plan has enabled EU member states to face this crisis, partly through coordinated measures that have illustrated that synchronizing economic policies at EU level produces significant results provided they are reinforced. This was the perspective adopted by the European Council in the first half of 2010 when it adopted the Europe 2020 Strategy[1], successor of the Lisbon strategy, which will help the EU and its member states emerge strengthened from the crisis.

In the first half of 2010, the government presented a strategic plan incorporating 65 measures to improve the country's competitiveness and remove various obstacles to growth[2]. For the most part, the social partners validated these measures. Although cost competitiveness must be closely monitored[3], the challenges cannot be summed up solely by proposing reductions in costs. The digital economy, innovation and productivity, effective use of resources, especially by means of a transversal and integrative territorial process as with IVL and sector plans, administrative simplification through one stop shops and developing SMEs, using the internal market to its fullest potential and social inclusion and cohesion and equality between men and women as a transversal objective through gender mainstreaming must make up the structural pillars of the National Reform Program (NRP) in the long term. These challenges and objectives are closely linked. The digital revolution is currently causing deep-seated change in all aspects of social life, especially the ways in which knowledge is disseminated and comprehended. Higher levels of education improve employability and thus ensure increased employment rates that help reduce poverty. A greater capacity for R&D and innovation, combined with heightened efficiency in using resources improves competitiveness and promotes new job creation.

As did the other Member States, the government of Luxembourg made public a temporary and transitory version of its NRP Luxembourg 2020 in November, 2010, preliminary to implementing the Community's Europe 2020 strategy and in anticipation of the launch of the first European semester[4]. Extensive consultations were conducted concerning the project in Luxembourg between November 2010 and April, 2011. A second orientation debate took place in Parliament in early March, 2011, following the one held in June, 2010. The social partners were also consulted on several occasions between the time the transitory report was submitted in November, 2010 and its final submission in April, 2011, both on the subject of new economic governance and on the issue of national objectives and reforms that Luxembourg set for itself last November as part of the Luxembourg 2020 strategy.

This report is the finalized version of the November, 2010 NRP draft. It takes into account the clarifications resulting from the consultations procedure and provides greater detail than the transitory report. This includes the measures that address the priorities identified in January,

[1] For more details see: http://ec.europa.eu/eu2020/index_fr.htm
[2] For more details see: http://www.eco.public.lu/ (20 April, 2010) and http://www.gouvernement.lu/gouvernement/etat-nation/etat-nation-2010-fr/index.html
[3] For more details see: http://www.odc.public.lu/actualites/2010/10/Bilan_Competitivite_2010/index.html
[4] For more details see: http://www.odc.public.lu/actualites/2010/11/PNR_Luxembourg_2020/index.html

2011 by the Commission as part of its Annual Growth Survey[5] and validated by the European Council in March, 2011[6] as well as the flagship initiatives of Europe 2020. It also includes specific measures that the government will be taking over the upcoming twelve months as part of the "Euro Plus Pact"[7]: a stronger economic policy coordination for competitiveness and convergence. This encompasses the delaying of the automatic wage indexation, the stability of social contributions, the neutralization of the increase of the minimum wage (SSM), administrative simplification and infrastructures, the reform of the Labour Administration (ADEM), an increase of the co-financing rate of the State's portion of lifelong learning, the reform of the pension scheme and the bolstering of the stability of the financial sector[8].

The government is addressing the macro structural bottlenecks to growth under the framework of macroeconomic surveillance of the Europe 2020 strategy. The broad national objectives for employment and smart, sustainable and inclusive growth were set through thematic coordination and the government is now focusing on implementing them. These include:

- The implementation of a "knowledge triangle" within the *Cité des Sciences*, multi-sector specialization policies, the Luxembourg national library projects in the area of digital information and its role as guardian of intellectual production and national provider of documentation services, the master plan for implementing information technologies within the State, the third SME action plan, etc.
- The Environment and Climate Partnership, the national plan for reducing CO_2 emissions, the national climate change action plan, the renewable energies action plan, the energy efficiency action plan, the master plan for territorial reorganization, the rural development program, etc.
- Promotion of social inclusion and the fight against poverty, the equal rights action plan addressing socio-economic relations between men and women, pilot projects and reforms in relation with early school leavers, etc.

This NRP must have the backing of sustainable public finances over the long term. Public expenditures on infrastructure will continue at their heightened level thus remaining compatible with the objective of a return to a balanced budget by 2014, as formulated in the Stability and Convergence Program in 2010[9]. Therefore, it is fundamental that the measures and objectives included in the framework of the NRP take into account the limitations of the budget strategy in the medium term. Furthermore, it is important to speed up the pace of structural reforms in order to sustain growth potential. Implementing the national Europe 2020 strategy is therefore inscribed in a macroeconomic scenario.

The government is aware that the sustainability of public finances, and specifically financing social protection systems, plays a primordial role in medium and long-term macroeconomic

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[5] European Commission, Annual Growth Survey: advancing the EU's comprehensive response to the crisis, COM(2011) 11 Final, Brussels, 12 January, 2011

[6] This involves measures that aim to: make work more attractive; help the unemployed get back to work; combat poverty and promote social inclusion; invest in education and training; balance security and flexibility; reform pension systems; attract private capital to finance growth; boost research and innovation; and allow cost-effective access to energy and step up energy efficiency policies.

[7] THE EURO PLUS PACT – STRONGER ECONOMIC POLICY COORDINATION FOR COMPETITIVENESS AND CONVERGENCE European Council, Conclusions, EUCO 10/11, 24 and 25 March 2011

[8] For this, measures taken by Luxembourg will subsequently be referred to as "The Euro Pact" in a footnote.

[9] For more details see: http://www.mf.public.lu/publications/index.html

surveillance. In as much as these systems play an essential role in maintaining social cohesion, especially during times of economic difficulty and incertitude in a changing world, the quality of public finances cannot be considered as a constraint to the entire social protection system. The social purpose of the system goes hand in hand with its economic purpose, which is to maintain a balance between available revenue of inhabitants and offering credible guarantees for services. Thus, rather than making the social domain a part of the social assistance objective, social protection, social assistance and social security are treated transversally within the NRP, and are not based solely on economic and financial considerations. The government is committed to preserving this essential instrument of social policy and is prepared to adapt clear requirements to it to enable the system to successfully confront issues that arise to challenge it.

In conclusion, the national objectives and measures of the NRP are compatible with those of the second National Sustainable Development Plan (PNDD) adopted by the government at the end of November, 2010. Major efforts to be implemented under Luxembourg 2020 will cause the country to emerge strengthened from the crisis and turn its economy toward smart, sustainable and inclusive growth.

2. Macroeconomic scenario

It is fundamental that the budgetary impact of the measures and objectives in the framework of the NRP take into account the limitations of the budget strategy in the medium term. Thus the Luxembourg 2020 strategy uses the same assumptions used in the macroeconomic projections of the stability and growth program (SGP). These macroeconomic predictions for the medium term were drawn up under the scenario of the economic and financial crisis and involve no additional negative and specific impact on Luxembourg's financial sector. The medium-term macroeconomic scenario assumes the following:

- GDP growth in volume of 3.2% in 2011, 3.5% in 2012, 3.7% in 2013 and 4.0% in 2014.
- Nominal GDP growth of 5.0% in 2011, 5.6% in 2012, 6.4% in 2013 and 6.5% in 2014.
- Potential output growth of 2.7% in 2011, 2.6% in 2012, 2.6% in 2013 and 2.5% in 2014.

For the long term, the government has aligned its main economic hypotheses with those in the macroeconomic scenario used by Luxembourg as part the Working Group on Ageing Populations and Sustainability of the EU Economic Policy Committee[10] and its recent report on ageing referring to the period 2008-2060 (EC-EPC (AWG) 2009 projections)[11].

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[10] For more details see: http://europa.eu/epc/working_groups/ageing_en.htm

[11] European Commission , 2009 Ageing Report : economic and budgetary projections for the EU-27 Member States (2008-2060), in European economy, 2009, pp.382-384
For more details see: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf

3. Macroeconomic surveillance [12]

3.1 Macro-Financial Stability

In 2010, the public administration experienced a financing requirement equivalent to 1.7% of GDP, or € 710 million. A stable economic recovery in 2011, evincing a growth rate in volume of 3.2%, combined with consolidation measures of public finances set by the government in 2010 for 2011-2012, resulted in a drop in the public deficit to 1.0% of GDP, or € 437 million, conforming to the provisions of the stability and growth program for 2011-2014.

The government continues to implement a prudent budget policy, ensuring that growth strategies and programs to provide stability are mutually fortifying. From this perspective, the stated objective of budget policy is to return to a balanced budget through to 2014.

The budget consolidation measures approved in 2010 and implemented for 2011 and 2012 mark an important phase in achieving this objective for the medium term. In view of the numerous hazards bearing on economic forecasts that could have either positive or negative effects, a mid-term review of budget policy will be carried out in 2012 consisting of an evaluation of progress achieved and, if needed, determination of additional budget consolidation measures to achieve the objective of a balanced budget in 2014.

The short and medium term budget consolidation contributes to the objective of achieving sustainable public finances. In view of its demographics and the structure of its labour market, Luxembourg is faced with a major increase in public spending related to the ageing of the population. In order to ensure the permanence of the social security system, the government is committed to reforming the pension system. The salient features of the reform were presented in March, 2011 and currently are under consultation with the social partners[13].

Lastly, the government wishes to avoid a substantial increase in the public debt and related expenses. Indeed, the sovereign debt crisis in Europe brings to the fore the importance of budgetary integrity, and a too strong increase of the public debt coupled with heavy interest payments to service it, limit the margin of maneuver of the budget.

3.2 Price and cost competitiveness

Wage policy and wage increases must be aligned with changes in productivity in the medium term. In this area, the government made various decisions regarding labour costs and social contributions at the end of 2010[14].

In order that changes in labour costs and wage setting mechanisms to be favorable to employment, and keeping in mind the risk of changes in energy costs, at the end of September, 2010 the government negotiated an agreement with union representatives to refrain from applying the next indexation of salaries as part of the automatic wage indexation system before 1 October, 2011[15]. Should more than one automatic indexation apply between

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[12] Integrated Guidelines 1-3.
The initial macroeconomic surveillance mission took place on 14 and 15 October, 2010 in Luxembourg under the new economic governance program of the Europe 2020 strategy.
[13] Chapter 3.3.1 Reforming the pension system
[14] For measures dealing with the strengthening of productivity, see chapters 4.1, 4.2 and 4.4.
[15] According to the latest inflation projections by STATEC and the Luxembourg Central Bank (BCL), the next indexation of salaries as a part of the automatic wage indexing mechanism was to occur in May, 2011. Consequently, it was necessary to change the legislation.

2011 and 2012, the agreement further provides that the government and social partners meet again to evaluate the situation and decide what can be concluded from it[16]. The government is seeking to negotiate another agreement concerning the automatic wage indexation for 2012.

The government has also decided that labour costs would be lowered in upcoming years[17]. The impact of an increased minimum wage in January, 2011 will be offset by allocating an amount equivalent to its overall cost to the Employers insurance fund[18]. This measure will be applied as from 2011 for a period of five years. Subsequently the measure will be assessed from the perspective of its impact on competitiveness in the economy, job creation and combating unemployment for unqualified persons. There will also be a reduction of the one-time accident insurance premium of 0.1 percentage points in order to keep employer social contributions stable following an increase of these contributions to the National Health Fund (CNS) amounting to 0.1 percentage points. An amount equivalent to the loss of earnings will be paid to the Luxembourg Accident Insurance Association through an extraordinary contribution by the State for 2011 and 2012. These two measures are to be understood as one-off occurrences, in as much as they in no way imply that equivalent or similar measures will be taken should future increases in the minimum wage occur or for any future social contributions increases. The government has also agreed to refrain from recommending additional increases in social contributions for the legislative session ending in 2014[19]. The decision to maintain contribution ceilings under the reform of the health care system is not to be reconsidered. In the event of financial imbalances in the CNS, alternative financial revenues must be mobilized. No increase in contributions to pension funds will be recommended as part of the reform being prepared concerning the pension system[20]. Neither will this reform project contain proposals for lifting the ceiling of the contributions basis.

The government is ensuring the implementation of structural measures included in the Action Plan for excessive inflation, while bearing in mind that Luxembourg is dependent on outside factors in the area of inflation. This involves assembling information about prices and making consumers aware of the issues, obtaining voluntary pricing agreements with different sectors of the economy, de-indexing contracts concluded by the State by limiting the impacts of wage indexing to only payroll included in the contracts, analyzing supply difficulties experienced by Luxembourg companies in the internal market, the continued implementation of framework conditions for competition among economic entities and a prudent policy in the area of administered prices. With regard to this, the government also decided to establish a Price formation observatory.

3.3 Macro-structural bottlenecks to sustainable growth

In June, 2010 the EU Council of Economic and Financial Affairs submitted to Luxembourg, and to all the other Member States, a series of macro-structural curbs to sustainable growth, known as *bottlenecks*. For Luxembourg, these bottlenecks deal with the reform of the pension system, stability and viability of the financial sector, the economy's labour potential and the contribution of the education system to human capital formation.

The law dated 8 April, 2011 modifying certain manners of applying the wage indexation mechanism that amended article 11 of the amended law dated 22 June, 1963 setting the pay regime for civil servants.

[16] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011. For more details see: http://www.gouvernement.lu/salle_presse/actualite/2010/09-septembre/29-juncker/index.html

[17] For more details see: http://www.gouvernement.lu/salle_presse/actualite/2010/12-decembre/15-uel/index.html

[18] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011.

[19] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011.

[20] Chapter 3.3.1 Reforming the pension system

3.3.1 Reforming the pension system [21]

In order to guarantee that Luxembourg will be ready to face the consequences of the ageing of its population, the Tripartite Coordination Committee brokered an agreement in April, 2006 by which the social partners and the government would create a study group to draft proposals for ensuring long-term viability of pension schemes and to study the various measures that could be considered to guarantee this stability and to adapt the pension system to changes in professional careers, the ageing of the population and its impact on the length of professional careers.

The reform elements are based on the subjects sketched out in the report of the Inspectorate General for Social Security (IGSS) to the Pensions Study Group, which was presented to the Commission on Health and Social Security of Parliament on 23 April 2009, in as much as these subjects were taken up again in the government's 29 July 2009 statement. Based on the guidelines in the IGSS report, some subjects that came under review by the Employees' Chamber (CSL) and a statement of views by the Luxembourg Employer's Organization (UEL) are now available.

The approach recommended guarantees the principle of inter-generational fairness, based on a conception of benefits allocated to successive generations of beneficiaries depending on their social contributions during their working lives, while ensuring adequate incomes to both working people and retirees. The adequate levels of resources and expenditures ensure definitively that the level of benefits cannot eventually exceed available financial resources, while accepting corrective mechanisms to reinforce a solidarity-conscience redistribution of revenue. This approach maintains the financing principle of the pension system, which is based on sharing out social contributions through payments while constituting a reserve fund. The guiding principles are as follows:

- Link the length of active working life to longevity ;
- Ensure fairness between available income of active workers and retirees ;
- Guarantee an adequate pension ;
- Avoid poverty among pensioners ;
- Provide appropriate and effective governance.

The current financial and demographic situation of the system is such that effective reforms can be foreseen without having to make sharp cuts in benefits. With substantial reserves and a working population that is relatively young, reforms of the system can be undertaken tranquilly and without undue haste, although waiting too long to begin runs the risk of having to formulate temporary and poorly packaged solutions at the last minute. As from now, it is clear that the reforms cannot be limited to small-scale, now and again, superficial actions, and that judicious and comprehensible changes for those concerned, must be undertaken with tact over the entire range of the system. With this objective in mind, the system must be made to retain its capacity for adapting to economic change in the country and to levels of financial resources available, yet without abandoning any of its social objectives, of which the major ones are and will be:

- Ensure an equitable sharing out of domestic income ;

[21] "*Reforming the pension system in order to ensure the long-term sustainability of public finances in view of the population ageing - The increase in age-related public expenditure in Luxembourg up to 2050 is projected to be the strongest in the EU and will essentially be the result of the generosity of the pension system. Reforming the pension system is thus a major challenge for sustaining potential growth in the longer term.*"

- Maintain balance between available income of the working population and pensionners ;
- Provide credible guarantees to working people with regard to their future pensions.

A draft law is being prepared to this end[22].

The major principles of the reform of the pension system reside in the concept that the pension system cannot be socially viable unless it guarantees adequate pensions with relation to average incomes of active workers. The objective of the reform is to ensure future beneficiaries of a comparable pension, in terms of replacement value, to those currently receiving benefits, while guaranteeing the financial viability of the system in the long term. The reform project will be encouraging the active working population to prolong their careers with the aim of achieving an individual “well-being threshold” that they wish to obtain by retirement age and to make pension contributions with relation to this. Equity and concordance between contributions and services implies that a worker who decides to retire at a younger age and will, in principle, have a smaller pension that will last longer, should furnish the same level of contributions and solidarity as a person who will benefit from a larger pension following a lengthier career path, but who will benefit from it for a shorter period. The reform allows a person to choose, as follows:

- Earlier retirement age, with a smaller pension ;
- A lengthier career, with a larger pension ;
- Maintaining alike living standard at retirement age, while taking early retirement at the appropriate age, provided supplemental savings have accumulated during the career span.

In this way, unqualified workers who enter the job market early, earn low wages throughout their career and have accumulated full retirement benefits will suffer no financial loss compared to their average income over their working careers, even if they take early retirement. In this way, the system will continue to provide an adequate replacement rate. In contrast, workers with advanced degrees who are generally well-paid in their employment will have to modify their behavior on the job market so as to maintain the replacement rate.

Retired persons' and active workers' pension benefits accumulated during career periods prior to the date the new legislation is enacted will remain valid in accordance with former legal provisions (transition regime).

The elements of the reform are as follows:

Pension conventions

- The reform project ensures continued benefits to retired beneficiaries on the date the new legislation is applied. The provisions concerning flat rate and proportional increases will remain in place for active workers with regard to retaining benefits accumulated during prior periods after the reform takes effect.
- For the portion of peoples' careers after the reform takes effect, there will be an increase in fixed contributions. The reform project thus seeks to bolster the principle

[22] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011.

of intra-generation solidarity and to maintain pension levels at the bottom of the scale, including for persons taking early retirement.

- For the portion of peoples' careers after the reform takes effect, the legislation provides for a reduced rate of increase applicable to proportional increases.
- The reform project is modifying the current mechanism of staggered proportional benefits increases. The onset of staggered proportional increases at the age of 55 with 38 years of professional career, at a time when the right to pension benefits, even in the case of early retirement, no longer exists, nor is it possible to stop working or to work longer, will no longer occur. Instead, granting staggered proportional increases will be subject to a dual condition that is more restrictive. Persons must have reached the age of 60 and be able to justify 40 years of pension contributions. These conditions are more restrictive but more appropriate in terms of incentive, and come with increases that are significantly larger. Extending active career service by one year will be equivalent to more than doubling the rate applicable to staggered proportional increases of benefits. The new mechanism will only apply to the portion of a person's career after the new legislation takes effect, while the former mechanism will continue in force if the terms for awarding pensions have been met on the date the new system takes effect.

Qualifying for benefits

- In an effort to promote longer professional careers, the reform provides for taking into account unpaid periods of university studies and professional training. These periods are currently counted between the ages of 18 and 27. The periods of studies or professional training to be taken into account are progressively reduced from nine to five years, over a period of 20 years beginning from the date the system takes effect.
- The reform retains the clauses relating to additional time periods required for qualifying for early retirement benefits, the minimum pension and acquiring fixed increases.
- Likewise, the reform maintains the clauses related to accessing early retirement between the ages of 57 and 60. Persons with reduced work capacity whose health prevents them from getting a job fall under the professional re-training legislation that provides an adequate replacement income. Regarding this issue, the reform of the professional re-training system provides for a special status for persons in re-training programs. The system continues to ensure that unqualified workers whose essentially physical careers have worn them down will have an adequate pension at a reasonable age.

Minimum pensions

- The conclusions of the « *Rentendësch* » emphasized that a consensus exists in Luxembourg that no pension can be less than 90% of the minimum wage, provided that the beneficiary has worked in a career for forty years. The reform will uphold this principle fully.
- The minimum pension mechanism will continue to provide an adequate pension for those who during their careers had income near the minimum wage level.

Individualization of benefits

- With an eye to promoting individualization of benefits and thus creating careers for spouses or partners, the reform is proposing a new scheme that avoids gaps in peoples' careers.
- A preliminary study will be carried out to introduce a public complementary scheme for individuals.

Period of coverage and change mechanisms for pensions

- The mechanism for financing the distribution of costs by coverage period and making up a reserve fund is to be maintained. The length of the coverage period and the frequency of adjustments will be modified by the reform, in an effort to improve the system's regulating tool. The coverage period will be extended to ten years and the rate of contribution revised every five years.
- The reform will not affect the system for adjusting pensions through cost of living increases.
- The adjustment mechanism for changes in living circumstances for mature pensions will depend on the pure distribution bonus of the system, once the reform goes into effect. As long as the pure distribution bonus remains lower than fixed contribution rates for a coverage period, the adjustment is owed.
- Once the pure distribution bonus exceeds the fixed contribution rate for a coverage period, the regulating mechanism kicks in.

3.3.2 A well functioning and stable financial sector [23]

The country's small scale and the nature of its economy have resulted in Luxembourg developing a strong specialization in the services sector, particularly in financial services. This type of specialization has potentially exposed the country's economy to specific sectoral shocks. In view of this type of risk, it is important to increase the capacity of the financial sector to ward off such blows and to continue to diversify the country's economic structure. In view of the European and international dimension of the financial sector, and of the often contagious and cross-border nature of financial crises, improving the sector's ability to resist such impacts can be achieved primarily by strengthening regulatory and supervisory systems at the European and international levels. Luxembourg actively supports all European initiatives in this area, such as increasing monitoring of liquidities, bolstering capital foundations of banks, protection for depositors and investors or setting up a European framework for managing and resolving crises[24]. In particular, the rapid and effective implementation of European agencies in the area of devising a new structure for financial monitoring in Europe should increase cooperation in the area of regulation and monitoring.

[23] "*Ensuring a well functioning and stable financial sector, in particular through enhanced European and international cooperation in regulation and monitoring - The financial sector has played a very important role in sustaining high growth rates and it will be important to ensure its well functioning and stability while also identifying other sources of growth. One aspect that could be useful in this process is to enhance international cooperation in regulation and monitoring.*"
[24] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011.

3.3.3 Ensuring full utilization of the economy's labour potential[25]

The 2008 IGSS evaluation report analyzed the repercussions of the legal provisions on the efficiency of guidance and orientation measures for persons with disabilities. The government submitted its report to the Joint Parliamentary Commission for Health and Social Security, Labour and Employment. It was recognized straight off that the record is mixed on this issue, in as much as legislation that was enacted has improved some conditions while others have not been addressed. So some procedures were abridged while other timelines got longer, which makes manifest the need to accelerate reclassification procedures, as any additional extension only favors solutions that are alternatives to professional life. It is important to remember that reclassification outside a persons' company is not an attractive option to persons who know that they will lose all of their rights at the end of the new employment contract. From this emerged the idea of creating a specific status for all persons undergoing professional reclassification either internally or externally, which would allow them to retain their rights as long as the disability from the previous job is in effect.

It is essential to engage in better coordination among the various actors so that procedures and decisional processes insured parties undergo are more transparent and rapid, especially when medical opinions diverge. With regard to divergent medical views, the disability evaluation process should be made uniform.

The legal modifications to be implemented should aim at improving the finding employees appropriate jobs while taking care not to prematurely exclude those who can work from the labour market. From this perspective, the importance of rehabilitation leave on a part-time basis should be emphasized. However, this type of leave should be flexibly applied and above all no longer be included when calculating thresholds for determining sick leave. An inter-ministry[26] working group is responsible for producing proposals to improve the effectiveness of legal provisions in this area.

A review of legislation is being prepared based on consultations between all the parties involved concerning the application of disabilities legislation and professional reinsertion. Proposals for modifications, which will be reviewed with the social partners, are as follows:

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[25] "*Ensuring full utilization of the economy's labour potential, in particular among the unemployed, the young and older workers - The employment rate of residents is low at both ends of the age spectrum because youth unemployment is higher than the EU average and the pension system provides very high replacement rates and often allows workers to retire before the statutory pension age. Raising labour supply could have important contribution to potential growth and public finance sustainability in the medium term.*"
Because of the specific nature of the Luxembourg economy, these observations must be qualified. In its 2003 opinion on the Broad Economic Policy Guidelines of Member States of the Community (BEPG), the CES noted that in Luxembourg the labour supply consists of three components: native Luxembourg residents, cross-border workers and immigrants. Cross-border workers are not included in the employment rate concept. This concept is a purely national one, involving residence. Yet the internal job market is filled by nearly 40 % cross-border workers, and nearly half of all newly created jobs in the recent past have been filled by cross-border workers. As such, the CES formulated a critique with regard to the validity of this indicator for Luxembourg: the indicator "*is not representative of the macroeconomic reality in Luxembourg and is even less appropriate as a macroeconomic objective for employment, which should be the basis for determining employment policy* ". In contrast, the employment rate of young people, women and older workers is useful for understanding how to utilize human resources in the economy.
For this, see also section 4.1.

[26] Including representatives of the Ministry of Social Security and the Ministry of Labour and Employment.

- Internal reclassification to be promoted through reducing the size threshold for companies and removing quotas set depending on rates listed in article L. 562 of the Labour Code ;
- Setting up a specific status for workers being reclassified professionally so as to avoid having such persons refuse to accept a new position for fear of losing their rights should the new work contract be terminated ;
- Make in compulsory for occupational physicians to conduct periodic evaluations and to make necessary recommendations ;
- Simplification of the manner of calculating indemnities by linking them to the contributions base for financial compensation for ill employees ;
- Diverse modifications to the procedure.

A draft law is being prepared to this end.

3.3.4 Improve the contribution of the education system to human capital formation [27]

The reforms in the national educational system aim to reduce the dropout rate and to increase the proportion of persons with a university education. Luxembourg expects that this will improve the chances of young residents for professional integration and promotions. The major handicap to an education in Luxembourg is the great selectiveness within the trilingual system. This does not affect those young people who do well in school, but rather those who cannot achieve the minimum grade level or those who leave school without diplomas. The reforms that affect orientation, changing of grading methods and advancement criteria, and the reform of language training, as well as all the processes introducing the diversification of content and training orientations should make it possible for most young people to successfully complete their training and position themselves more advantageously on the job market[28].

In complementarity with the national education system, the national network of Luxembourg libraries that has just just been modernized by the law of June 24, 2010, coordinated by the national library, will develop actions targeted to contribute to human capital formation in all layers of the population and in particular in the fields of lifelong learning and the development of language skills.

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[27] "*Improve the contribution of the education system to human capital formation - Addressing weaknesses in the educational system will remove an important handicap for residents in the quest for jobs.*"
Also see Chapter 4.4 The education objective and key measures for achieving it.

[28] Also see Chapter 4.4 The education objective and key measures for achieving it.

4. Thematic Coordination [29]

The European Council decided on the new Europe 2020 strategy at their June, 2010 session, confirming the five major EU objectives that will make up the common goals steering EU member state action in the areas of promoting employment, improving conditions for innovation and R&D, achieving objectives in the area of climate change and energy, improving education levels and promoting social inclusion, essentially by reducing poverty. Each member state will set its domestic objectives that reflect the five major goals for Europe as established by the European Council. The Luxembourg 2020 objectives are described below.

4.1 The employment objective and the key measures for achieving it

European Objective: *"aiming to raise to 75% the employment rate for women and men aged 20-64, including through the greater participation of young people, older workers and low-skilled workers and the better integration of legal migrants."*

4.1.1 National Target

Luxembourg's objective **for 2020 is to achieve an employment rate of 73%.** The objective for 2015 is around 71.5%. The national targets were set following meetings between the Ministry of Labour and Employment, STATEC, the Social Security Inspectorate General (IGSS) and ADEM[30]. The figures were based on estimates provided by these institutions. In general, the primary indicator for monitoring purposes is the employment rate (Total, Youth, Women and Seniors). Other indicators will be implemented as part of the Employment and labour market observatory and under the ADEM reform.

In this context, it is appropriate to emphasize the specific nature of Luxembourg's job market. In the first place, the labour pool is not limited to national borders, but includes a large part of the Greater Region[31]. The supply of available labour in neighboring countries, the cross-border workers, will have a significant impact on Luxembourg's ability to meet the objectives the country will be setting, in view of the variables present when preparing statistical results. According to the latest consolidated data from September, 2010, the percentage of cross-border persons employed in Luxembourg is 43.9%. Of these, cross-border French residents account for 49.5% and 21.7% of the total labour force. Belgian and German residents each account for 25.3% of total cross-border workers. The change in the number of cross-border persons with a job in Luxembourg is even more explicit. They have increased by 71.1% between 2000 and 2010, while during the same period overall employment increased by 39.1%. This explains how the increase in employment in Luxembourg has not been accompanied by lower unemployment, in fact, the opposite has occurred. While domestic employment grew by 3% between 2008 and 2010, unemployment surged by 45% over the same period. Secondly, immigration, especially the one related to the free movement of workers within the EU, is a major factor in Luxembourg and is exerting a strong impact on changes in demography. Between 2000 and 2010, the foreign resident population grew by 37.8%, while the native Luxembourg population grew by only 3.3%. Thus between September, 2009 and September, 2010, the working population grew by 2.2%. The population

[29] Integrated Guidelines 4-10

[30] ADEM is the public employment service that operates under the authority of the Ministry of Labour and Employment.

[31] The Greater Region is comprised of the Grand Duchy of Luxembourg, the Walloon region of Belgium, the Sarre and the Rhineland and Palatinate region of Germany and the Lorraine region of France.

between the ages of 20 and 64 for all nationalities, which can be assimilated to the active working population, has increased very slightly to 62.3% in 2009.

Table 1: Changes in domestic employment, the employment rate and the unemployment rate

	1995	2000	2005	2006	2007	2008	2009	2010*
Domestic employment	na	244,949	290,419	302,418	316,460	332,191	336,033	341,441
Percentage of cross-border workers	na	35.67%	40.8%	41.74%	43.1%	44.0%	43.9%	43.9%
Total employment rate	62.6%	67.4%	69.0%	69.1%	69.6%	68.8%	70.4%	70.7%
Total employment: Men	79.5%	80.7%	79.4%	78.9%	78.3%	77.2%	79.0%	79.2%
Total employment: Women	45.2%	53.8%	58.4%	59.4%	61%	60.1%	61.5%	62.1%
Youth employment rate [ages 15-19]	na	9.7%	6.2%	5.7%	6.6%	7.2%	10.4%	7.3%
Youth employment rate [ages 20-24]	na	52.9%	44.0%	41.7%	38.6%	41.3%	43.3%	35.1%
Employment rate for older persons [ages 55-59]	na	38.9%	46.8%	49.0%	48.3%	49.3%	53.5%	55.9%
Employment rate for older persons [ages 60-64]	na	14.5%	12.7%	12.7%	11.5%	15.1%	19.4%	19.9%
Unemployment rate	na	2.5%	4.3%	4.4%	4.4%	4.4%	5.7%	6.0%

Sources: STATEC, Eurostat, ADEM

Remarks: * first three quarters

The unemployment rate refers to resident job seekers. According to the ADEM definition, job seekers are those persons without a job, residents of Luxembourg, available for work on the job market, actively seeking a suitable job, not registered in an employment program and who have kept abreast of ADEM monitoring conditions.

4.1.2 Key measures

The national employment policy is designed to fight instability and poverty, thus seeking to obtain improved living conditions and a sustainable social model. It contains organic measures as well as measures promoting the employment of young people, women, older workers and persons with specific needs. Where these measures overlap into the domains of other institutions, they are elaborated in coordination with the institutions concerned.

a) Organic measures seek to modernize and adapt institutional structures and to improve comprehension of the complex functioning of the labour and job market in order to increase effectiveness of active employment policies.

- The reform of the public employment service ADEM plays an important role in strengthening the current employment policy[32]. What must be done is to increase the effectiveness and quality of service for users, meaning both job seekers and employers. The ADEM must simultaneously provide personalized follow-up of job seekers according to their degree of employability and establish, then develop, close relationships with companies.

  In this way, improved supervision of job seekers will be accomplished through personalized monitoring. The purpose of this measure is to improve job seekers' chances

[32] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011.

of professional insertion by means of efforts made by job seekers and the support they receive from ADEM.

In order to improve ADEM's functional effectiveness, a monitoring commission will be set up with the purpose of assisting and evaluating how well ADEM accomplishes the tasks assigned to it. The commission can also make recommendations for action required to more effectively implement the agency's actions. This commission will be made up of representatives of the various ministries and the social partners.

As part of this reform, the IT system for files management will be modernized to become a better performing and more effective tool for managing offers of employment and job seeker applications. An IT tool built around a qualifications database will be implemented, which will help placement services select candidates whose profiles and experience levels most optimally meet the requirements of vacancies posted by employers. With regard to scheduling for 2011-2012, a study is to be completed, a software program will be selected and brought on line and training and implementation will be carried out.

In addition, new regional ADEM offices are to be established, with additional professional counselors recruited in order to further improve services provided to job seekers and employers.

The contacts between these persons and ADEM agents, professional counselors and consultants will be significantly developed so as to improve recruitment numbers achieved through ADEM. One fundamental job for professional counselors and consultants will be to visit companies to find out about their hiring needs.

Since over 60% of job seekers, including the young under age 26, have little or relatively inadequate training, this will play a major role in getting job seekers back to work. A training representative position will be created within ADEM to develop the most suitable training programs for job market requirements and to coordinate training programs.

The budget of the reform, which has been in the offing since 2009, is estimated at around € 5.5 million. The budget for the IT system is estimated at € 10 million over several years.

- As part of its employment policy, the government is in the process of creating an Employment and labor market observatory to better understand the functioning of the job market and to evaluate measures promoting employment. This observatory will be used to develop synergies between institutions and organizations performing data collection or socio-economic analysis on the labour market. The observatory's objective is to analyze the labour market, carry out forecasting, longitudinal and immigration impact studies, and to establish indicators for the labour market. These indicators will play a major follow-up role in promoting employment and in developing more focused and effective measures.

  The observatory will have a budget of € 1.8 million, allocated equally over three years (2011-2013). The project will be co-financed by the European Social Fund (ESF) in the amount of half of the budget, or € 900,000.

- Lifelong learning: the employment rate depends heavily on educational levels. A good level of initial education and lifelong learning considerably improves one's chances of keeping employed, or rapidly finding a new job. Companies also profit from training their employees, through heightened competitiveness after training. For this reason, the employment policy particularly stresses increasing qualifications and lifelong learning programs, which is done in close collaboration with the Ministry of National Education and Vocational Training.

According to the latest consolidated data from 2008, 43.4% of employees have had lifelong learning courses co-financed by the State, amounting to a total investment of € 200 million, the equivalent of 0.5% of GDP. In order to further develop lifelong training programs, the state co-financing strategy for professional training will continue to be analyzed and adapted to the requirements of the labour market. For this, such paths as more personalized training or qualification through professional experience, as well as improved collaboration among the social partners to better adapt training to the various requirements will be analyzed.

An agreement between the government and the UEL has ensured that lifelong learning programs will receive a higher rate of co-financing from the State[33]. The measures taken in this area specifically target encouraging small companies to use lifelong learning more, and to incite companies in general to extend the scope of their training programs to employees with little initial training. These measures should also contribute to increasing the employment rate among older workers. Additional co-financing granted for this measure will be directed at increased costs arising from the overall rise in co-financing rates from 14.5 to 25%, an estimated cost of € 20 million per year.

- Close collaboration between the Ministry of Labour and Employment and the Ministry for Family Affairs and Integration aims to coordinate policies for employment and reduction of poverty. Clearly, the risk of poverty diminishes strongly when a person becomes employed, especially with an indeterminate length contract. In 2009, the risk of relative poverty rate was 14.9% for the entire population[34]. However, it should be noted that only direct financial transfers, and not all transfers, are taken into account in calculating this risk.
- The current and future challenges of the labour market will require solutions arrived at through social dialogue. This includes three-party dialogue within different decision making bodies such as the Permanent Committee for Labour and Employment (CPTE), the Economic and Social Committee (CES) and the Tripartite Coordination Committee, as well as social dialogue on the national, sector and corporate levels.
- The "Fit4job" concept is an element of the government's proactive employment policy. A pilot project for the program was launched in February, 2010 in the financial sector, which ran on a € 100,000 budget in 2010, with the 2011 budget to be determined. The "Fit4financial markets" program was developed in a partnership with the Luxembourg Bankers' Association (ABBL) and the Luxembourg Institute of Banking Education (IFBL), with the unions ' support, and is part of a sector approach to meet the requirements of the labour market. The objective of this program is to proactively and closely supervise persons who have lost financial sector jobs. The program increases employability levels of this target group through a diagnostic session, followed by training specifically developed for the sector. It also maintains close collaboration with professionals in order to best meet the requirements of the sector and persons concerned.

  A pilot project for job seekers 45 years and older called "Fit4job 45+" was also launched in 2010 with a € 50,000 budget in 2010, with the 2011 budget to be determined. Priority is given to persons registered at ADEM for at least one year who have exhausted their unemployment benefits.

[33] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011.
[34] STATEC, *Regards sur la pauvreté des travailleurs*, Regards 1-2011

The same concept will be launched in 2011 in the construction sector, known as "Fit4job—Fit4CivilEngineering", and will primarily concern job seekers with few qualifications. The 2011-2013 budget is € 1.5 million. Adapting the method to the trade, health and hospital sectors will follow.

b) Measures for youth, with the objective of improving youth employability through training and guidance.

- Initial training and guidance for young people plays a crucial role in increasing compatibility between the requirements of the labour market and knowledge and capabilities of the young. Youth employment policy is prepared in close cooperation with the various competent ministries and generally with all persons involved in promoting youth. This cooperation will be reinforced and improved by setting up a "Youth Guidance Center" that will host various services for youth, including those available through ADEM. This action will occur in 2011 or 2012.

- In a crisis environment, the young are especially exposed to unemployment risk. Even young people who have completed their studies are experiencing difficulty finding work because of the significant drop in job offers. Measures have been implemented in order to help these young people in acquiring practical experience, thus augmenting their chances of rapidly finding a job while offering a stable and legal framework. These measures are the Work Support Contract (CAE), the Initial Employment Contract (CIE) and the Initial Employment Contract—Practice (CIE-EP), amounting to a total of € 10.2 million in 2010, € 13 millions in 2011 and € 11 million annually after that. These measures are to be evaluated at the end of this year and a decision will be made to either extend the current programs or modify or replace them.
- The monitoring process of young job seekers without qualifications is being reviewed and qualitatively intensified. Several projects have been implemented by ADEM to deal with this in collaboration with other institutional players that are bolstering the support for youths without diplomas through pilot projects in 2011 and a budget of € 1 million for the year. The projects are as follows:
    - The "Nudge in the right direction" project targeting young job seekers between 16 and 20 years old, without diplomas who have not been able to get into the job market since registering at ADEM. ADEM is providing a specialized follow-up for young people in order to integrate them into a measure promoting youth employment or in training that can serve as a trampoline toward the labour market.
    - The "training for young people working under a work-support contract" is directed at young job seekers aged 16-30 that are working under a CAE. This project provides training adapted to current requirements of young people, such as preparing for job interviews, IT training, etc.
    - Awareness workshops are being set up by ADEM for youths aged 16-24 who have not obtained apprenticeship positions prior to November 1st of the current year, to explain and offer various "transition" measures, possibilities and perspectives for their professional insertion.

- For young early school leavers registered at ADEM, the organization's professional guidance department offers a motivational interview aimed at either returning to finish their studies through a "Second chance school"[35] or getting an apprenticeship.

c) Measures targeting women with the objective of increasing women's participation in employment.

In 2010, the employment rate rose to 70.7% for persons aged between 20 and 64, due to more women in the workforce. The proportion of persons with a job is higher among men at 79.2%, than among women, at 62.1%. Nonetheless, the gap is receding because the employment rate of women is rising faster than the employment rate of men. Holding a job does not necessarily mean having an indeterminate length employment contract and working 40 hours per week. Indeed, 34.8% of women aged 20 to 64 who have a job work only part time. For men, this figure is 4.4%.

- In order to achieve the objectives that Luxembourg has set for 2020, it is important to facilitate getting women in jobs. It is essential to emphasize promoting reconciliation between professional and family responsibilities, for example providing child care services, day nurseries, full-time schooling, etc. The coordination of policies at the inter-ministerial level[36] is essential.

  Discussions are currently ongoing between the social partners in the area of parental leave. These discussions could result in a relaxation of current regulations that would provide more diversified models that better accommodate the specific requirements of working men and women who wish to care for their children and that would make parental leave more interesting to men.

- Another measure for achieving the national objective in terms of the employment rate is encouraging women to set up their own companies.

d) Measures benefiting older workers that aim to increase employment rates while ensuring their well-being, health and safety at work.

- The CPTE undertook discussions about the distinctive situation of older persons with relation to the labour market as part of the development of a national policy to promote employment among older persons. The current review deals with the reasons for early retirement, at times differently depending on economic sector, often related to changes in work processes because of economic duress and with no assistance in the form of life-long learning. Next, the review concentrated, in a general, not individual manner, on the issue as a whole, with a view to determining which subjects ought to be modified in order to keep workers targeted on extending their professional careers. This is accomplished through professional training and guidance for older workers. A varying and balanced working group will draw up an activation plan for older workers that includes recommendations containing examples of good practices, measures aimed at keeping employed and re-insertion, as well as incentives for companies in order to carry out a policy that meets the requirements of older workers, to include working conditions, working hours, training, skills audits, etc.

[35] See Chapter 4.4 The education objective and key measures for achieving it

[36] Between the Ministry for Family Affairs and Integration, the Ministry of Equal Opportunities and the Ministry of Labour and Employment.

- The reform of the pension system was undertaken this year by the Social Security Ministry[37]. As this reform will determine in large part the reform of the early retirement system, the Social Security reform must be completed first. However, persons with early retirement will not have a significant impact on the employment rate of older workers as the effect on the employment rate is minimal. In fact, the number of new early retirement cases processed in 2009 was only 552. Consolidated data for 2010 are not yet available, but early figures are identical to those of 2009. As such, people who retired early represent only around 10% of total retired older workers. With respect to resident wage earners, who numbered 193,858 in September, 2010, the proportion of persons who retired early is only 0.3% and the impact on overall employment is less than 0.2%. It is most probably true that without the early retirement system, those persons who are currently in this status would be unemployed and having low chances in obtaining another job. This would bring on increasing precariousness for these persons. Thus, talks will start with social partners regarding modifications to make the prospect of early retirement more attractive.

e) Measures favoring persons with specific needs that aim to improve means of support for these persons and to promote their reclassification in the labour market.

- The government shall continue to consider accessing employment and integration into the primary labour market, as well as providing protected structures offering jobs to handicapped persons as a priority, since employment is a key factor for integrating such persons. This integration will promote autonomy and economic independence of these persons. Awareness campaigns will be prepared for the public and private sectors. A conference dealing with handicaps and employment will assemble the persons concerned, including handicapped workers, managers of protected structures, employers and unions will be set up in order to draw up a list of priorities in the domain and to share good recruiting practices. These measures include the support of job coaching projects, initiatives aimed at integrating handicapped people into the labour market and providing follow-up.

- A special effort will be extended to the category of job seekers designated for external reclassification[38]. They will receive improved follow-up for re-insertion appropriate to their situations.

f) Management of the age pyramid in Luxembourg's civil service.

The action plan for administrative reform from 2010 to 2014 includes managing the age pyramid in Civil Service Human Resources management. The object here is to analyze the impact of the demographic situation on public employment as well as that of ageing of civil service personnel, with the purpose of subsequently developing a group of measures concerning recruitment, skills development, career development, flexible working hours, health aspects of work, strategies for remaining employed and transitioning into retirement as well as knowledge transfer. The measures intended for older workers will take more specifically into account their situation and the issue of how to keep them employed longer. Private sector initiatives under way in the area of labour law and pension benefits will be

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[37] See chapter 3.3.1 Reforming the pension system

[38] Persons in external reclassification are persons with a reduced capacity for work who can no longer perform in the last position they occupied and cannot be reclassified in a position that adequately corresponds to their abilities within the same company. Consequently, they are reclassified in another company where this is possible.

monitored by the Ministry of Civil Service and the Administrative Reform, as with the programs implemented in foreign civil services comparable to that of Luxembourg. With regard to planning for the project, a study began in January, 2011 and will continue through September, 2011, that will produce recommendations in the area of human resources management.

4.2 The R&D objective and the key measures for achieving it

European Objective: "*improving the conditions for research and development, in particular with the aim of raising combined public and private investment levels in this sector to 3% of GDP; the Commission will elaborate an indicator reflecting R&D and innovation intensity*."

4.2.1 National target

R&D takes on a fundamental character in a small, very open economy. Luxembourg's structural specificities - its size, its industrial history, the prevalence of services and very small companies in its productive system and the presence of a large number of multinational subsidiaries in the country - combine to impact R&D activities, their development and their measure through indicators, including the indicator "Gross domestic expenditure on R&D (as a percentage of GDP)".

The government, conscious of the positive impact in the medium and long term of R&D investment on economic development and competitiveness, has set a **national R&D target in the 2.3-2.6% of GDP range**, while seeking to maximize effectiveness of expenditures and taking into account the nation's absorption capacity. As a sub-objective for 2020, the government has set an interval of between 1.5% and 1.9% for the private sector and 0.7% to 0.8% in the public sector. The government's intermediate objective is an overall rate of 2% by 2015.

Table 2: Changes in the State's R&D budget and changes in internal R&D expenditures

Changes in the State's R&D budget

	2006	2007	2008	2009	2010	2011	2012*	2013*	2014*
Mn €	113.8	142.6	*183.1*	*200.2*	*247.7*	*253.4*	280,0	*296,0*	*310,0*
% GDP	0.35	0.41	*0.46*	*0.53*	*0.60*	*0.58*	0.60	*0.60*	*0.59*

Changes in internal R&D expenditures

	Public research € Mn.	Intensity (€ / GDP)	Private research € Mn.	Intensity (€ / GDP)	Total € Mn.	Total (€/GDP)
2006	78.5	0.23	485.0	1.42	563.5	1.65
2007	96.6	0.26	495.0	1.32	591.6	1.58
2008	118.0	0.30	482.0	1.22	600.0	1.52
2009*	166.2	0.44	468.4	1.24	634.6	1.68
2010*	200.0	0.48				
2011*	215.0	0.49				
2012*	240.0	0.51				
2013*	255.0	0.52				
2014*	270.0	0.51				

Source: Ministry of Higher Education and Research
Note: * estimated

4.2.2 Key measures

a) Measures for achieving the nation's target in public research

Regarding the national public research target, government action is being prepared with the assistance of the Higher Committee for Research and Innovation and in concert with the scientific, economic and civil society spheres. It is based on the following:

- The second founding contract for 2010-2013 with the University of Luxembourg
- The 2011-2013 performance contracts with the public research centers for Health, Gabriel Lippmann, Henri Tudor, the CEPS, the National Research Fund (FNR) and Luxinnovation
- Concentrating the nation's R&D effort on a limited number of priority domains[39], especially the FNR's CORE program for 2008-2013 which supported projects amounting to € 18.0 million over the period of 2008-2010 and an additional € 57.3 million from 2011 to 2013.
- The 2008-2013 aid program for research-training of the FNR, which is the primary national instrument for supporting the training of young researchers at the doctoral and post-doctoral level and links aid allocation to employment contracts - generally indeterminate length contracts - between researchers in training and host establishments. FNR currently supports some 600 AFR projects amounting to € 26.4 million for the period 2008-2010 and is planning an additional € 55.0 million for the period 2011-2013.
- The ATTRACT and PEARL programs of the FNR, which seek to encourage young researchers and top researchers to come to Luxembourg to work. The FNR currently supports projects amounting to € 3.8 million for the period 2008-2010 and is planning an additional € 13.7 million for the period 2011-2013.
- The implementation of a strategic partnership initiative with three U.S. research institutes of world renown in the area of molecular diagnostics, with the objective of establishing a technological skills center in personalized medicine.
- Heightened awareness of public R&D players to get them to participate more systematically in prospecting and economic promotion activities for Luxembourg abroad, in an effort to create closer links and more partnerships on joint projects, as well as becoming actors in promoting skills and innovation abroad.

Table 3: Financial contributions by the Government and Third Party financing for the period 2008-2013 (actual figures for 2008-2013 and negotiated figures for 2011-2013)

University (€ mn)	**2008***	**2009***	**2010***	**Σ 2008-10**	**2011****	**2012****	**2013****	**Σ 2011-13**
CFE***	80.0	72.0	91.1	243.1	106.0	120.2	131.7	357.9
Third party financing	8.8	13.0	14.9	36.7	18.0	20.0	23.0	61.0
Total	88.8	85.0	106.0	279.8	124.0	140.2	154.7	418.9
CRP/CEPS (€ mn)	**2008***	**2009***	**2010***	**Σ 2008-10**	**2011****	**2012****	**2013****	**Σ 2011-13**
CFE	51.4	55.1	61.6	168.3	66.3	69.4	72.5	208.2

[39] Development and performance of financial systems ; Higher quality and more productive business services ; Information security and fiduciary management; High performance telecommunications networks, an essential innovation driver in the services sector; Sustainable management of water resources; Intelligent and functional materials and surfaces; Control of chronic, degenerative and infectious diseases; Challenges for the educational system, labour market, social protection, including the territorial aspects; Identities, diversity and integration.

Third party financing	26.2	32.7	32.6	91.5	42.6	47.1	52.2	141.9
Total	77.6	87.8	94.2	259.8	108.9	116.5	124.7	350.2
FNR (€ mn)	**2008***	**2009***	**2010***	**Σ 2008-10**	**2011****	**2012****	**2013****	**Σ 2011-13**
CFE	27.4	28.2	40.3	95.9	35.2	45.0	52.0	132.2
Third party financing	2.6	3.8	2.5	9.9	2.1	1.6	0.7	4.4
Total	30.0	32.0	42.8	104.8	37.3	46.6	52.7	136.6
Expenditures	13.3	29.5	40.6	83.4	53.2	60.8	61.0	175.0

Source: Ministry of Higher Education and Research

Notes: * Actual

** Registered

*** CFE includes the Government's contribution from the *Luxembourg Center for Systems Biomedicine* (LCSB)

The government action is a steadfast component of the knowledge triangle concept that aims to bolster the link between research, higher education and innovation. The implementation of this concept will be reinforced in the City of sciences (*Cité des Sciences*) at Esch-Belval, which will host on a single site as from 2015 two faculties of the University of Luxembourg, the Gabriel Lippmann and Henri Tudor public research centers, the CEPS and the incubator for companies. In this way, the government seeks to intensify synergies between various players, reinforce participation in the EU Framework Program for Research and encourage the development of genuine skill centers. From this perspective, the government is looking to better exploit public research results by supporting an intellectual property policy within public research facilities and also back start-ups and spin-offs within host structures for young innovative companies by providing adequate supervision in the Esch-Belval and Foetz incubators.

The government has approved a construction program with a financial package of € 565 million for the initial phase (2008-2015) for the construction of the *Cités des sciences*, of which € 453.2 million has already been allocated.

Table 4: The laws dated 21 December, 2006, 19 December, 2008 and 18 December, 2009 relating to the following construction projects

The *Maison du savoir*	€ 136.2 million
Human Sciences Building	€ 67.4 million
Esch-Belval Corporate Incubator	€ 13.0 million
Construction total	€ 216.0 million

Source: Ministry of Higher Education and Research

Table 5: Draft laws relating to Government-approved construction

The *Maison du Nombre*	€ 52.0 million
The Arts and Student's building	€ 16.4 million
Calculations and Cooling Production Plant Center	€ 14.6 million
Innovation building	€ 36.7 million
University Library	€ 59.9 million
Urban modifications to the *Cité des Sciences*	€ 58.0 million
Construction total	€ 237.2 million

Source: Ministry of Higher Education and Research

As part of the Biotec initiative, the construction of two buildings has been achieved or is underway, one totaling € 3 million for the Integrated Biobank of Luxembourg (IBBL) and the other costing € 11 million for the Biotec building of the Luxembourg Center for Systems Biomedicine (LCSB). For the period 2007-2013, the FEDER "Regional Competitiveness and Employment" program has allocated an amount of € 15 million for research and innovation to co-finance the corporate incubator and the Biotec building in Esch-Belval.

To complement the AFR, ATTRACT and PEARL and FNR programs, the government intends to further develop an environment favorable to the blossoming of researchers' efforts that will be a basis for mobile careers for researchers, both internationally and between sectors. The government will set out a group of consistent actions in coordination with the public research institutions within this framework in the areas of recruitment, training, skills and career perspectives for researchers.

b) Measures for achieving the nation's target in private research

With regard to achieving the national targets in the area of private research, government action will take the form of the following measures:

- Additional incentives for Research-Development-Innovation (RDI) in the private sector throughout the innovation chain.

  The law dated 5 June, 2009 to promote RDI in the private sector provides nine specific State aid schemes that emphasize national priorities:

  - Incentives for new and sustainable processes for SME that have not yet exploited their potential for innovation. Aid schemes exclusively reserved for these are those that cover using external expertise, protection of intellectual property consecutive to an R&D project and temporary hosting of highly qualified personnel seconded from large corporations or public research organizations. The establishment of an Institute of Intellectual Property will help to increase the effectiveness of these aid schemes and to promote the results of research by inciting public and private actors to take advantage of the protection offered by intellectual property rights.
  - Setting up new innovative companies with fewer than six years of operations and whose R&D expenditures are at least 15% of operating expenses, or that are developing products, processes, services, methodologies or organizations well in advance of current European technology.
  - The development of collaborative research among companies of all sizes and public research organizations, both domestically and internationally. To help achieve this objective, R&D and feasibility study aid schemes include extensions of aid for projects and programs meeting these criteria.
  - Taking into account process and organization innovation and bypassing the purely technological context of innovation.
  - Investing in new and sustainable innovation centers, such as interaction, sharing of research equipment, exchange of knowledge, technology transfers and dissemination of scientific and technological information.

The government is aiming for an objective of 240 programs and projects working with these types of aid over the period 2011-2013, compared to 143 registered over the period of 2008-

2010[40]. Using current forecasts, annual budget allocations to the Innovation Fund must increase from around € 46 million in 2011 to € 65 million in 2013.

- Implementation of special action plans to benefit logistics, health technologies and eco-technologies.

The government is also concentrating specific development efforts on economic activities that use advanced technologies for logistics, the health sector and sustainable development. In addition to determining the sectors and technologies to be targeted as priorities, the action plans will also structure and synchronize political action on different levels, such as organizing economic missions to target countries, hosting and managing investment projects and foreign researchers, investments in public research infrastructure and skills, as well as in hosting centers for new companies, determining priorities for public research financing, developing competence in detecting and valuating the results of public sponsored research, developing private risk capital and public-private finance funds, etc.

- Significant augmentation of participation in international programs and initiatives and financial return on these investments.

This objective deals primarily with the Research-Development Framework Program (PCRD), the Article 185 and 187 initiatives of the EU and the European Space Agency programs (ESA). The government is expecting a financial return of € 65 million in these projects from 2011-2013. For comparison purposes, the latest estimates put the return in the area of € 47.8 million for the period 2008-2010[41]. In order to meet this objective, the government plans to negotiate with a certain number of large corporations whose R&D efforts have a considerable impact on national RDI expenditures and that can prove interesting to European networks and platforms of excellence through "Innovation Alliance "contracts. With this type of contract, the companies involved commit to certain efforts, such as participation in project tenders, intent to obtain Community financing, forecasted success rates, use of consulting services of Luxinnovation, etc. This type of contract will constitute a complimentary instrument for existing Fit-for-Europe[42] grants. In parallel, the government will evaluate the advantages of investing in all new Article 185-187 initiatives. It should be noted here that these new initiatives could result in particularly difficult access issues for the smallest EU member nations because of the administrative overload[43].

- Adaptation of the Luxinnovation 2011-2013 performance contract to government priorities in the area of RDI.

The objective of the performance contracts initiated in 2008 was to introduce a management by objectives system to replace the resources based system. In exchange, the organization concerned was to obtain financial planning security over a period of three years to allow it optimal conditions for programming its development for achieving its objectives. The new Luxinnovation performance contract, which will extend from 2011-2013, is molded around the following priority objectives:

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[40] Note that the target of 80 for the period 2008-2010 was easily exceeded.
[41] This represents a €45 million excess over the objective for the period 2008-2010.
[42] *De minimus* fixed aid that provide partial refinancing depending on company size, quality of the application submitted, i.e. whether it was approved or rejected and the extent of its involvement, whether coordinator or participant, as well as application fees.
[43] Too frequently, the critical mass of research companies and organizations that can participate risk being inadequate to justify the involvement of Luxembourg.

- o Establishment of an implementation plan grounded on performance indicators of the contract having the same name and setting up of a consulting committee, made up of representatives of different target client types, reporting to a management board.
- o Primacy of the concept of individual and personalized aid for target clients.
- o Specific agency support of new government initiatives, notably health and logistics technologies and eco-technologies, and in launching major innovation projects.
- o Reduce the absolute number of main indicators to 12 from 18 in the 2008-2011 contract.
- o Provide a balanced mix between indicators, as follows: Impact (5 main indicators[44]), Activity (6 main indicators) and Management (3 main indicators).
- o Support a significant increase in domestic RDI applications financed by the Ministry of the Economy and Foreign Trade and the Ministry of the Middle Classes and Tourism, from 80 files financed from 2008-2010 to 240 over the upcoming period.
- o Support a significant increase in expected financial return from participation in international RDI programs, in the amount of € 65 million compared to € 45 million from 2008-2010.
- o Increased governance of clusters Monitoring committees, work programs; specific performance indicators.
- o Management of Luxembourg's participation in EU[45] Article 185 and 187 initiatives.

c) Extend efforts to promote productivity and innovation in public administration operations

In seeking to promote innovation and productivity in public administration[46], measures by the Ministry of Civil Service and Administrative Reform are concentrating on dematerialized access to administrative processes and on optimized processing of administrative procedures by departments. With regard to planning, there is a continued program for which the current master plan covers the period 2010-2014.

- Currently, the "Company" section the one stop concept provides all information required for administrative procedures. This informational segment is being supplemented by providing an online access to these procedures and integrated management of their lifestyles, to include: starting the procedure, online monitoring of procedures, electronic communication of administrative deliverables.
- In terms of optimizing processing of administrative processes, the emphasis is on the following: electronic management of flows, secure data exchange, long-term storage of electronic data, evidence value of electronic signatures, protection of individual data, quality and security of proof of identity and interoperability between public administrations and economic entities on the domestic and European levels. Interoperability on the European level is achieved in the framework of the services

[44] On a case by case basis, with the primary indicators broken down into several sub-indicators.
[45] On a case by case basis, and this management can be set up in collaboration with the FNR.
[46] The presence of the State on the internet not only promotes innovation and productivity in public administration, but also facilitates social inclusion by means of providing multiple interaction channels with other administrations through online services, physical outlets, telephone, e-mail, etc.; multilingual content (currently being prepared) ; rigorous adherence to international accessibility standards for handicapped persons, etc. It is useful to remember that the State Information Technologies Center (CTIE) still supervises the actions of the former *eLuxembourg* service, as well as the *Internetstuffen* and the office and internet skills courses provided by various registered organizations throughout the country, services intended for providing interested parties the skills and infrastructure required to be able to participate in the information society.
To this end, see also chapter 4.5 The social inclusion objective and the key measures for achieving it.

directive and emphasizes semantic coordination of procedures and forms as recommended under the Simple Procedures Online for Cross-border Services (SPOCS) initiative of the Commission.

An agreement concluded between the government and the UEL employer's organization for improving the business environment and administrative simplification ensures an easing of the formalities companies must complete to obtain various authorizations and a systematic reduction of paperwork processing time. The legislative and regulatory measures required for this will be accomplished in 2011[47]. This deals particularly with the reform of legislation concerning historical establishments, the reform of legislation concerning the development of communes, and the implementation of a one stop shop for urban affairs.

4.3 The climate change and energy objective and the key measures for achieving it

European Objective: "*reducing greenhouse gas emissions by 20% compared to 1990 levels; increasing the share of renewables in final energy consumption to 20%; and moving towards a 20% increase in energy efficiency; the EU is committed to taking a decision to move to a 30% reduction by 2020 compared to 1990 levels as its conditional offer with a view to a global and comprehensive agreement for the period beyond 2012, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities*".

This climate change and energy objective is based on European Council decisions within the context of the Energy/Climate package of March, 2007, which put greenhouse gas reductions at 20% by 2020 with relation to the year 2005 in the sectors not covered by the system of greenhouse gas emission allowance trading[48], as well as an increase in the share of renewable energy resources in our final energy consumption to 20% and an improvement in energy efficiency of 20% by 2020[49].

4.3.1 The greenhouse gas emissions objective

4.3.1.1 National target

The most recent inventory of greenhouse gas emissions in Luxembourg covers the period of 1990-2009[50]. It indicates that total emissions amounted to 12.2 million tons of CO_2-equivalent (CO_2-e) for the year 2008 and 11.7 million tons for 2009, excluding international air transportation and the land use change and forestry (LULUCF) factor[51]. Although a significant reduction of emissions has been achieved with respect to the 13 and 12.9 million

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[47] This is a measure of Luxembourg's under the Euro Pact adopted by the heads of state on 11 March, 2011.

[48] Appendix II of Decision No 406/2009/EC of the European Parliament and the Council dated 23 April, 2009 concerning the effort to be provided by Member States in reducing greenhouse gas emissions so as to comply with the Community’s commitments in the area of emissions reductions through to 2020.

[49] There already exist very restrictive national targets for Luxembourg in the area of greenhouse gas emissions and renewable energies.

[50] In accordance with Decision No 280/2004/EC of the European Parliament and the Council of 11 February, 2004 concerning a mechanism for monitoring greenhouse gas emissions in the Community and implementing the Kyoto protocol, estimates of GES for year T must be submitted to the Commission by 15 January of year T+2.

[51] An initial calculation of emissions for 2010 is underway with the Department of the Environment of the Ministry of Sustainable Development and of Infrastructures. It will be submitted to the Commission via the European Environment Agency prior to the summer of 2011.

tons of CO_2-e produced in 2005 and 2006 resulting from the impact of the financial crisis and the economic hardship that ensued, these amounts are well above the 9.5 million tons of CO_2e that Luxembourg committed to as part of the Kyoto Protocol and imply that the country must resort to the Protocol's flexible mechanisms.

However, with around 11.7 million tons of CO_2e released in 2009, greenhouse gas emissions for Luxembourg have been reduced by nearly 9% with relation to the 1990 base year, and 11% compared to the amount used under the Kyoto protocol commitments, for a reduction of 28%. Yet these emissions evolved differently since the base year, as follows:

a) Relatively stable from 1990 to 1993 ;
b) A strong drop between 1994 and 1998, arriving at a low threshold of -33% with relation to 1990 in 1998 ;
c) Steady increase from 1999 to 2005 ;
d) A stable period between 2005 and 2006 ;
e) Reduction as from 2007, accentuated by the impact of the economic and financial crisis in 2009.

These different phases can be explained by the impact of certain technological changes, which is intensified when considering a small country. One of the primary causes of the strong drop in emissions from 1994-1998 was the transition from traditional blast furnaces to electric arc furnaces in the steel industry. However, the coming on stream of a cogeneration combined gas-vapor facility in 2002 forced emissions upward by 0.8 to 1.0 million tons of CO_2e per year.

Still, the regular increase in emissions since 1998 - as well as their stabilization, then reduction in recent years - is the consequence of regular increases of fuel sales, three quarters of which are transacted with non-residents. Cross-border workers have increased in number by over 8% annually since 1990 and now represent nearly 30% of the resident population of the country, through traffic, since Luxembourg is located on one of the principal goods and tourism routes in Europe and gas station tourism. All of this is propped up by fuel sales prices that are lower in Luxembourg than in neighboring countries.

These changes explain how, at present, the primary greenhouse gases produced by Luxembourg is carbon dioxide, representing 92% of the total, and why the combustion of energy sources reaches nearly 90% of this total. Emissions related to vehicle fuels alone represent around 52% of total emissions, with 14% linked to residents and 38% to non-residents. With the **sectors not covered by the greenhouse gas emission allowance trading scheme for which Luxembourg is committed to reduce emissions by 20% over 2005 between now and 2020**, including emissions originating with transportation[52], the country is facing a huge challenge in upcoming years. An initial estimate of this objective indicates an amount of 8.3 million tons of CO_2e to be achieved by 2020 in these sectors through a linear trajectory of 9.7 to 8.3 million tons of CO_2e from 2013 to 2020.

[52] As well as those related to agriculture, waste and water treatment and residential or commercial buildings. According to early estimations for 2009, sectors not covered by the quota exchange system for greenhouse gas emissions represent 81% of total emissions, of which 52% alone correspond to vehicle fuel sales.

4.3.1.2 Key measures

This issue and the challenge it presents are at the heart of the work of the "Partnership for the Environment and the Climate", launched in February, 2010, which brings together representatives of the government, the unions, employers, the Syvicol syndicate of cities and towns and non-government organizations (NGO). The purpose of this process is to draw up the 2nd national action plan for reducing CO_2 emissions, accompanied with a national plan for adjusting to climate change. The work should be completed within the Partnership in May, 2011.

4.3.2 The renewable energies objective

4.3.2.1 National target

Directive 2009/28/EC dated 23 April 2009 for promoting the use of energy produced from renewable resources calls for Luxembourg achieving an **11% share of energy from renewable sources in its gross final consumption for 2020** as well as **an objective of 10% share of fuel energy from renewable resources in the transport sector for 2020.** The indicative trajectory for Luxembourg between 2010 and 2020 as described by this directive regarding energy produced by renewable sources as a percentage of final consumption is summarized in the table below.

Table 6: Indicative trajectory for energy produced by renewable sources as a percentage of final consumption

Year	Percentage
Average 2011/2012	2.92%
Average 2013/2014	3.93%
Average 2015/2016	5.45%
Average 2017/2018	7.47%

Source: Ministry of the Economy and Foreign Trade

4.3.2.2 Key measures

This directive states that Member States shall notify their national renewable energy action plans (NREAP) to the Commission by 30 June 2010. The NREAP calls for achieving the renewable energies objective through the following measures:

- Developing renewable energy within the country by means of producing electricity and heat/cooling from renewable sources as well as using heat pumps
- Adding biofuels into fuels for use domestically as well as developing public and private electric mobility
- Use of the cooperation mechanisms, primarily through statistical transfers and joint projects with other Member States and third countries

The development of energy efficiency between 2010 and 2020 will result in a reduction in absolute terms of the national target in the area of renewable energies. The energy efficiency measures in the plan are taken from the first national action plan in the area of energy efficiency (PAEE). The objectives in figures and a comparison with 2005 figures are presented below.

Table 7: 2005 statistics and 2020 objectives

	2005		2020	
Objective	GWh	%	GWh	%
	465	0,9	5.624	11 %
Electricity, heating and cooling	437	~ 0,9	2.034	~ 4 %
Biofuels and electro mobility	24	~ 0	2.630	~ 5 %
Cooperation mechanisms	0	0	1.080	~ 2 %

Source: Ministry of the Economy and Foreign Trade

The action plan takes up thirty-seven measures to achieve the national objective set by the directive. These measures will take specific shape over upcoming years depending on progress achieved for meeting intermediary objectives.

4.3.3 The energy efficiency objective

4.3.3.1 National target

The EU adopted a framework[53] for energy efficiency (final use) that includes an indicative energy savings objective applicable to Member States, obligations for national public authorities in the area of energy savings and purchase of efficient energy fuels and measures for promoting energy efficiency and energy services. The directive applies to the distribution and retail sale of energy, to measures to improve energy efficiency, to end users except for activates subject to the greenhouse gas emission allowance trading scheme and to a certain extent, to the armed forces. It targets the retail sale, supply and distribution of the major energy vectors that use a network, such as electricity and natural gas, as well as other types of energy, such as district heating, oil-fired heating, coal and lignite, energy products produced from forestry and agriculture and fuels.

The Member States were to adopt and achieve an indicative objective in the area of energy savings of 9% by 2015 and set an intermediary national objective to be achieved in 2009. According to the directive, Member States were to draw up a national energy efficiency action plan (PAEE) in 2007, another one in 2011 and third one in 2014 relating to the administration and implementation of Directive 2006/32/EC.

The first PAEE for Luxembourg, which was sent to the European Commission in March, 2008, includes the following elements:

- Calculations of average annual consumption on the basis of final internal energy consumption during the 2001-2005 period. This annual average consumption is diminished by exports of petroleum products and the consumption of companies participating in the Emission Trading Scheme (ETS). It amounts to 17,576 GWh.

- Calculating the indicative national objective in the area of energy savings. This objective is expressed in absolute value and is applied throughout the entire period of the present

[53] By means of directive 2006/32/EC dated 5 April, 2006.

directive. The indicative national objective in the area of energy savings corresponds to 9% of the above-mentioned average annual consumption and for Luxembourg amounts to 1,582 GWh. The accumulated measures in the PAEE exceed the target value of 9% by 1.4%, representing 10.4%.

- The description of the measures drawn up by the energy services and the other measures targeting improved energy efficiency that help meet the overall indicative national objective in energy savings. The measures may be broken down into the following categories:

  - Early Action Measures (A) that were implemented during the period of 1995-2007 and are continuing to produce the desired effects. The A measures represent around 4.0% of the total effort of 10.4%.

  - New Measures (B) that are in the process of implementation, with effects that have begun to show up after early 2008. The measures account for some 4.1% of the total 10.4% effort.

  - Projected/Possible Measures (C) measures for achieving the indicative national objective in energy savings. The C measures represent around 2.3% of the total effort of 10.4%.

- The measures undertaken by the public sector aim to improve energy efficiency and are used to document that the public sector is playing an exemplary role under the provisions of the 2006/32/CE directive. (Energy efficiency measures taken during the construction of new public buildings and during upgrading of existing public buildings, drawing up of ecological criteria for tenders for the public fleet of automobiles belonging to the State and the communes, etc.)

- Measures undertaken by the State to disseminate information to the players in the market that are concerned relating to mechanisms for promoting energy efficiency and the financial and legal frameworks adopted in view of achieving the indicative national objective in the area of energy savings, as well as measures taken to guarantee that market players implement the conditions and motivations appropriate to strengthening information and advice on energy efficiency in final uses.

At the end of June, 2011 Luxembourg must present, along with the other Member States, its second PAEE to the European Commission as provided for in directive 2006/32/EC. According to directive 2006/32/EC, the second PAEE should:

- Include an in-depth analysis and evaluation of the previous PAEE.

- Include the final results concerning the achievement of energy savings objectives that were set.

- Include plans for complementary measures, as well as information on their anticipated effects, targeting any existing or foreseeable shortfalls with regard to the objective.

- Use and progressively increase the use of harmonized efficiency indicators and reference values, both for evaluating previous measures and for estimating the effects of future measures.

- Be based on available date, supplemented by estimates.

In its first PAEE under directive 2006/3/EC, Luxembourg set an **indicative national objective in the area of energy efficiency in the final use of energy of 10.38% for 2016**. This objective will undergo an in-depth analysis and evaluation in 2011 in the framework of setting up a second PAEE. Simultaneously, **Luxembourg could analyze the feasibility of extending the indicative national objective under directive 2006/32/EC till 2020, which would come to four additional percentage points for the period 2016-2020, resulting in an overall objective of 13% for 2020**. It should be noted that the national objective will remain broadly influenced by the choice of reference period as well as the energy accounting type used (primary versus final energy).

4.4 The education objective and the key measures for achieving it

European Objective: "*improving education levels, in particular by aiming to reduce school drop-out rates to less than 10% and by increasing the share of 30-34 years old having completed tertiary or equivalent education to at least 40%.*"

4.4.1 The early school leavers objective

4.4.1.1 National target

Luxembourg is aiming at the European benchmark as adopted at the education Council in May, 2009 and at the European Council meeting in June, 2010 for a **national objective of keeping the dropout rate below 10%.** If the dropout rate stabilizes below 10% by 2015, the objective will be adjusted[54].

In Luxembourg, the figures resulting from the LFS are subject to strong annual variation due to the limited size of the sampling. Thus, the LFS does not help in identifying which students are affected, nor why they drop out. In order to pinpoint the extent and the reasons that students drop out of school in Luxembourg and to remediate this, the Ministry of National Education and Vocational Training has had in place since 2005, in collaboration with the Local Youth Action (ALJ) group, a procedure for locating young people who left the national school system without diplomas. A list of the names of early school leavers drawn up monthly using the centralized IT system's database with file sheets of student in secondary education is sent to the regional centers of the ALJ whose staff contacts these youths in order to determine why they have dropped out of school and above all to help them find a training program or integrate them into the labour market.

The survey also shored up the finding that certain groups of students run higher risks of leaving school: boys more so than girls, students of foreign nationalities more so than Luxembourg students, ninth form students and trade school students and students who are at least two years behind--this indicator is the clearest reason for leaving school early.

The reasons the most frequently cited by students for leaving school are the following: 22.9% claim a lack of motivation for continuing academic training or for returning to their old school, 23.6% state that they had poor guidance, 25.0% leave because of failure to perform academically and 16.5% state that they found no apprenticeship or that the contract they had was cancelled.

[54] Instrument of measure: the nationwide study on early school leavers.

Table 8: Statistics on early school leaving following the national study on leaving school early (national figures) [55]

Study number	School year	Rate of dropouts
1	2003/2004	17,2%
2	2005/2006	14,9%
3	2006/2007	9,4%
4	2007/2008	11,2 %
5	2008/2009	9,0%

Source: Ministry of National Education and Vocational Training

Definitions: It also includes young people who, after initially dropping out, re-register in a school, then drop out again during the same observation period and for whom no additional information is available regarding their current situation.
By "re-registered students" are ment young people who dropped out of school for a certain period, but who subsequently re-register in a Luxembourg or foreign school. These young people are included in the following analysis because their academic path involves leaving the Luxembourg school system, even on a temporary basis.

4.4.1.2 Key measures

The decrease in the number of early school leavers beginning in 2003 is due to improved guidance, systematic follow-up of dropouts by the ALJ and the creation of new academic possibilities for students with difficulties. Analyzing the risks and reasons for leaving school early helps to identify measures to reduce rates even further. Three action paths have been chosen: promoting academic success, bolstering guidance activities and introducing programs allowing students to return to school and training courses.

In Luxembourg, any action undertaken on the level of the educational system must account for the heterogeneity of the academic population, which features foreign student rates of between 35 and 50%, depending on the category of teaching, and the system's multilingual aspect, which gives instruction in Luxembourgish, German and French in primary education and in English at the beginning of the lower cycle of secondary education and trade schools.

- Promoting academic success

Three laws were approved in 2009 that bring reform to primary education. They will result in the successive reorganization of the first nine academic years, including pre-school, addressing the pedagogic and organizational aspects. The reform of primary education also includes increasing the age of compulsory education, which goes from 15 to 16 years.

New guidance procedures will be implemented as from 2013, concerning Cycle 4 of primary education to the lower secondary school classes. The lower class of secondary education and trade school are the transitional phase between primary school, the point of departure for formal apprenticeships and upper forms of secondary school, with their mission of qualifying students for professional life and higher education. The priority for the lower classes is to consolidate and prolong basic skills learned in primary school.

[55] Ministry of National Education and Vocational Training, *L'Enseignement luxembourgeois en chiffres - Le décrochage scolaire au Luxembourg : Parcours et caractéristiques des jeunes en rupture scolaire. Causes du décrochage année scolaire 2008/2009*, Luxembourg, 2011
Source: http://www.men.public.lu/publications/etudes_statistiques/etudes_nationales/110203_decrochage08_09/110207_decrocheurs_08_09.pdf

At the end of 2010, a reform plan appeared for the lower classes of secondary and trade school, whose objective was to increase academic success among students aged 12-15 years and to promote appropriate guidance toward training in upper forms of secondary school. This element is a central part of preventing youth from leaving school, as it is often in the lower cycle that they leave or are guided toward a training program that does not suit their capabilities or desires that they subsequently abandon. The reform includes implementing a didactic framework by determining skill bases, an assessment framework, through grade reports, end of cycle reports and a common national test, and a guidance program for secondary technical education. The tools for this guidance program include tutoring, instruction materials for open choice education, information concerning the working world, common 8th grade examination, individual interviews and forming personal projects, access profiles addressing skills required to get into higher education and the guidance profile of a student.

The reform of the lower classes goes hand in hand with that of the upper cycle of secondary education, secondary technical school and professional training. The common thread of these reforms is motivating young people to exert the effort that will get them into the training of their choice and onto a lifelong learning path.

- Bolstering guidance activities

In November 2007, the National Guidance Forum was tasked with recommending a lifelong learning information and guidance concept[56]. In its conclusions, the Forum recommended creating a guidance program concept that brings together all the players in this domain. A draft law for this will be introduced in 2011. The guidance program concept is based on the following definition: *"The term "Guidance" refers to a series of activities that helps persons at all times in their lives to identify their capabilities, skills and interests, make informed decisions regarding choices of studies, training, and professional activities. It has the joint purpose of developing personal traits and improving society".*

- Programs allowing students to return to school and training courses

In addition to being able to return to secondary school and trade school or professional training courses, there are two programs specifically directed to young people that leave school early.

In 2009 April, a law on the future creation of a school for second chances was approved. The second chance school accepts students between the ages of 16 and 24 who cannot progress in secondary or technical instruction in the standard school system, who have interrupted their academic studies, who cannot find an apprenticeship or who are newly arrived in the country. The job of the school is to implement general and practical instruction as well as an integrated socio-pedagogic structure. Training of students includes general instruction modules, practical apprenticeship modules and internships in professional environments, in addition to supplementary activities. Skills bases that are targeted are those required for admission to a set training course in secondary education or trade school and the subjects taught are based on teaching programs for secondary and technical education.

[56] The Forum brings together the ministries of National Education and Vocational Training, Higher Education and Research, Labour and Employment and Family Affairs and Integration.

Another program intended specifically for young people under 18 that do not meet the criteria for a professional trade school course, who lack the skills necessary to access the labor market, or who have left school early, consists of professional guidance and initiation courses. These courses were established in 2007 and involve general and social instruction as well as professional pre-training. Currently, the curricula teams in secondary schools and training centers that offer these programs are adapting training content to skill bases intended for the lower cycles with a view to facilitating transition to professional training. In 2012, the program will be evaluated for effectiveness[57].

The second chance school was launched in March, 2011 on a temporary site with some forty students. The school will operate from its ultimate location at the beginning of the 2013-2014 academic year with 200 participants. The monitoring indicators used here are the rate of success and the academic paths of students. The budget was € 195,000 for 2010 costs, estimated expenses are around € 155,000 for 2011 and €245,000 for 2012, in addition to € 40 million for construction on the final site.

4.4.2 The tertiary education objective

4.4.2.1 National target

Luxembourg is aiming at the European *benchmark* as adopted at the education Council in May, 2009 and at the European Council meeting in June, 2010 for a **national objective of 40% for the proportion of persons aged 30-34 that have obtained a tertiary or equivalent education institution**.

Luxembourg has decided to define this indicator with relation to the resident population - this "national" rate being around 30% at present - instead of referring to the Eurostat LFS, according to which Luxembourg had already achieved a rate of 46.6% in 2009. Luxembourg intends that this indicator provide data on the capacity of the national education system to train young people who can earn post-secondary school diplomas rather than it being a reflection of post-secondary qualifications requirements of the labour market.

4.4.2.2 Key measures

New bridges to higher education have been created through the reform of professional training. This involves offering preparatory modules to access higher technical studies that may be taken either as part of the normal studies path or following receipt of a diploma.

The training curriculum offered for higher education in Luxembourg will be widened in the area of training leading to obtaining an associate's degree, known as the BTS. The law dated June, 2009 on the organization of higher education constitutes the first phase. Organizing this cycle of studies is still appropriate, as is illustrated in a number of surveys concerning jobs in Luxembourg and the Greater Region. Thus in areas of administration, sales and industry, the share of jobs occupied by persons holding tertiary diplomas of this type varies between 11% and 45%, depending on the region and sector concerned. Changes in career profiles are so frequent that working in them requires short and long-term university qualifications.

[57] See also Chapter 4.5 The social inclusion objective and the key measures for achieving it, in particular the measure relating to promoting the transition of young people from academic to professional life and those that will motivate them to return to school.

In addition, while the Bologna Process calls for structuring tertiary studies in three cycles, the Bergen conference of tertiary education ministers in 2005 laid down the principle of earning intermediate qualifications during the first cycle.

Diplomas awarded at the end of this type of formation certify training paths that make them understand about companies and their development potential: this training must be constantly adapted to assimilate change in professions. The close relationships with the economic world are reflected in an effective collaboration with a number of professional partners, major corporations or SME/SMI in the region who bring students in for internships, send their employees to give training and participate in updating this training.

It should also be remembered that the accreditation of prior and experiential learning aims to increase and give access to studies and the number of persons holding diplomas. An accreditation of prior and experiential learning corresponds to having worked in a profession for a cumulative but not necessarily consecutive period of three years as an employee, a contractor or volunteer. This experience must fully or partially justify the knowledge and aptitudes required to obtain the diploma being sought. Certified periods of continuing education may also lead to accreditation.

This same legislation also sets the terms for setting up higher education courses, or creating subsidiaries or public or private establishments for learning in Luxembourg.

The second means of achieving the objective, apart from increasing curriculum choices, will be in providing supervision for students. A tutoring system will be broadly available at the University of Luxembourg to provide a more personalized coaching of students. However, it is pertinent to note that most Luxembourg students attend foreign universities. The system of financial aid for university studies is a system that helps all accede to university studies. Each young Luxembourg citizen or resident of Luxembourg can pursue university degrees independently of financial status or the will of their parents. Students are considered young adults who are responsible for their educations and financing their university studies. Each student has the right to a base amount of €13,000 per academic year, to which is added tuition assistance up to € 3,700 per academic year. This base amount is identical for all students, regardless of the country in which they pursue their studies.

4.5 The social inclusion objective and the key measures for achieving it

<u>European Objective:</u> "*promoting social inclusion, in particular through the reduction of poverty, by aiming to lift at least 20 million people out of the risk of poverty and exclusion. The population is defined as the number of persons who are at risk-of-poverty and exclusion according to three indicators (at-risk-of poverty; material deprivation; jobless household), leaving Member States free to set their national targets on the basis of the most appropriate indicators, taking into account their national circumstances and priorities*."

4.5.1 National target

The European Council meeting of 17 June, 2010 confirmed the EU objective of promoting social inclusion, particularly by reducing poverty and by endeavoring to ensure that at least 20 million persons stop facing the risk of poverty and social exclusion.

In order to assimilate the multi-dimensional approach to poverty, the Ministry for Family Affairs and Integration conferred a meeting of the inter-ministry group for social inclusion in December, 2010 to ensure coordination of national social inclusion policies. The Ministry for Family Affairs and Integration consulted the general public and the social partners in

February, 2011. During this meeting, it was decided jointly to determine what additional measures be implemented to fight poverty and social exclusion in the years following 2011[58] and to set up working groups depending on the various measures determined.

With regard to a horizontal and transversal approach, it should be noted that the work undertaken to increase the employment rate to 73 % as part of the national employment target[59] and to maintain the rate of dropouts to below 10 % under the national target for early school leavers[60] are also measures for promoting social inclusion, in particular reducing poverty, in combination with those listed below.

4.5.2 Key measures [61]

Under the stated target, the government has proposed six measures for which the extent of achievement will depend on changes in the socio-economic context of the post-2010 period and on the impact all the policies implemented in the post-2010 period have on the social inclusion issue. It should be noted that it is important that all the measures taken by Luxembourg over this post-2010 period, including services in kind, be reflected in the European indicators capable of assessing the impact of these measures for achieving social inclusion. Currently, the rate of at risk of poverty does not take into account non-monetary services put in place by the government. These services are intended for persons confronted with a situation in which they risk poverty and social exclusion.

- Continue the policy of providing socio-educational welcoming structures to children.

The existence of services providing socio-educational welcoming structures to children between the ages of 0 and 12 years is intended to break the cycle of inter-generational transmission of poverty by making an appropriate service available to children exposed to the risk of poverty. Child care and education services for small children is an effective way to develop the basis for later learning, to spot signs of academic neglect and to uphold all forms of diversity. In addition, in order to promote including handicapped children in hosting structures for kids, specific training is provided to professionals working in these structures. The training informs professionals and makes them aware of issues so as to enable them to take in, assist and supervise all children, with or without "specific needs", by offering them a suitable place to develop, learn and socialize. The measure being proposed is also an essential element for arriving at equality between men and women, contributes to social inclusion of children and to social cohesion in our multi-cultural society.

One of the objectives aims at continuing quantitative and qualitative socio-educational welcoming structures for children to facilitate parents' access to employment and consequently an income stream. On the basis of estimations, Luxembourg has taken on a development program extending over several years that will increase the number of children

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58 Contributions from the European Anti Poverty Network (EAPN - Lëtzebuerg), the National Council of Luxembourg Women (CNFL), the Chamber of Employees, Caritas Luxembourg and the Union of Luxembourg Companies (UEL).
59 See chapter 4.1.1
60 See chapter 4.4.1.1
61 Measures 1 to 6 are part of the flagship initiative "European Platform Against Poverty" in as much as the platform emphasizes active inclusion strategies for persons who are the furthest from the job market, on the availability of high quality social services, on the struggle against inter-generational transmission of poverty, on the social inclusion of persons at risk, on the fight against homelessness and exclusion related to housing. Measure 4 is also part of the flagship initiative "Youth in Movement".

who can attend socio-educational centers to 35,000 by 2015. The government will work closely with the communes to draw up an action plan for child care. Objectives for upcoming years will be determined based on results at the mid-term review of the Europe 2020 strategy.

On January 1st, 2011, STATEC estimated the population of the 0-12 age group at 77,239 children. On 31 December, 2010 the total number of places for children aged 0-12 in the socio-educational welcoming structures was 32,342. The number of authorized places in socio-educational welcoming structures grew by 34% from 2009 to 2010. The change in different types of structures is shown in the table below.

Table 9: Changes in different types of welcoming structures

	Places in 2009	**Places in 2010**	**Difference between 2010 and 2009**	**Increase from 2009 to 2010**
Child reception centers	18,204 places	23,718 places	5,514 places	30%
Day care centers, nurseries, registered child care centers	2,042 places	2,059 places	17 places	1%
Day care centers, nurseries, commercial child care centers	2,369 places	4,425 places	2,056 places	87%
Nanny services	1,606 places	2,140 places	534 places	33 %

Source: Ministry for Family Affairs and Integration

The national indicator for monitoring this measure is the change in number of places in socio-educational welcoming structures for children. The measure will receive a budget allocation of approximately €140 million.

- Making beneficiary parents of the Guaranteed Minimum Income (RMG) mechanism aware of the usage of welcome center checks.

This measure also targets breaking the cycle of inter-generational transmission of poverty. According to data provided by the National Social Action Service (SNAS), the number of households receiving services under the RMG law that include one or several children under the age of 13, amounted to 2,258 on 31 December, 2010.

In December 2010, the National Solidarity Fund (FNS) launched an awareness campaign targeting households with regard to using the welcome center checks. The SNAS will contribute regularly to this effort through information meetings to which its Welcoming department invites applicants for services under the RMG law who are eligible for an insertion indemnity. As part of their mission, the regional Social Action Services and their social centers will also participate in the awareness effort.

Since this is a measure to be implemented continuously as a part of the missions of the organizations involved, no specific budget for the measure has been set up. The national indicator for this measure will be the number of parents made aware of using the welcome center checks.

- Increasing activation rates as part of the RMG mechanism.

Activation as a part of the RMG mechanism is one of the pillars of the active inclusion policy on the national scale. Administrative statistics assembled by the SNAS have shown that since 2007, the number of RMG beneficiaries that are not excluded from professional insertion activities (PIA) has increased considerably[62]. This increase was more pronounced than that observed for the total number of persons in RMG beneficiary households up till 2009, and the rate of persons not excluded also increased during this period, stabilizing in 2010 (2007: 9.1% ; 2008: 9.8% ; 2009: 11.0% ; 2011: 11%) In addition, while the number of PIA increased significantly during this period[63], this bolstered activation level was not enough to maintain activation rates recorded in 2007 (2007: 64.8% ; 2008: 64.9% ; 2009: 61.5%; 2010: 62.3%).

Since the PIA program was intended, in line with the active inclusion concept, to improve employability of persons who are generally very far from the job market and to support their professional insertion, the SNAS aims to increase their participation even more in the active measures of the RMG mechanisms. The objective is to work with the support of the regional Social Action Services, organizations cited in the first paragraph of article 13 of the RMG law and companies to increase the activation rate of RMG beneficiaries not excluded from the PIA actions by two units with relation to the rate set for 2010, through to 31 December, 2014.

The objective for 2020 will be determined based on the results of the mid-term review of the NRP. Since this is a measure to be implemented continuously as a part of the missions of the organizations involved, no specific budget for the measure has been set up. It should however be noted that in 2011, the State contributed € 2.74 million to SRAS operating expenses and that an initial loan of € 0.145 million has been allocated to the 2011 budget in order to cover management costs of insertion indemnities awarded to activated persons. The national indicator will be the activation rate of RMG beneficiaries not excluded from professional insertion activities.

- Promote measures favoring the transition of young people from academic to professional life and those motivating them to return to school.

The government will delve into the problematic of disadvantaged young people through the National Youth Service (SNJ), particularly qualified young people of the NEET profile (Not in Education, Employment or Training). Action should be taken along three lines to help these young people. Firstly, cooperation between the various departments involved must be improved. Secondly, young people without any occupation need to be offered alternative short-term solutions, while simultaneously providing individualized counseling. Lastly, it is clear that in-depth analyses of the difficulties in the area of transition from school to working life must be carried out.

In order to develop cooperation between the various administrations, a structured consultation on the issue is now being implemented. Information and awareness sessions intended for young people were tested in 2010 on the regional level and will be widely used in 2011. There will be close cooperation with the network youth centers at this level and with specialized guidance counseling organizations. The doubling of hosting capacity at the Voluntary Service for Personal Orientation (SVO) is under consideration. In addition, in order to be able to

[62] 2007: 1288 ; 2008: 1425 ; 2009: 1845 ; 2010: 1987
[63] 2007: 835 ; 2008: 925 ; 2009: 1134 ; 2010: 1.239

counsel young people through existing services, the regional cells of the SNJ who supervise SVO participants will be reinforced.

In order to achieve the final objective through to the mid-term review, implementation will concentrate on the following three avenues of approach.

- Developing an information platform on the perspectives of the young and the development of methods of cooperation between actors will allow an individualized follow-up to take place. The follow-up indicators that will be used are the number of young people monitored under the individualized assistance program and the number of visits recorded on the internet site[64].
- By extending the SVO capacities, double the number of young can benefit from the mechanism that will kick off in 2011. It will be evaluated by an external organization. The monitoring indicators to be used will be the number of candidates, the number of young people actually participating in the program, the number of young people returning to school or taking up a training program with the SVO and the number of young people entering the labour market following their volunteer service.
- A qualitative study will be carried out among young people who have participated in the SVO program, existing data will be analyzed, potential players who can improve knowledge regarding the difficulties of transition will be recognized and specific projects and achieved projects will be identified.

The approximate budget allocation for this measure will be € 50,000 for avenue 1, an annual budget of around € 2.5 million for avenue 2 and an annual budget of € 25,000 for avenue 3. An application for co-financing has been submitted to the ESF for section 2.

- Full utilization of instruments that will be put in place under the social aid law that took effect on 1 January, 2011 with the ambitious objective of fundamentally modernizing Luxembourg concepts in the area.

The law is supposed to trigger a preventive dynamic to break the vicious circle of poverty and exclusion. Social aid will provide persons in need and their families with access to the goods and services appropriate to their specific situations in order to help them acquire or maintain their autonomy. The aid is centered on social assistance, accompanied by material in-kind or cash assistance, if required. The measure related to this law aims for a standardized collection of data. In January, 2011 the Ministry for Family Affairs and Integration provided data collection tools to 30 social centers for use in identifying the type, the breadth and the distribution of requests for aid as well as all aid types and their impacts

In order to facilitate access to aid for persons in difficulty, the law dated 17 December, 2010 on the reform of the health care system provides for the introduction of a third party payer system. Direct assumption of medical expenses is provided for insured persons with very few resources attested to by the social office in charge of the case, in accordance with the methods determined by legal and negotiated agreements.

An annual budget allocation of around € 16.5 million has been set aside, with 50% borne by the State and 50% by the communes.

[64] For more details see: http://www.anelo.lu/

- Housing action to promote social inclusion.

The government will draw up a national integrated strategy in collaboration with NGOs and the communes to stamp out homelessness. The strategy aims at providing a solid basis for pursuing, bolstering and consolidating the efforts undertaken for years in fighting homelessness. A count of social housing units available for rental will be carried out.

The draft law for introducing housing and rent allotments and the manner in which they will be distributed was adopted by the Government Council in December, 2010. The aid provided by these projects will temporarily support physical persons that cannot pay one or several loans taken out to acquire, build or improve their housing unit and who are unable to pay their rent for housing rented under the terms of a lease for the occupancy of such a unit, due to a decrease in income following a significant occurrence, such as partial unemployment or the death of a spouse. To qualify for this aid, a certain number of conditions must be met. For example, household income may not exceed three times the amount of the official gross minimum wage and it cannot be possible for the household to assume its rent payment obligations or to repay its house loan. According to the Housing observatory (*Observatoire de l'Habitat*), 2,000 households are facing this situation. Consequently, if all households were facing a similar situation and applied for aid, the total maximum expenditure for this item would amount to around € 18 million.

5. Horizontal and methodological issues

5.1 Coordination of the distribution of spatial resources

In order to promote better use of resources and to reduce greenhouse gas emissions, it is appropriate to coordinate the distribution of spatial resources and their functions with impacts on primary resources such as water, energy, biodiversity, etc., as well as to optimize the relationships between the various spatial functions. The instruments for this are the sector plans being drawn up: these include sector plans for transportation, housing, commercial zones, large rural spaces, reconversion projects in Belval-Ouest and Mersch, as well as the States-Communes cooperatives process[65] that target an equitable and simultaneous assimilation of essential requirements to the development of cities and urban areas, through cooperation between the State, local actors, inhabitants and economic players through a multi-sector approach.

5.2 National ownership

National ownership is crucial. The government is ensuring that reforms enacted in the framework of the NRP are drafted following extensive consultations. For example, below are described some of the many efforts undertaken to enhance national ownership of the Europe 2020 and the Luxembourg 2020 strategies:

- Two orientation sessions were held in Parliament in June 2010 and March 2011[66]. The various parliamentary commissions concerned with the Europe 2020 strategy have imparted their observations to the government.
- In 2010 and in 2011, many meetings were held between the government, the social partners and civil society to discuss the crisis and what tools could be used to alleviate economic deterioration, while preparing Luxembourg's exit strategy from the crisis[67]. During the first half of 2011, consultations were also set up with the social partners and civil society regarding the various national objectives[68] that were set as part of the Luxembourg 2020 strategy, with many observations sent subsequently to the government[69].
- With a view to involving local players more in the Europe 2020 strategy, Luxembourg is participating in a cooperation project known as "EU2020 Going Local" through the government and the *Pro-Sud* union,[70] together with 12 other European regions to exchange good practices in the area of implementation and communications actions on the local and regional scale[71]. The priority themes for this project are transportation and energy. The government has set up an Urban Policy Information Cell (CIPU)[72], together

[65] For more details see: http://www.dici.lu/ ; http://www.nordstad.lu/ ; http://www.uelzechtdall.lu
[66] For more details see: http://www.odc.public.lu/actualites/2011/03/debat_europe_2020/index.html
[67] For more details see: http://www.odc.public.lu/actualites/2010/04/Tripartite2010/index.html ; http://www.gouvernement.lu/salle_presse/actualite/2011/03-mars/08-pm-syndicats/index.html ; http://www.gouvernement.lu/salle_presse/actualite/2011/04-avril/02-tripartite/index.html
[68] As an example, let us cite consultations for the national targets in the area of R&D and energy: http://www.odc.public.lu/actualites/2011/02/consultation_rdi_europe2020/index.html ; http://www.odc.public.lu/actualites/2011/02/consultation_energie_europe2020/index.html
[69] Let us cite the example here of the position taken by the Luxembourg Chamber of Employees (CSL) concerning the annual growth survey (16 February, 2011 - Source : http://www.csl.lu/prises-de-position), or the UEL's contribution (22 March, 2011 - Source : http://www.uel.lu/fr/position/index.php)
[70] For more details see: www.prosud.lu/
[71] A European seminar took place in early 2010 in Luxembourg on this issue:
For more details see: http://www.odc.public.lu/actualites/2010/01/Lisbon_going_local/index.html
[72] For more details see: http://www.cipu.lu/

with the major cities and urban regions. Apart from its role as an awareness tool for assimilating the roles of cities and local players in implementing the strategy, the CIPU is associated with the establishment of the NRP in regard to its urban policy section and the contribution to the Europe 2020 strategy on the regional and local levels.

In Luxembourg, the common determination of the broad guidelines and specific measures is thus accomplished after extended consultations between the executive and legislative powers, and national public and local authorities as well as the social partners.

5.3 Communication

It is useful to examine the difficulties encountered by public authorities in implementing structural reforms. Diverse studies have shown that the resistance to structural reforms is linked to the fact that uncertainty regarding expected future benefits of reforms is often greater that the uncertainty regarding costs incurred. The government attaches particular interest to this challenge and intends to pursue its efforts in the framework of the Europe 2020 strategy. Several communications tools are to be used, including public events with wide visibility in the media. One example of this is the "On the road to Lisbon" colloquium, of which the fourth edition entitled Luxembourg 2020 took place in December, 2010[73] and the establishing of the internet site by the Competitiveness observatory (*Observatoire de la Compétitivité*)[74].

5.4 Evaluation, monitoring and follow-up

Progress achieved in implementing the Luxembourg 2020 strategy should have effective follow-up, reporting and evaluation processes.

To this end, the government has acquired several instruments:

- In order to optimize coordination of the NRP, the Europe 2020 inter-ministerial network is consulted periodically concerning the implementation of reforms. The Competitiveness observatory is coordinating this work.
- Diverse structural indicators used as part of the Lisbon strategy had a tendency to fail to take account of the specific circumstances surrounding Luxembourg[75]. Different key indicators of the Europe 2020 strategy also pose a problem, chiefly due to the very high proportion of cross-border workers on the job market. It proved to be opportune to broaden the statistical follow-up on the national level. A Competitiveness Scoreboard was established in 2004 by the Competitiveness observatory, the latest version of which was presented at the end of October, 2010. The overall competitiveness indicator calculated through updating of the scoreboard classed Luxembourg in 9th place in the EU-27[76].
- Applying micro and macroeconomic evaluation methods of economic policies has proven necessary, although doing this type of evaluation is a relatively difficult task to achieve. A *Dynamic Stochastic General Equilibrium* (DSGE) model that recognizes Luxembourg's

[73] For more details see: http://www.odc.public.lu/actualites/2010/12/colloque_Luxembourg_2020/index.html
[74] For more details see: http://www.odc.public.lu/
[75] Note with relation to this that cross-border workers are not accounted for in the "Employment Rate". This rate concept is purely a national one, involving residence. Yet the internal job market is filled by nearly 40 % cross-border workers, and nearly half of all newly created jobs in the recent past have been filled by cross-border workers
[76] Ministry of the Economy and Foreign Trade, Competitiveness Report 2010, Luxembourg, October, 2010
For more details see: http://www.odc.public.lu/actualites/2010/10/Bilan_Competitivite_2010/index.html

specific circumstances has been put into place[77]. However, it should not be forgotten that there is no ideal structure for an institutional macro-econometric model.

5.5 Coordination with structural funds

Coordination between the NRP and the structural funds is required because the Europe 2020 strategy also has a Community action program. Projects developed and supported by Community financing under the structural funds heading are required to contribute to meeting the objectives of the Europe 2020 strategy.

[77] For more details see: http://www.odc.public.lu/activites/LSM/index.html

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