



National plan for smart, sustainable and inclusive growth

Luxembourg 2020

Courtesy translation

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National Reform Programme
of the Grand Duchy of Luxembourg under the European Semester 2014



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ACRONYMS

ABBL	Association of Banks and Bankers in Luxembourg
ADEM	Employment Development Agency
AIP	Professional Insertion Activities
ALJ	Local Youth Action
CAE	Work-Support Contract
CASNA	Welcome center for newly arrived students
CCPUE	Coordination Unit for Urban and Environmental Projects
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	Luxembourg National Health Fund
CPTE	Permanent Committee for Labour 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
E2C	Second chance school
EFT	Labor Force Survey
EPC	Economic Policy Committee
ETS	<i>Emission Trading Scheme</i>
FNR	National Research Fund
ESF	European Social Fund
GES	Greenhouse Gas Emissions
IFBL	Luxembourg Institute of Banking Education
IGSS	Inspectorate General for Social Security Administration
ILR	Luxembourg Regulatory Institution
IVL	<i>Integratives Verkehrs-und Landesentwicklungskonzept</i>
NEET	<i>Not in Education, Employment or Training</i>
NREAP	National Renewable Energies Action Plan
NGO	Non Governmental Organisation
PAEE	Action Plan for Energy Efficiency
GDP	Gross National Product
NRP	National Reform Programme
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
SRAS	Regional Social Action Service
SSM	Minimum wage
STATEC	Luxembourg Central Statistics and Economic Analysis Office
SVO	Voluntary Guidance Service
SYVICOL	Syndicate of Cities and Towns in Luxembourg
EU	European Union
UEL	Employer's Organization

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1. Introduction

The first signs of an economic recovery are beginning to appear and a certain number of significant macroeconomic imbalances are being corrected. The latest forecasts of the European Commission confirm evidence of a slow recovery in the EU. The EU has achieved positive growth following five years of very limited and even negative growth. The recovery should continue to take hold in 2014. The EU has thus probably reached the turning point in the crisis, but the recovery that has begun is still tremulous and fragile, against a world economic backdrop fraught with multiple uncertainties. At this stage, in 2014, the challenge now consists in first stabilising the economic and financial situation in order to bring deficits and debt back down to a reasonable level. Consequently, it is necessary to preserve competitiveness while doggedly and ambitiously implementing policies hammered out jointly at the EU level, as well as meeting reform commitments stated in National Reform Programmes (NRP) and identified in country specific recommendations.

While both necessary and comprehensive, too little time and energy have been expended up till now on implementing the structural changes needed to enable economies to recover higher growth rates. The crisis has certainly slowed progress achieved with relation to the Europe 2020 strategy objectives, but nevertheless the importance of Europe's long-term challenges have not diminished. It is now more important than ever to direct efforts both toward measures that will produce short-term impacts on growth and on developing a genuine growth model for the medium and long-term by improving competitiveness and bringing about significantly increased job creation, particularly with regard to the employment rate. The five priorities determined at the end of 2013 by the European Commission as part of its annual growth survey and validated by the European Council take on primordial importance against this backdrop: pursuing differentiated, growth-friendly fiscal consolidation; restoring lending to the economy; promoting growth and competitiveness for today and tomorrow; tackling unemployment and the social consequences of the crisis and modernising public administration.

Since that last NRP publication in April 2013¹, advance elections have produced a new government in Luxembourg². The new government's programme is focused on managing the State and public finances, sustainability of policies, promoting growth, sustainable development and social cohesion, the fight against unemployment, and societal progress. The new government is emphasising its determination to stimulate economic growth that will create jobs. At the beginning of April 2014, the Prime Minister's state of the Nation address stipulated priorities in upcoming months and years for implementing the government's strategy³.

The 2014 version of the NRP is an update that takes stock of the implementation of reforms and measures announced in recent years and is thus a carry-over of the previous versions⁴, as well as a description of the new government's strategy in the areas of growth and employment. The 2014 NRP also incorporates measures related to 2013-2014 country specific recommendations to

¹ For more details see: http://www.odc.public.lu/actualites/2012/04/PNR_Luxembourg_2020/index.html ² For more details see the 2013 government Programme: <http://www.gouvernement.lu/3350706/10-annexes>

² For more details see the 2013 government Programme: <http://www.gouvernement.lu/3350706/10-annexes>

³ For more details see: <http://www.gouvernement.lu/3642384/09-edn-fr?context=519177>

⁴ Various projects stated in the NRP last year could not be worked on until the end of 2013 or early 2014, and as a result various reforms announced in the 2013 NRP could not be put into practice and are included in this 2014 NRP, in as much as the new government has decided to retain them.

Luxembourg⁵ by the Council⁶, Luxembourg's national objectives for 2020, priorities of the 2014 annual growth survey and the conclusions of the European Council.

- On the macroeconomic level, Luxembourg, contrary to the two previous reports, was among those Member States subject to an in-depth review by the Commission after the publication by the end of 2013 of the third Alert mechanism report (AMR) relating to the new MIP procedure for preventing and correcting internal and external macroeconomic imbalances. In its in-depth review⁷ published in March 2014, the Commission did however remark that "*The macroeconomic challenges of Luxembourg have not been identified as imbalances in the sense of the MIP (...)*". The fact remains that the government continues to closely monitor the country's macroeconomic performance.
- From the perspective of microeconomics and employment, the digital economy, innovation and productivity, the long-term structural pillars of this NRP remain the rational use of resources through a transversal and integrated territorial process, supporting creation / transmission of SMEs and their development, using the internal market to its full potential, social cohesion / inclusion⁸ and gender equality as cross-disciplinary objectives. The government is paying particular attention to the administrative simplification process from the citizens' services aspect and from the perspective of simplifying company procedures. To this end, the foundations of administrative reform will be laid through the establishment of an inter-ministry task force and the systematic use of information and communication technologies (ITC) and the modernisation of IT tools, supported by appropriate training at all levels of government.
- On the budgetary level, the NRP goes hand in hand with healthy and viable public finances like those formulated in the Draft Budgetary Plan (DBP)⁹ and the Stability and growth program (SGP)¹⁰ for Luxembourg.

In the area of governance, the Foresight Committee will be institutionalised and bolstered under the aegis of the Ministry of the Economy and the Ministry of Finance. The particular objective of this new "National Economic and Financial Committee" is to coordinate the drafting of the NRP, the DBP and SGP.

The government will launch a major effort, in close cooperation with the various stakeholders, in the area of reforms combining fiscal consolidation, competitiveness policies and active labour market policies to promote employment while retaining social cohesion. The government also commits particularly to reinvigorating the social dialogue mechanism, primarily through the Economic and Social Council (ESC). This type of governance should be the vehicle for bringing the country out of this period of extended crisis and to lay the foundations for smart, sustainable and inclusive growth.

⁵ RECOMMENDATIONS OF THE COUNCIL regarding the Luxembourg national reform program for 2013 and the Council's opinion on the Luxembourg stability programme for 2012-2016.

⁶ For more details see: <http://www.odc.public.lu/publications/pnr/index.html>

⁷ COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL AND THE EUROGROUP, Results of in-depth reviews under Regulation (EU) No 1176/2011 on the prevention and correction of macroeconomic imbalances, Bruxelles, 5 March 2014. For more details see:

http://ec.europa.eu/economy_finance/economic_governance/documents/2014-03-05_in-depth_reviews_communication_en.pdf

⁸ On the social level, this NRP is also consistent with the National Social Report (NSR)

⁹ For an update through March 2014 of the Luxembourg 2013-2014 Budget Plan:

http://www.mf.public.lu/publications/projet_budget/projet_plan_budget_170314.pdf

¹⁰ For more details see: <http://www.mf.public.lu/publications/index.html>

2. The macroeconomic scenario for 2014-2018

2.1 Macroeconomic perspectives for the period covered by the program

It is essential that NRP measures take into account the constraints of the macroeconomic environment and the medium-term budget strategy that results from them. Implementing the NRP as a whole thus falls under the same economic hypotheses involving macroeconomic projections as those of the Stability and growth program (SGP).

In 2013, the international economic environment recovered a degree of balance. Luxembourg's GDP moved upward in 2013, registering real growth of +2.1%, following a drop of -0.2% in 2012. The macroeconomic forecasts prepared by the Luxembourg Central Statistics and Economic Analysis Office (STATEC)¹¹ are calling for real growth above +3% in 2012. According to medium-term SGP macroeconomic forecasts, growth in Luxembourg will improve progressively by +3.2% in 2015, +3.5% in 2016, +3.6% in 2017 and +3.7% in 2018.

For the long term, the government has aligned its main economic hypotheses with those in the macroeconomic scenario used by Luxembourg as part of the Working Group on Ageing Populations and Sustainability of the EU Economic Policy Committee and of its most recent report on ageing¹².

Frame 1: Growth potential in Luxembourg¹³

In early 2014, STATEC published an analysis of potential growth in Luxembourg. The study analyses the production function approach adopted by the European Commission to calculate potential growth and structural balance of Member States and to discuss its application in the case of Luxembourg. The empirical framework established by the Commission was applied directly to data from national accounting from STATEC and the results acquired were compared to estimates published by the Commission in the Spring of 2013. Various methodological differences led to estimates of forces driving productivity and potential growth that were slightly more optimistic, which demonstrates the limitations of a "one size fits all" community approach.

The principal conclusions of the study are as follows: *"In general, the results of this research cast doubts on the one-size-fits-all approach of the Commission. This is true in the light of the special character of the Luxembourgish economy, a small very-open economy and prominent financial center. This also suggests interesting venues for further work. A possible extension/modification of the approach (...) is to consider the impact of variables accounting for the financial cycle on Luxembourg, which has been found to improve the measurement of potential output and the gap for other countries (Borio et al., 2013). The NAWRU and labour input model could also be re-considered and developed further to better capture the characteristics of Luxembourg labour market than those produced by the Commission for the years 2013-2016."*

2.2 The macroeconomic impact of structural reforms

Over recent years, major efforts have been made in Luxembourg in the area of evaluating reforms. An econometric DSGE (Dynamic Stochastic General Equilibrium) model¹⁴, called the Luxembourg

¹¹ For more details see: Luxembourg 2014 Draft budgetary Plan (March 2014)

¹² For more details see: http://europa.eu/epc/working_groups/ageing_en.htm

¹³ STATEC, *The EU Commission production function approach to estimate the output gap: the case of Luxembourg*, *Economie et Statistiques* n°72, January 2014 For more details see:

<http://www.statistiques.public.lu/catalogue-publications/economie-statistiques/2014/72-2014.pdf>

¹⁴ For more details see: <http://www.odc.public.lu/activites/LSM/index.html>

structural model (LSM), has been developed that will better simulate macro and micro-economic impacts of structural reforms.

Some characteristics of the model make it particularly well adapted to analyzing economic policies implemented by Luxembourg. It integrates the economic specificities of Luxembourg, especially the particular functioning of the labour market that assimilates residents and cross-border workers, the importance of negotiations between unions and companies, and the fact that Luxembourg is a small, extremely open economy.

An initial version of the LSM was widely used in reviewing the consequences of structural policies. However, this initial version was not appropriate for studying the consequences of the extreme level of Luxembourg's specialization in its financial cluster. The development of a new version, known as LSM2, addresses this concern. The LSM2 model including the banking sector was introduced in June 2012. However, it should not be forgotten that there is no ideal structure for an institutional macro-econometric model.

3. Implementation of country specific recommendations

In July 2013 the Council adopted six recommendations on Luxembourg's SGP and NRP for the period 2013-2014. This chapter describes the measures implemented in Luxembourg to meet their criteria.

3.1 Fiscal position

"Preserve a sound fiscal position and remain at the medium-term objective so as to ensure the long-term sustainability of public finances, in particular by taking into account implicit liabilities related to ageing. Strengthen fiscal governance by adopting a medium-term budgetary framework covering the general government and including multi-annual expenditure ceilings, and by putting in place the independent monitoring of fiscal rules."

In 2014, the government adopted a package of budget consolidation measures amounting to 231 million, representing 0.5% of GDP, based exclusively on the expenditure side. The fiscal policy implemented by the government will ensure continued adherence in 2014 of the structural balance to the medium-term budgetary objective of a 0.5% surplus of GDP. The structural balance recedes from 1.7% of GDP in 2013 to 1.3% of GDP in 2014. Regarding expenditures, the spending dynamic will be cut back from 5.1% in 2013 to 3.7% in 2014. To achieve compatibility with the 2014 reference rate of 1.1%, adjusted real growth of expenditures of 0.7% must not be exceeded. Consequently, for 2014, it is probable that Luxembourg will comply with the two rules of the preventive arm of the SGP.

In 2015, the situation of public finances will be impacted by tax changes in the area of electronic communications. Currently, this impact is responsible for a loss of revenue of 800 million, representing 1.5% of GDP. Without any policy change, the structural balance risks a worsening of 0.8% of GDP, which would imply a significant deviation from the rules of the preventive arm of the Stability and Growth Pact, which represents an annual decline of over 0.5% of GDP with respect the medium-term budget objective of 0.5% of GDP. In order to avoid this type of decline the government decided to implement a consolidation strategy beginning in 2015. This strategy is based on two elements for 2015:

- In terms of revenues, a package of VAT measures will result in estimated surplus revenue of 350 million, more or less 0.7% of GDP¹⁵.
- Other measures have yet to be specified as part of the 15th adjustment of the stability and growth programme. Emphasising reduced expenditures, the government has decided on an indicative adjustment trajectory for the period 2015-2018 that involves 200 million, some 0.4% of GDP, in reductions in expenses to be achieved beginning in 2015, compared to a static policy.

This strategy should help the government avoid a worsening of public finances as estimated in an unchanged policy scenario. The structural balance for 2015 is estimated at 0.2% of GDP, which means an insignificant deviation from the medium-term budget objective. Furthermore, if budget policy remains static and in view of the 2015 budget strategy, changes in expenditures would comply with the rule on expenditures in the preventive arm of the Stability and Growth pact. Real

¹⁵ See the Stability and growth programme for more details.

growth adjusted expenditure would amount to 0.11% with a reference rate of -0.1%: while the rate is higher, it remains nonetheless within the limits.

Through the government policy in place, major worsening of the public finances situation with a significant deviation from the rules of the preventive arm of the Stability and Growth Pact will likely be avoided in 2015.

The medium-term budget objective of a 0.5% surplus of GDP is being maintained. Since the latest revision in 2013, this objective corresponds to the minimum level in the view of the European Commission, which decreased this minimum level from a surplus of 0.75% of GDP to one of 0.5% of GDP after accounting for the estimated impact on the budget of the 2013 reform of the pension system. It is true that after the pension reform, public expenditures related to the ageing of the population will increase less strongly as from 2020 and the impact of the reform significantly reduces implicit liabilities related to the ageing of the population. The impact on the budget is therefore expected to be a reduction of the cost of the ageing of the pension system to around 7% of GDP in 2060.

The government has emphasised its intention to introduce several changes aimed at improving governance of public finances. A large portion of measures in this area have already been introduced or are about to be entered into the legislative process, including:

- The transposition of the "*Fiscal compact*" into national law¹⁶, implementing the provisions of the Treaty on Stability, Coordination and Governance (TSCG). The draft law also introduces elements stemming from the *Six-Pack* and *Two-Pack* regulations: In particular, the following will be transposed into national law:
 - The budgetary rule stipulating that the budgetary situation of public administrations of a TSCG contracting party must be balanced or show a surplus
 - The setting of a medium-term objective (MTO) and an adjustment trajectory to accompany it
 - A multi-annual budgetary framework that is credible and effective with a schedule that spans a minimum of three years
 - An automatically triggered correction mechanism for deviations from the MTO or the adjustment trajectory
 - A budgetary procedure that goes into effect if the nation's budget is not approved by Parliament
 - A procedure imposing communication of information on all public administration entities
- The institution of an independent National Public Finances Council responsible for verifying compliance with budgetary rules and the application of the automatic correction mechanism.
- The institutionalisation of the Foresight Committee under the aegis of the Ministry of the Economy and the Ministry of Finance ("*National Economic and Financial Committee*"). This Committee will be charged with preparing and coordinating work in the drafting of the NRP, and the SGP, as well as the DBP and supervising the State's draft budget. The Committee will recommend an overall works schedule to the government to be accomplished as part of the European semester.

¹⁶ Draft law no. 6597.

- A complete screening of public expenditures. The dual objective of the expenditures screening effort is to achieve substantial gains in public expenditures in the areas of the central government, the local government and social security by 2018 and to improve the quality and effectiveness of public policies.

The slowdown in economic activity in the country, combined with changes in longevity, creates the risk that increases in social security expenditures could overtake social contributions. In view of the scope of the State's commitment in this area, it is necessary to consolidate the nation's financial situation in order to sustainably assure its ability to finance social security institutions. The universality, quality and sufficiency of services will be maintained to preserve the Luxembourg social model. The government will however revise the schemes with the purpose of better controlling rising costs and to use available resources in an optimal manner. The process will be characterised by systematic consultations with all partners concerned. In this framework, the government will also recast the tasks of the Inspectorate General for Social Security Administration (IGSS), which was established in 1974. In doing this, it will adapt its work to changes in social policies and the activities stemming from them. Whereas in the past, checks of social security institutions were restricted to accounting audits, IGSS is now progressively developing an internal audit approach. Instead of exclusively producing aggregate statistics, IGSS has set up a centre of research data in order to make micro-data accessible internally and externally to administrations or research institutions. The intent is to carry out studies and research projects on socio-economic realities in Luxembourg in an environment of strict protection of personal data. IGSS uses various macro and micro-simulation forecasting models developed internally or in conjunction with domestic and international research institutions in carrying out studies and analyses of social policy reforms.

3.2 Corporate taxation and VAT rates

"Take measures to address the debt-bias in corporate taxation and extend the application of the standard VAT rate."

Under the governmental programme, preparatory work has been started to implement an overall tax reform in 2016 that will meet the criteria for tax predictability and stability, competitiveness, lasting jobs and social equity. The entire tax reform is to be implemented in 2017.

With regard specifically to corporate taxation, a tax scheme that emphasises risk capital and innovation deserves attention. In its consideration of this subject, the government intends to review tax mechanisms that aim to reduce financing of companies through debt. In considering the above objectives, as European and international requirements, the government will carry out a detailed analysis of the impact a scheme that favours investment through equity could have on innovation and safeguarding of jobs, in addition to stability of public finances.

The government intends to increase VAT rates. Beginning on 1 January 2015, VAT rates will increase overall by 2 percentage points. The standard VAT rate will increase from 15% to 17% and the intermediate rate will increase from 12% to 14% and from 6% to 8% respectively. The super reduced rate will remain unchanged at 3%. Furthermore, the standard rate of 17% extends to all real estate investments, excepting those made for the acquisition of a primary residence, for which the super reduced rate of 3% remains in effect.

3.3 Expenses related to ageing

"Curb age-related expenditure by making long-term care more cost effective, in particular through a stronger focus on prevention, rehabilitation and independent living, strengthening the recently adopted pension reform, taking additional measures to curb early retirement and increasing the effective retirement age, including by linking the statutory retirement age to life expectancy."

3.3.1 Reform of the pension system

The law dated 21 December 2012 on pension reform stipulates a certain number of measures to provide a better financial base for the pension insurance scheme and to render it more flexible. The reform promotes extending careers of professionals to align them with new life expectancy data. The reform improves the scheme's financial situation in the medium and long term by introducing specific adjustment mechanisms. The government programme calls for a mid-term assessment, together with the social partners, particularly with regard to addressing the ageing phenomenon or individualised insurance planning. This implies a review of the investment strategy for the pension system's financial reserves that provides optimal returns, a diversification of risks and a socially responsible investment policy. Another issue is the revision of the law regulating supplementary pensions, a scheme that was introduced by the law dated 8 June 1999. The concept of extending supplementary pensions to self-employed professionals and independent workers is being considered, as well as to some categories of employees not affiliated with a company retirement scheme. The mechanism to be adopted must ensure that basic principles are the same for independent workers, self-employed professionals and the categories of employees concerned.

3.3.2 Reclassification

In view of the ageing of the workforce, steady growth in the number of persons eligible for external reclassification is to be expected over the next decade, the cost of which will be borne by the pension system. As such, it is necessary to quickly move toward a reform of the professional reclassification system. The draft law submitted for legislation in March 2013 is intended to accelerate procedures and provides a new way of accessing internal reclassification. A specific status is attributed to employees who are undergoing an external reclassification procedure that guarantees employees that their rights in a work reclassification decision will be upheld. The draft law introduces a periodic re-evaluation by the occupational physician to ensure better monitoring of work capacities of persons in a professional reclassification situation. The draft law also provides for a professional tide-over indemnity with deductions for social contributions as an extension of unemployment benefits.

3.3.3 Modernisation of the Social Security medical examinations process

The government intends to modernise the provisions regulating Social Security medical examinations in order to account for changes that have occurred on the legislative and practical levels since the establishment of this administration. Through the reform, medical examinations will better target check-up and consulting activities. These measures will provide better follow-up of long-term illness from the insurance viewpoint, and will make adjustments to the Employers' Mutual insurance fund and benefits in-kind mechanisms. By means of the reform, the Medical Inspection can guide persons more effectively toward the system that is best suited to an individual's situation. In this way, reviewing a professional reclassification, disability or certificate of fitness for work procedure more rapidly will avoid paying out long-term indemnities that occasionally extend to the end of benefits at 52 weeks because of excessively long case evaluation times.

3.3.4 Accident prevention

The law dated 12 May 2010 dealing with the reform of the accident insurance scheme is intended to motivate employers further in preventing accidents and improving health and safety on the job. It stipulates that the unique contribution rate applicable to accident insurance can be decreased or increased, to a maximum of 50%, depending on a company's accident history. The government proposes introducing a bonus-penalty system based on risk classes, in which performance in the area of health and safety at work of a company is compared to other companies exposed to the same risks and that work in the same lines of business.

3.3.5 Long-term care

Nursing care insurance, which was introduced in 1999 as a new branch of the social security system, has been highly successful. Nonetheless, a report prepared by IGSS, in collaboration with the Evaluation and Guidance Unit for and the National Health Fund in 2013, clearly indicates that under current conditions, the financial stability of nursing care insurance cannot be secured beyond 2015 and is therefore its long-term viability is in question. This assessment illustrates the need and urgency of a reform, for which the primary objective should be to halt the increase in costs while retaining a high level of quality care. This requires an evaluation of certain services with relation to their intent, effectiveness and volume, as well as in relation to the objectives of nursing care insurance, and recommends any necessary adaptations. It is necessary to identify potential savings while maintaining the same level and quality of care and adhering to the basic principles of nursing care insurance. Some avenues to be explored include assessments of degrees of dependency, improving information relating to care provided, introducing systematic and structured exchanges of information, assessing scopes of intervention in support activities, a critical analysis of services relating to technical aids and modifications to places of residence, complete consistency between benefits and the service being covered, enhanced alignment of participants to include planning of structures and authorisation of activities and the revision of methodology for determining monetary values.

3.4 Wage-setting and economic diversification

"Beyond the current freeze, take further structural measures, in consultation with the social partners and in accordance with national practices, to reform the wage setting system, including wage indexation, to improve its responsiveness to productivity and sectoral developments and labour market conditions and foster competitiveness. Step-up efforts to diversify the structure of the economy, fostering private investment in research, notably by developing cooperation between public research and firms."

3.4.1 Reform of the wage-setting system

In December, 2011 the former government decided to modulate the automatic wage indexation mechanism. The law concerning this modulation was approved at the end of January 2012¹⁷. There will be only one automatic indexation payment per year in 2012, 2013 and 2014. In addition, an interval of 12 months must elapse between each automatic indexation. The automatic indexation that was to be paid in early 2012 was put back to October, 2012 and the indexation to be triggered in February, 2013 was put back until October, 2013. The last year covered by the 2012 law is therefore 2014, and the next adjustments to wages, salaries and pensions will therefore not occur before 1 October 2014. According to the latest STATEC forecasts, the rate of inflation, measured using the "national" consumer price index – IPCN, inflects in 2014, moving from 1.7% in 2013 to 1.5% in 2014. The succeeding period is characterised by a low inflation environment and slightly

¹⁷ Law dated 31 January 2012 adapting certain forms of applying the sliding wage scale and modifying Article 11 of the amended law dated 22 June 1963 setting the scheme for State functionary salaries.

higher growth brought on by improved macroeconomic conditions. With the effect of the increase in VAT beginning on 1 January 2015, IPCN will accelerate in 2015 and the estimated inflation rate is 2.7%. After this peak in 2015, the rate is expected to resume its initial trajectory, stabilising at around 2% on the average up until 2018. In the governmental programme, the government stipulated that the automatic wage indexing system would remain intact. However, in as much as it has been confirmed that Luxembourg is not fully out of the crisis, the government will, following consultation with the social partners, adapt legislation in the area of automatic wage indexing based on the current model. To this end, the government recommended that the social partners attempt to come to overall agreement on the system prior to the summer of 2014, and to do so without changing the wage indexing system through legislative measures. This agreement should take into account the economic situation and changes in prices, and it should guarantee adequate security to companies and employees in terms of planning. In the event that inflation increases excessively or that agreement cannot be reached, the government intends to legislate the issue.

Over recent years, legal and economic analyses in the area of automatic wage indexation have also been carried out. A legal study of the methods for regulating the automatic price indexation clauses¹⁸ was published in 2012 and a study analysing the price adaptations of companies in Luxembourg¹⁹ was published in 2013. and the conclusions of this study are currently supplemented by economic analyses. Also, a macro-economic study on the setting of wages with and without an automatic indexing system will be finalised in the first half of 2014.

3.4.2 Diversification of the structure of the economy

The government is implementing an active development and diversification of the economy, based on a multi-specialisation strategy with a view to reducing dependence on the financial sector, which is still the preponderant pillar of Luxembourg's economy. In addition to maintaining a high performance industrial tool based on R&D and innovation, the government is concentrating its diversification efforts for Luxembourg on several specific sectors in order to benefit from concentration effects and economies of scale²⁰. These include Information and Communications Technology (ICT), logistics, eco-technologies, health technologies and space technology²¹. In general, the performance of non-financial services in the current account balance, which is both largely positive and features significant evolution over recent years, indicates a genuine degree of success of the multi-specialisation strategy. More specifically regarding these sectors:

- In the ICT sector, Luxembourg, through its implementation of customised infrastructure in the domain of connectivity and data centres, has now become a location of choice for numerous companies, especially in the electronic content distribution and data storage sectors in a highly secure environment. Luxembourg, through significant investment in connectivity and in high security data centres, has forged a reputation over recent years of being a "European Trusted Information Center". The government intends making Luxembourg a world data bank for finance and the real economy. The development of the ICT sector will be achieved primarily through an increase of service providers, for example, through the extension of the draft law on

¹⁸ MINISTERE DE L'ECONOMIE ET DU COMMERCE EXTERIEUR, *Modalités de la réglementation des clauses d'indexation de prix en France, Allemagne, Belgique et au Luxembourg*, Perspectives de politique économique n°19, Luxembourg, May 2012. For more details: http://www.odc.public.lu/publications/perspectives/PPE_019.pdf

¹⁹ MINISTERE DE L'ECONOMIE ET DU COMMERCE EXTERIEUR, *Etude des adaptations de prix des entreprises au Luxembourg*, Perspectives de politique économique n°26, Luxembourg, July 2013.

For more details see: http://www.odc.public.lu/publications/perspectives/PPE_026.pdf

²⁰ For more expansive details, also see the R&D Objectives chapters and the key measures to achieve them.

²¹ For an initial attempt at a quantified analysis of the development of the priority sectors of ICT, eco-technologies and health technologies, see: MINISTERE DE L'ECONOMIE ET DU COMMERCE EXTERIEUR, *A la recherche des secteur d'avenir*, Perspectives de politique économique n°27, Luxembourg, October 2013, pp.141-150.

For more details see: http://www.odc.public.lu/publications/perspectives/PPE_027.pdf

electronic archiving, management of copyrights and intellectual property, the development of companies that use electronic services – for example a feasibility study of the implementation of a mini-one stop shop system for aligning administrative requirements – or yet the development of infrastructures and the arraying of a broadband internet network through the updating of the national strategy for implementing ultra broadband networks. The ICT sector is also the common feature between the other multi-sector specialisation. It is strongly tied to the logistics sector, through e-commerce, eco-technologies through smart grids and IT management, health technologies, with the archiving and management of data, space technology and the industrial and financial sectors, through high performance cloud computing.

- With regard to the logistics sector, the government is seeking to position Luxembourg as an intercontinental and multimodal logistics platform in Europe, primarily in the domain of high added value logistics. As part of a multi-products policy, various categories have been identified as vehicles for synergies with other target sectors, especially pharmaceutical products. The work accomplished in the *Eurohub Sud* business area will be implemented in order to provide high performance infrastructures to serve the logistics sector. The Bettembourg multimodal terminal and rolling motorway platform will be developed in order to link with a growing number of destinations throughout Europe. The infrastructure of the tri-modal Port de Mertert platform will be renovated and developed to meet future requirements in the area of logistics. In order to facilitate procedures for importing, exporting and transit of merchandise, the Government will set up a "single window for logistics" system.
- Concerning eco-technologies, the government is seeking to converge policies for energy and the environment with the concept of economic diversification. Eco-technologies include technologies that seek to reduce consumption of energy and resources and to protect the environment. The government is particularly stressing subjects such as eco-construction, sustainable mobility and the circular economy. Sustainable construction skills Centres will bolster research and innovation and federate the players in this sector with a view to supporting the development of the eco-construction sector. A concerted approach featuring representatives of sustainable construction players will be guaranteed through the establishment of a National Council for Sustainable Development. SMEs will receive further support through easier access to innovation and research, by engaging in a brand management process in the sector, by completing flagship projects and promoting the entry of domestic players onto the Greater Region market. Sustainable mobility offers numerous opportunities for economic development and accessing new markets. By capitalising on the strength of the ICT sector and adopting an integrated market, it will be necessary to position Luxembourg as a market test area for domestic and international companies, to augment its visibility and recognition and to create a platform for processing and making available data needed to promote innovation and creating new skills niches.
- In the area of health technologies, the government is capitalising on its major investment in public research that resulted in the development of a critical mass of skill sets centred on the federating theme of personalised medicine. The government will pursue its efforts in the area of public research in a focused manner targeting research priorities such as diabetes, oncology, Parkinson's disease and population groups, and is also looking at potentially interesting areas in terms of public health that now have achieved critical mass, such as cardio-vascular disease. Apart from the public research effort, the government will continue its efforts to establish the necessary ecosystem for developing a skills centre in the biomedical domain. In particular, the government will develop areas suitable to medical biotechnology companies that want to establish themselves and to adapt to the range of financing instruments specifically intended for companies in the health technologies sector. The government will continue to support IBBL as a research infrastructure with an international scope.

- The aerospace sector is an important sector for Luxembourg, a country that started in the space adventure in 1985 through the *Société Européenne des Satellites* (SES), one of the jewels of the satellite telecommunications industry and currently one of the major players of the sector. This successful venture has resulted in the development of an entire industry around a major player of the Luxembourg space landscape. The second decisive stage in the anchoring of the company in the space sector was the membership of Luxembourg to the European Space Agency (ESA), which became effective in 2005. Apart from the benefits of development opportunities linked to the technological skills of domestic operators, this membership confirms the will of the government to promote the country as a land of refuge for advanced technology innovative projects. To achieve this, the government has provided Luxembourg with a space policy whose primary objectives are to contribute to economic diversification, to consolidate and enhance existing skills in the area of telecommunications and the media, as well as ground systems, to expand expertise in the sector and to bring an international dimension to its activities through access to international networks. The government will pursue the development of economic activities and R&D in this sector of the future.

3.5 Youth unemployment and participation rate of older workers

"Step up efforts to reduce youth unemployment by improving the design and monitoring of active labour market policies. Strengthen general and vocational education to better match young people's skills with labour demand, in particular for people with migrant background. Take resolute action to increase the participation rate of older workers, including by improving their employability through lifelong learning."

- A project was launched in July 2012 addressing young people with little education that focused on supervising young job seekers between the ages of 18-24 with few or no qualifications, few or no qualifications and no professional experience, who are consequently quite distant from the labour market. In 2013, this initial concept was developed and perfected to better fulfil the requirements of young people and the project's partner companies. This project implements a specific two month training program in special centres, followed by an introductory period of one month in companies called an EIP. The work experience is comparable to an internship in a company. If the experience proves conclusive, young people can then enrol in a practical training course in a company by means of a Work-Support Contract (CAE) under ministerial authority that lasts one year, which can then lead to an apprenticeship or an indefinite or fixed term employment contract. During the practical training period in the company, young people can participate in special refresher courses leading to qualifications required for beginning an apprenticeship at the end of the project²².

The implementation of the professional training reform, which targets an objective of getting qualifications to correspond to labour market demand, is moving forward. The same is true for the secondary education reform project, which seeks to achieve academic success and qualification of young people to enter a profession or continue to higher studies. The government is placing particular emphasis on language training to avoid dropouts and to ensure that both domestic and foreign born persons achieve qualifications. It is necessary to develop linguistic training from an early age in the kindergarten structures, to review alternatives to German language literacy, to diversify the secondary education and professional range of services on the level of languages and to consider expanding international Baccalaureate

²² In 2013, 148 EIPs were set up, 68 young people were engaged under CAEs, 42 others were oriented toward initial or adult apprenticeships and 13 young people signed permanent or fixed-length contracts or introductory work contracts.

programmes. Language training has been put in place so that newly arrived young people can get into the Luxembourg school system²³.

- As the law to reform the retirement system went into effect in early January, 2013, the dialogue with the social partners will begin on the reform of the various early retirement systems, i.e., the solidarity, adjustment and progressive options. This reform will concentrate more on persons who are working in strenuous jobs and takes into account working conditions of older workers.

The category of job seekers in the external reclassification category²⁴, 48% of whom are over 50 years old, will receive improved follow-up for re-insertion appropriate to their situations. A draft law on the reclassification system was submitted in March 2013 by the Ministry of Labour, Employment and the Social and Solidarity Economy and the Ministry of Social Security. The modifications aim at accelerating procedures, a more thorough preservation of individual rights in external reclassification and the creation of conditions conducive to favouring internal reclassification. The concept is based on supporting companies in their efforts to improve working conditions, by making experts available, by emphasizing internal reclassification, i.e. within a worker's same company, in external reclassification efforts, and above all, improving reinsertion of reclassified persons into a job.

In order to meet the specific requirements of older job seekers, in 2013 the Ministry of Labour, Employment and the Social and Solidarity Economy reformed the "Fit4Job – Restart my career" project to better suit the requirements of the target population and companies. This project is intended for job seekers over 45 and essentially persons who have been jobless for a longer period. Within this project, these persons are activated, guided into appropriate training programmes if required and given support in drafting CVs and cover letters, as well as preparing job interviews.

Specific training measures have been set up to secure the jobs of older workers or to upgrade qualifications of those who lost jobs. Lifelong training plays a key role in maintaining jobs and in rapid reinsertion of older workers. For this reason the public co-financing system of lifelong learning (LLL) was modified in 2012 to benefit professionals over 45 years of age or with few qualifications. The co-financing rate was augmented to 35% for the two categories mentioned above and to 20% for the remainder.

The government also supports inter-generational transmission of expertise through the development of tutoring in companies and promoting volunteer work by seniors.

3.6 Greenhouse Gas Emissions

"Step up measures to meet the target for reducing non-ETS greenhouse gas emissions, in particular by increasing taxation on energy products for transport."

The government has a multitude of tools for reducing greenhouse gas emissions outside of EU ETS in accordance with existing regulations, which includes both national measures and measures stemming from the flexible mechanisms.

In particular, the second CO₂ Emissions Reduction Action Plan includes numerous measures in the areas of transportation, building, renewable energy, industry, information and awareness campaigns

²³ For more expansive details, also see the Employment Objectives chapters and the key measures to achieve them, and the Education Objectives chapter and the key measures to achieve them.

²⁴ Persons in external reclassification programme are persons with reduced work capacity who cannot work at their last job and cannot be reclassified in a job consistent with their capacities within the same company. Consequently, these persons are reclassified into another company where possible.

and energy consulting and training that are intended to assist in attaining Luxembourg's greenhouse gas emission objectives²⁵:

- Transportation: the principle measures include the implementation of actions and projects recommended by the overall MoDu sustainable mobility strategy, which seeks to develop public transportation, more intensive use of "soft mobility" and the drawing up of a quasi real-time telematic information system for public transportation. Other priorities include the installation of a high capacity and high frequency transportation system in the capital, supporting the development of electric mobility, introducing an ecological mobility label for companies, etc.
- Housing: the Housing Sector plan progressively increases energy performance requirements for new and old residential buildings.
- Commercial buildings: progressive remediation of all constructed buildings and an inventory of central government buildings impacted by the energy efficiency directive.
- Energy: Support of renewable electric energy through purchase obligations, heat production by means of renewable energy sources and the promotion of energy efficiency.
- Industry: EU ETS, energy audits in major companies and promotion of eco-technologies.

The Climate Pact empowers the State to provide financial and technical support to municipalities, who are members of the pact. The goals pursued by the Climate Pact consist in strengthening the role of municipalities, reducing GHG emissions and the energy bill on municipal territory and stimulating local and regional investments.

Particularly with regard to the taxation of energy products in transportation, the government is committed to reviewing taxation from a prudent perspective, taking into account the budgetary impact of all changes in taxation. To accomplish this, and especially to comply with the governmental statement of trying to ensure in the medium and long term an uncoupling of the budget from fiscal revenues coming from fuel sales, the government will launch an economic feasibility study whose objective is to evaluate the medium and long term impact of a major structural decrease in the sale of fuel to non-residents. This work in the area of taxation of energy products is part of the more general framework of studies pertaining to an overall tax reform process²⁶.

²⁵ For more details see: The GHG emissions objective and the key measures for achieving it.

²⁶ For more details see: Chapter 3.2.

4. Progress achieved in national objectives for the Europe 2020 strategy

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 had to determine its national objectives reflecting these European objectives. Luxembourg is determining its national objectives for 2015-2020 and a series of measures to implement them, as part of its NPR²⁷.

Table 1: National objectives determined by Luxembourg in April 2014

		European Objective 2020	Luxembourg 2020 Objectives
Priority 1 "Smart growth"	<i>Objective 1</i>	" (...) raising combined public and private investment levels in this sector to 3% of GDP "	Between 2.3% and 2.6% (2.0% for 2015)
	<i>Objective 2</i>	" (...) reduce school drop-out rates to less than 10%"	Sustainable under 10% ^a
		" (...) increasing the share of 30-34 years old having completed a university degree or equivalent level of studies to at least 40% "	66% ^b
Priority 2 "Sustainable growth"	<i>Objective 3</i>	" (...) reduce greenhouse gas emissions by 20% (...)"	Reduction of GHG outside of EU ETS -Less than 20% compared to 2005, i.e. emissions of around 8,085 Mt CO₂ in 2020 ^c
		" (...) increase the share of renewable in final energy consumption to 20%"	11% ^c Average 2015/2016 5.45%)
		"(...) move towards a 20 % increase in our energy efficiency"	<u>Objective 2016:</u> 14.06% <u>Objective 2020:</u> Final energy consumption of 49,292 GWh i.e. 52,111 GWh of primary energy ^d
Priority 3 "Inclusive growth"	<i>Objective 4</i>	"(...) raise to 75 % the employment rate for women and men aged 20-64"	73% (71.5% for 2015)
	<i>Objective 5</i>	« (...) lift at least 20 million people out of the risk of poverty and exclusion"	Reduce the number of persons under the threat of poverty or social exclusion by 6,000 people by 2020.

Notes:

^a National data will also be used as measurement tools because the indicator calculated by Eurostat that came out of the Labor Forces Survey is not totally representative of Luxembourg. Attention must be paid to producing statistics that better distinguish those persons having attended Luxembourg schools in order to be able to assess the quality of the national education system for the national resident population and to provide information about the capacity of the Luxembourg school system to train young people.

^b 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. In Luxembourg there is a strong disparity according to birth country, while in neighbouring countries this is much less marked. Furthermore, the proportion of university degrees is higher among natives than among foreign born persons.

²⁷ For more details see: <http://www.odc.public.lu/publications/pnr/index.html>

^c With regard to greenhouse gases and renewable energies, strict national objectives were already in place prior to the launching of the Europe 2020 strategy. For the post-Kyoto 2013-2020 period, only the sectors outside of EU ETS are targeted by objectives set amongst Member States. This emissions reduction objective excluding ETS is stated for 2020 as compared to the 2005 level.

^d The 2020 objectives are stated in EU directive 2012/27. In application of Article 3, the Ministry of the Economy notified the Commission in July 2013 of the national energy efficiency objective in the form of an absolute level of primary energy consumption and final energy consumption in 2020.

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 **national objective** in terms of employment rate for 2020 is 73% and the objective for 2015 is to achieve an employment rate of around 71.5%.

Table 2: Statistics of the labour and employment market in Luxembourg

	2000	2005	2011	2012	2013*
Total salaried employment	244,396	287,762	347,302	355,949	362,188
Percentage of cross border workers	35.6 %	41.0 %	44.3 %	44.2 %	44.1 %
Total employment rate [20-64]	67.4 %	69.0 %	70.1 %	71.4 %	71.1 %
Employment rate: Men	80.8 %	79.4 %	78.1 %	78.5 %	78.1 %
Employment rate: Women	53.8 %	58.4 %	61.9 %	64.1 %	63.9 %
Employment rate: Youths [20-24]	52.9 %	44.0 %	35.1 %	36.7 %	35.5 %
Employment rate: Youths [25-29]	80.3 %	81.3 %	79.8 %	78.7 %	76.0 %
Employment rate: Seniors [55-59]	38.9 %	46.8 %	54.6 %	56.0 %	54.6 %
Employment rate: Seniors [60-64]	14.5 %	12.7 %	20.9 %	22.5 %	22.9 %
National unemployment rate	2.5 %	4.2 %	5.9 %	6.1 %	7.1%

Note: * temporary figures for 2013 for the first three quarters for Total salaried employment

Sources: STATEC; Eurostat; Pubic employment agency (ADEM)

In this context, it is appropriate to emphasize the specific nature of Luxembourg's labour market. In the first place, the labour pool is not limited to national borders, but includes a large part of the Greater Region²⁸. 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, the percentage of cross-border workers with salaried jobs in Luxembourg is 44.1%. Of these, cross-border French residents alone account for 49.9%, which represents 22% of the total labor force. Belgian residents account for 25.3% while German residents represent 24.8% of total cross-border workers. The change in the number of cross-border workers with a job in Luxembourg is even more explicit. They have increased by 83.4% between 2000 and 2013, while during the same period overall salaried employment increased by 48.2%. This explains why the increase in employment in Luxembourg has not been accompanied by lower unemployment, in fact, the opposite has occurred. While domestic employment grew by 10.2% between 2008 and 2013,

²⁸ The Greater Region is made up of the Grand Duchy of Luxembourg, the Wallonia region of Belgium, the Sarre and Rhine-Palatinate region of Germany and the Lorraine region of France.

unemployment surged by 85.8% over the same period. Secondly, immigration is very strong in Luxembourg and therefore has a major impact on demographical changes. Between 2001 and 2013, the foreign resident population grew by 47.1%, while the native Luxembourg population grew by only 7.6%. Thus between January 2013 and January 2014 alone, the working population grew by 3.0%. The trends described above indicate the vitality and relatively complex functioning of the Luxembourg labour market.

4.1.2 Key measures for achieving the national target

National employment policy is designed to promote sustainable and high quality jobs, and to fight precariousness and poverty, thus seeking to obtain better quality of life and a sustainable social model. It features organic measures as well as measures promoting the employment of young people, women, older workers and persons with specific needs.

a. Organic measures

The government has undertaken a series of measures that seek to modernise and adapt institutional structures and to improve comprehension of the complex functioning of the labour market in order to increase effectiveness of active employment policies:

- A modern and high performance public employment service is necessary to meet the requirements and necessities facing the employment market in Luxembourg today. The Labour Administration was transformed into the Employment Development Agency (ADEM), with the law establishing the entity going into effect in 2012. Under this reform, new regional agencies were established and additional employment counselors were recruited, especially for the Youth Employment Services, in order to improve the quality of services offered both to job seekers and employers. ADEM management is pursuing the transformation of the service through numerous projects, such as:
 - A personalised process: A personalised process is progressively being implemented to meet the requirements of the tasks set out in the January 2012 law. This process seeks to optimally mobilise expertise within ADEM so as to exploit it in professional insertion actions for job seekers by qualitatively improving support provided to the jobless. The process is useful in managing the constantly increasing number of cases and in personalising/individualising follow-up of job-seekers in order to get them sustainably employed as rapidly as possible. This new concept has been under test in a pilot project since September 2013 in branch office. Job-seekers registering with the agency undergo a profiling process intended to determine how far they are from getting into the job market. Job-seekers are then monitored by ADEM through regular supervision or, if weaknesses in skill levels are detected, through an intensive programme managed by specialised educators, psychologists and social assistants. In mid-February 2014, nearly 450 job-seekers received this now personalised supervision process. It will be rolled out progressively as part of the future youth guarantee and has been in effect in two of the largest ADEM agencies since March 2014. The roll-out will continue progressively on the national level.
 - Strengthening and bringing the Youth Employment Service to the regions: In order to best support young people to achieve their profession insertion, the Youth Employment Service has been bolstered through the recruitment of new counselors with the objective of implementing a guarantee for young people. The counselors of this department are currently working from two agencies. In the future, this department will be extended to the regions to bring a close-up service to young job-seekers by making personal interaction easier and improving support quality.

- Establishment of an employers' department: The best support for job-seekers can only result in hiring if there is a good level of cooperation with companies. Thus ADEM decided to set up a Companies' department intended to develop links with employers on all levels to include information, with customised training for targeted jobs, through the follow-up of the job-seekers' professional insertion. By this, ADEM is seeking to become a quality partner in recruitment carried out by human resources departments
- As part of its employment policy, the government has created an Employment Observatory. The objectives of this observatory include analysing the job market to better assimilate its functioning, developing forecasts, longitudinal studies and studies on the impact of immigration, and establishing valid indicators. Indicators play a very important role in monitoring measures promoting employment as well as in developing more targeted and efficient measures. The Ministry of Labour, Employment and the Social and Solidarity Economy, assisted through co-financing by the European Social Fund (ESF) for 2011-2013, will consolidate the observatory by means of a draft law to provide a legal basis for its future development. A key phase is completing a database loaded with anonymous information on employment and unemployment, to carry out accurate and targeted studies and to provide more in-depth understanding of the complex functioning of Luxembourg's labour market and more generally that of the Greater Region. In the same manner, analyses of the impact of employment measures will be more detailed.
- The Ministry of Labour, Employment and the Social and Solidarity Economy, in close cooperation with two institutions involved in professional insertion of job seekers who are far away from the labour market and which are co-financed by the ministry, created a Centre for Socio-Professional Guidance (COSP) in 2013. This new centre brings together two former specialised training centres for unqualified job-seekers, and set up a third centre as well. In this way, the three sites cover the northern, central and southern sectors of Luxembourg. COSP plays a key role in the project for youth with low qualification levels. The centre offers the training, supervision and specific monitoring that the target population needs. In addition to addressing youth employment issues, COSP works closely with ADEM to support all job-seekers on the market bereft of qualifications, according to their requirements.
- Close collaboration between the Ministry of Labour, Employment and the Social and Solidarity Economy and the Ministry of Family Affairs, Integration and the Greater Region will coordinate employment and reduction of poverty policies. The risk of poverty drops dramatically when persons have jobs, particularly when an indefinite term contract is involved. This cooperation will be reinforced for the future programming of the European Social Fund (ESF), 20% of the budget of which will be consecrated to measures and projects for social inclusion. Likewise, the new Fund for European Aid to the Most Deprived managed by the Ministry of Family Affairs, Integration and the Greater Region will be set up and monitored in collaboration with the ESF management authority.
- The current and future challenges of the labour market require solutions to be arrived at through social dialogue. This refers especially to dialogue within different decision-making bodies such as the Tripartite Coordination Committee, the Economic and Social Council (CES) and the Permanent Committee for Labour and Employment, as well as for social dialogue at sector and corporate levels. A draft law to reform social dialogue within companies will be finalised with the involvement of the social partners in this framework. The law seeks to modernize, simplify and adapt legal measures concerning social dialogue within companies, with the purpose of improving the quality of dialogue.

b. Youth measures

The government has adopted a series of measures whose objective is improving youth employability through training and guidance:

- Academic and professional guidance for young people plays a crucial role in increasing compatibility between the requirements of the labor market and knowledge and capabilities of the young. In order to facilitate cooperation and to create synergies amongst public services charged with counselling and giving guidance to young people, the government set up the Guidance Center in September 2012. The ministries concerned will now prepare a draft law to provide a solid basis for professional guidance with a view to optimising the centre's functioning.
- A high quality support system for youths embarking on their professional careers or NEETs who have lefts school or are idle, must be made available as soon as possible. The government will introduce a "Youth guarantee" in June 2014. This guarantee is based on the model offered at the European level²⁹. A working group to put this programme in place was set up in June 2013. The working group brings together all the institutes concerned, i.e. ADEM, the National Youth Service (SNJ), Local Youth Action (ALJ) as well as the Ministry of Labour, Employment and the Social and Solidarity Economy and Ministry of Education, Children and Youth. The working group developed three avenues for guiding young people depending on their requirements: a professional path for insertion into a job through ADEM, an academic path with a view to returning to school through ALJ and a launching mechanism to activate young NEETs through SNJ. These three pathways in principle cover the entire youth population, offering solutions to address educational, professional and inactivity or NEET issues. There are four phases in the concept: 1) Information for young people, 2) Guidance of young people toward suitable paths (employment, school or activation) 3) Determination of a high quality offer suited to the requirements of a young person within that person's path, 4) Implementation of a set offer, possibly through available tools such as specific training, employment measures, etc.

With regard to the professional path, managed by ADEM, a pilot project was launched in March 2014 through a specific unit. Youth counselors monitor young job-seekers through personalised supervision. Young people who benefit from this intense supervision sign a cooperation agreement with ADEM that constitutes an action plan where the person commits to follow in order to improve chances of insertion into the labour market. Overall coordination of the guarantee programme is handled by the Ministry of Labour, Employment and the Social and Solidarity Economy jointly with the Ministry of Education, Children and Youth, ADEM, SNJ and ALJ.

- The building and construction sector requires qualified labour, especially in installing new insulating materials and technical installations for reducing energy consumption in buildings. For this reason, a project will be developed to provide specific "green jobs" training in the building sector, which will be set up the building industry training centre. This training will especially target young job-seekers and in principle will begin in January 2015.

c. Measures targeting women

The proportion of persons with a job is higher among men than among women, but this gap is diminishing. The government has implemented a series of measures aimed at increasing women's participation in employment.

²⁹ This model aims to "(...) ensure that all young people under the age of 25 years receive a good-quality offer of employment, continued education, an apprenticeship or a traineeship within a period of four months of becoming unemployed or leaving formal education."

- In attempting to facilitate the insertion of women into jobs, it is essential to emphasize measures that reconcile professional and family life, for example providing child care services, day nurseries or full-time schooling. Coordination at the inter-ministerial³⁰ level is essential. In this framework, future discussions should occur amongst the social partners to provide more diversified models that better accommodate the specific requirements of working men and women who wish to care for their children. To accomplish this, a draft law was submitted by the government to ensure a minimal transposition of EU directive 2010/18/EU within the deadline.
- The government drew up a national action plan for equality between men and women that addresses the twelve themes of the UN's Beijing action platform and covers international commitments, especially EU and Council of Europe implementation of European policies in the area of equality between men and women. To this may be added the CEDAW March 2014 report and the Human Rights convention with universal periodic review mechanism in 2012, which require detailed follow-up in the area of equality between men and women.
- The "positive actions" prepared by the Ministry of Equal Opportunities are a tool for companies to promote equality between the sexes in the job market by incorporating the talents of the under-represented sex in a more significant manner.
- Another measure for achieving the national objective in terms of the employment rate is encouraging women to set up their own companies.
- The government will adopt a firm policy in favour of balanced representation between men and women on the decision making level. In order to set an example, the government will intervene where it can directly reduce the imbalance that still remains despite concentrated efforts that have been made in recent years. The law on financing political parties will be modified by the introduction of a requirement for political parties to guarantee that a quota of 40% of the under-represented gender be included on electoral lists receiving funding by the parties. Financial sanctions will be put in place for failure to comply with regulatory minimums. The government will guarantee to promote a balanced representation of women and men sitting on Boards of Directors of public establishments. The government intends to achieve a 40% figure in terms of representation of the under-represented gender on Boards of Directors and 40% in appointments to Boards of Directors of private companies that it has a shareholders' stake in.

d. Measures benefitting older workers

The government has taken a series of measures that seek to increase the rate of older persons on the job while ensuring the well-being, safety and health of these older persons:

- The Ministry of Labour, Employment and the Social and Solidarity Economy has finalised a draft law introducing a package of measures in the area of age policies that will be submitted in April 2014. The text includes an obligation for employers with over 150 staff to draw up an age management plan that focuses on at least three of the following issues: recruiting older workers, anticipating career changes, improving working conditions, providing access to life-long learning and passing on knowledge and skills to lesser experienced workers. Financial initiatives are being included for the companies in this group, as well as for those companies not required to draw up plans but who voluntarily apply an age management plan. Companies with more than 150 employees that are already covered by such a plan through a collective bargaining agreement or an inter-professional accord are not constrained by this obligation if they already fulfil a certain number of conditions.

³⁰ Between the Ministry of Family Affairs, Integration and the Greater Region, the Ministry of Equal Opportunities and the Ministry of Labour, Employment and the Social and Solidarity Economy.

- In order to more actively support reinsertion of older job-seekers, the Ministry of Labour, Employment and the Social and Solidarity Economy will introduce internships for job-seekers aged at least 50 and registered with ADEM for at least one month. The maximum duration of this type of internship will be six weeks so as to support recruitment by companies and avoiding any possible abuse situations. This measure is part of a draft project introducing a bundle of measures promoting an age policy in companies.
- In order to support and improve lifelong learning (LLL), the government adopted a white paper in November 2012 on the national strategy for lifelong learning that calls for eight measures: Implement the Luxembourg qualifications framework, adapt the LLL mechanism to the principal's life cycle, adjust the LLL mechanism to the diversity present in Luxembourg society, concentrate all LLL information onto a single platform, develop quality in the area of adult training, professionalise the LLL guidance mechanism, make individuals responsible for their own guidance and set up a consultation commission for LLL. These measures will be put in place progressively in collaboration with the partners involved over upcoming years.

e. Measures supporting persons with specific needs.

The government has taken a series of measures with the objective of improving the accommodation of persons with specific needs and promoting their reinsertion into 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. In 2013, the “Protected Workshops”, in concert with the Ministry of Labour, Employment and the Social and Solidarity Economy, prepared a report on the accomplishments of the amended law dated 12 September, 2003 on the integration of handicapped persons. Awareness campaigns will follow targeting the public and private sectors. These measures also include the support of job coaching projects, initiatives aimed at integrating handicapped people into the labor market and providing follow-up.

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

The National Institute of Public Administration (INAP) has incorporated training into its continuing education programme in addition to training the aims at developing skills acquisition throughout one's career from an LLL perspective. This training more specifically addresses older government workers and deals with aspects such as preventive and overall health management, well-being on the job and strategies for maintaining proper balance between professional and private lives.

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 (...)" ;*

4.2.1 National Target

The government has set a **national objective** for R&D intensity an **interval of between 2.3% and 2.6% of GDP**, of which 0.7% to 0.9% applies to the public sector.

Table 3: Changes in budget allocations benefiting RDI from 2000 to 2014

	2000	2006	2008	2010	2011	2012	2013	2014
Mn €	28.0	113.8	183.1	247.7	256.5	282.5	292.3	310.0
% GDP	0.13	0.34	0.49	0.62	0.60	0.66	0.64	0.65

Source: Ministry of Higher Education and Research

The government's R&D budgets have continued to increase, both in the public and private sectors, with allocations evolving from 28 million in 2000, representing 0.13% of GDP, to 292.3 million in 2013, 0.64% of GDP. The change in these budget allocations illustrates the government's determination to expand RDI and to make it a sustainable policy for developing and diversifying the country.

Table 4: Changes in gross domestic expenditures and in intensity of research by sector

Year	Public research (Mn €)	Intensity (€ / GDP)	Private research (Mn €)	Intensity (€ / GDP)	Total (Mn €)	Total (€/GDP)
2000	27,5	0,13	337,0	1,53	364,5	1,66
2005	64,0	0,21	408,0	1,35	472,0	1,56
2006	78,5	0,23	485,0	1,43	563,5	1,66
2007	96,6	0,26	495,0	1,32	591,6	1,58
2008	136,8	0,37	482,0	1,29	618,8	1,66
2009	149,6	0,42	470,7	1,32	620,3	1,74
2010	191,1	0,49	400,0	1,02	591,1	1,51
2011	n.a.*	n.a.*	416,2	1,00	n.a.*	n.a.*
2012	n.a.*	n.a.*	429,1	1,00	n.a.*	n.a.*

Note: n.a.* figures validated for the public sector are not yet available

Source: Ministry of Higher Education and Research

In 2010, private sector research represented two thirds of all research expenditures nationally. It should be noted that the proportion of public sector research transitioned from 7.5% of all research expenditures in 2000 to 32.3% in 2010.

Table 5: Financial contributions by the government and Third Party financing of the University of Luxembourg authorised for the period 2014-2017

2014 – 2017 Convention	2014	2015	2016	2017	Total
CFE Université	128.7	145.4	145.4	145.5	565.0
Third party financing	32.0	34.0	36.0	38.0	140.0
Total	160.7	179.4	181.4	183.5	705.0

Source: Ministry of Higher Education and Research

Regarding financial contributions of the State (CFE) and third party financing of public research centres (CRP) authorised for the period 2014-2017, it was decided to establish four year authorisations accompanied with revision clauses at mid-term, prior to the end of 2015. The revision provides the opportunity to apply changes the government considers appropriate by virtue of the implementation of the government programme. To this end, the State's financial commitment for the years 2016 and 2017, subsequent to the above-cited revision, is currently set at the level of 2015, contingent upon review subsequent to conclusions of the revision.

Table 6: Financial contributions by the government and Third Party financing of public research centres authorised for the period 2014-2017

2014 – 2017 conventions	2014	2015	2016	2017	Total
CFE CRP-Tudor	22.0				22.0
CFE CRP-Lippmann	15.0				15.0
CFE LIST		39.0	39.0	39.0	117.0
Total CFE Tudor-Lippmann-LIST	37.0	39.0	39.0	39.0	154.0

CFE CRP-Santé	23.0	23.5	23.5	23.5	93.5
CFE CEPS	10.4	10.5	10.5	10.5	41.9
Total CFE for the State	70.4	73.0	73.0	73.0	289.4
Annual increase	3.5 %	3.7 %	0%	0%	
Total third party financing	40.1	42.4	43.4	44.1	170.0
Total budget	110.5	115.4	116.4	117.1	459.4

Source: Ministry of Higher Education and Research

Table 7: Financial contributions by the government and Third Party financing of public research centres achieved for the period 2011-2013

2011 – 2013 conventions	2011	2012	2013	Total	Ratio
Allocation to CRP-Tudor	21.4	21.2	21.3	63.9	60.2%
Third party financing of CRP-Tudor	14.0	13.9	14.3	42.2	39.8%
Budget of CRP-Tudor	35.4	35.1	35.6	106.1	
Allocation to CRP-Lippmann	15.0	15.3	15.6	45.9	62.4%
Third party financing of CRP-Lippmann	10.7	9.0	7.9	27.6	37.6%
Budget of CRP-Lippmann	25.7	24.3	23.5	73.5	
Allocation to CRP- Santé	20.1	20.5	21.0	61.6	67.5%
Third party financing of CRP-Santé	9.4	10.3	9.9	29.6	32.5%
Budget of CRP-Santé	29.5	30.8	30.9	91.2	
CEPS allocation	9.8	10.0	10.1	29.9	63.2%
Third party financing of CEPS	4.9	6.1	6.4	17.4	36.8%
CEPS budget	14.7	16.1	16.5	47.3	
Total allocations by the State	66.3	67.0	68.0	201.3	63.3%
Total third party financing achieved	39.0	39.3	38.5	116.8	36.7%
Total budget	105.3	106.3	106.5	318.1	

Source: Ministry of Higher Education and Research

New results indicators were implemented that public research centres and the CEPS committed to for the 2014-2017 period, following achievement of the indicators for the 2011-2013 period.

Table 8: Performance indicators for public research centres set for the 2014-2017 period.

2014 – 2017 conventions	Results indicators
Number of scientific publications (having an impact factor over 2)	1,040
Number of doctoral theses completed	167
Number of patents applied for	45
Number of spin-offs created	10

Source: Ministry of Higher Education and Research

Table 9: Performance indicators committed to and achieved by public research centres and CEPS for the 2011-2013 period.

2011-2013 period	Results targeted	Results achieved
Number of scientific publications (having an impact factor over 2)	558	775
Number of doctorate candidates	132	137
Number of doctoral theses completed	91	90
Number of patents applied for	23	34
Number of spin-offs created	6	4

Source: Ministry of Higher Education and Research

4.2.2 Key measures for achieving the national target

a. Measures for achieving the target in public research

The government is seeking better integration of its research policy for the European Research Area through the following actions:

- Efficiency of national research systems

Two draft laws are currently in the legislative process aimed at further consolidating and harmonising the Luxembourg research system. In April 2012, a draft law³¹ was submitted whose principle modifications occur on four different levels: Updating of NRF tasks, re-determination of the framework of organisations eligible to receive NRF intervention, improvement of governance and introduction of collective subsidies for training-research. Subsequent to the first complementary opinion of the State Council, certain governmental amendments were introduced in October 2013. The draft law³² for the organisation of research centres was submitted in January 2013. There were four modifications recommended to the 1987 law: CRP status, CRP missions, administrative and governance bodies of CRP and CRP personnel. In addition to the principal elements stated above, the current draft law comprises two complementary elements, the grouping of CRP-Gabriel Lippmann and CRP-Henri Tudor and the incorporation of the Integrated BioBank of the Integrated BioBank into the CRP-Santé³³.

Concentrating the nation's R&D effort on a limited number of priority domains was continued through the NRF's CORE programme. In 2013, it supported 34 projects, representing a sum of 20.8 million. Between 2011-2013, the CORE programme supported 101 projects, representing a sum of 59.1 million.

The government ordered a new study in 2013 on the national research and innovation system with the objective of analysing the level and degree of quality of the implementation of recommendations issued during the 2006 evaluation. This was to draw up an independent and comparative report on the strengths and weaknesses of the national research and innovation system at the current time and to formulate specific recommendations to improve and optimise the national research and innovation policy and the tools to be used in the area, based on good practices identified in other OECD nations. It was also to identify good practices in the Luxembourg context that could serve as a reference to other OECD countries.

³¹ The draft law amending the amended law dated 31 May, 1999 creating a National Research Fund for the public sector; amending the amended law dated 12 August 2003 creating the University of Luxembourg.

³² The draft law for setting up public research centres and establishing LIST, Health and CEPS public research centres.

³³ The State Council rendered an opinion in July 2013. Government amendments were introduced on October 2013 and the State Council issued a complementary opinion in December 2013.

- Trans-national cooperation

The government seeks better integration of Luxembourg players in scientific and technological cooperation programmes and initiatives at the European and wider international levels. Particular attention is paid to heightened participation in the activities of the Community Horizon 2020 research and innovation programme. The National innovation and research agency Luxinnovation and the government jointly launched the national conference for the Horizon 2020 programme in January 2014.

In this context, heavy participation in the activities of the 7th Framework Programme (FP7) was recorded with 224 projects approved for an overall amount of 54.7 million. The largest specific programme in financial terms was the Cooperation programme, at 39.3 million, followed by the Personnel programme, with 10.4 million. The largest theme area in financial terms was the ICT domain, at 13.9 million, followed by the Health domain, with 7.9 million. The private sector accounts for over half of the sum, with an allocation of 28.7 million.

Trans-national cooperation has been a priority for Luxembourg for a long time and is an aspect that FRN actively supports through bilateral and multilateral agreements. The INTER programme finances participation of Luxembourg researchers in international projects. Luxembourg has signed multiple bilateral agreement with the Swiss National Fund (SNF), the German Research Community (DFG), the National Centre for Research and Development in Poland (NCBR), the Flemish Scientific Research Fund (FWO) in Belgium, the FWF in Austria and the National Research Agency (ANR) in France, which follow the lead agency principle and conform to the rules and evaluation procedures of the agency to whom the proposal is submitted. When it is not in the lead agent role, Luxembourg accepts the pronouncement of the lead agent as a basis for determining financing and finance research activities carried out in Luxembourg itself. Between 2011-2013, bilateral programmes supported 33 projects, representing a sum of 11 million. NRF also participates in six ERA-Nets Plus, a joint programming initiative focusing on neuro-degenerative disease and the Assisted Ambient Living (AAL) initiative, based on Article 185. All of these multilateral programmes are co-financed by the 7th Framework Programme. Between 2011-2013, multilateral programmes supported 15 projects, representing a sum of € 5.4 million.

Luxembourg participates in two infrastructures, DARIAH and SHARE, selected by the European Strategy Forum on Research Infrastructures (ESFRI). The government is currently analysing opportunities for strategic participation in other infrastructures on the ESFRI roadmap in conjunction with research institutions and users of research, especially in the bio-medical domain.

- Opening of the labour market for researchers

The government is continuing its efforts to develop an environment propitious to the expansion of scientific and technological employment. It seeks to promote career perspectives and mobility. By virtue of the new law on public research centres, the European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers are included in the internal regulations. The AFR financing programme complies with the principles stated in the Charter and the Code and adheres to the "Towards a European framework for Research careers" directives.

The NRF's AFR programme finances doctorate and post-doctorate work and is currently supporting 415 persons through this instrument, broken down into 328 doctorate candidates and 87 person engaged in post doctorate work. For 2013, 99 out of 283 proposals, representing 35%, submitted as doctorate themes and 49 out of 104 or 47% of post doctorate proposals were selected for financing under AFR programmes, most of which were also co-financed by the FP7 People Marie Curie programme. A total of 33 research projects were carried out in 2013 under a public-private partnership (AFR-PPP). For 2013, around 29 million, of which around 1 million was covered by the

COFUND contribution, was dedicated exclusively for salary costs of persons who were predominantly bound by work contracts with their host establishment. Furthermore, the NRF evaluated 25 mobility proposals, of which 11 were selected for a total budget of 1.2 million. In June 2013, the NRF set up the 3rd AFR Networking Day - From Skills to Careers under the theme of research careers. The event attracted some one hundred AFR aid recipients.

The ATTRACT and PEARL programs of the NRF seek to attract top researchers. The ATTRACT programme targets exceptional young researchers from abroad, while the PEARL program offers the means to public research organisations of recruiting experienced researchers in areas of strategic importance to Luxembourg. In 2013, the NRF selected one ATTRACT candidate of the CRP Gabriel Lippmann and decided to allocate support in the amount of 1.5 million. In 2013, the NRF selected two projects under the PEARL programme and awarded 5 million to each of the two projects.

The Luxembourg innovation and research portal has links to openings and work internships for researchers. In accordance with national standards, selection panels of the University of Luxembourg and the public research centres include international experts.

In upcoming years, the government is considering professionalising the doctorate by setting up a series of doctoral schools in order to improve the professional skills of doctorate candidates. The AFR financing programme responds to the "Principles of Innovative Doctoral Training". Luxembourg offers full social benefits to researchers – including doctorate and post-doctorate candidates - at all levels.

- Gender equality and integration of the men-women dimension to research

The NRF and CRP draft laws state that the proportion of members of Administration Boards and Scientific Councils not to fall under 40% for each gender. Eleven public research establishments have signed the Code of Conduct for recruiting researchers that upholds gender equality in research.

- Optimisation of circulation and transfer of scientific knowledge

The government requested the University of Luxembourg and other public research organisations to publish their scientific articles as much as possible by Open Access in order to make them available on line, freely and without cost, while protecting all intellectual property rights. The government supports the drawing up of common guidelines in this area. *Open Access* is especially useful for enhancing scientific production in Luxembourg by generally increasing the visibility, dissemination and number of quotations of articles published by researchers. The University supports the free access model to scientific publications by means of green media. The University of Luxembourg, in cooperation with the University of Liège, is setting up an institutional repository. The NRF is also preparing a policy based on the free access model. Under the European Commission's *Openair* project, the university library will be transformed into a National Free Access Office (NOAD) for Luxembourg. The university library has electronic resources that give online access to e-books and reviews of the university community as well as links to digital services of the National Library (BnL). This is the central documentary platform of the Grand Duchy that is actively pursuing its national coordination, impetus and technological innovation policy in the area of documentary services production and dissemination.

The BnL offers an innovation policy for scientific and research libraries. In 2013, bibnet.lu, the national library network took on 17 new members, numbering a total of 57 members. Six additional libraries are in the process of joining the network. By the end of 2014, a large majority of scientific and research libraries in the country will be included. Extending the network increases visibility and accessibility of documentary resources available to researchers and students. Through the use of common systems and procedures a collective file of readers is available, lending procedures are

facilitated, statistical reports can be produced and resources are grouped together. The result is more and better services for users and productivity gains for the library. In addition, the Luxembourg Consortium, made up of BnL, the University of Luxembourg and the three CRPs, offers 50,000 periodicals, 80,000 books and over 350 specialised databases, plus reference books in English, French and German through the *findit.lu* shared portal. Beginning in 2013, this content also became available through the *www.a-z.lu* unified research portal. Statistics for 2013 again indicate significant increases in the use of the digital library of 50%, a figure that does not include purchased content. For if the growing portion of open access content were included, consultation of works would be even higher. Purchased content aside, another key figure indicates the ever-increasing need for digital publications. This is the number of single users who have consulted the digital library, which grew by 24% compared to 2012, the largest increase since the project's opening in 2002. Activities to modernise the *bibnet.lu* network and the Consortium are scheduled for 2014-2015. Activities currently underway for the *bibnet.lu* service will be continued, with emphasis on consolidating the network subsequent to increased membership, continuing improvements to quality and the innovative character of document management and user services. The incorporation of the digital and semantic web potential is a constant concern for maintaining and developing the documentary tools that contribute to the competitiveness of researchers and students. These activities are complementary to the activities related to the Luxembourg Consortium, which acquires and manages electronic publications, digitisation and digital preservation.

The government will improve the economic appreciation of research resulting from University of Luxembourg and public research centre activities. From this perspective, the government actively supports the establishment of start-ups and spin-offs within host structures for young innovative companies by providing adequate supervision in the Technoport SA incubator³⁴.

As a founding member, Luxinnovation organises the inter-regional 1, 2, 3 Go event, which brings together participants with innovative ideas for starting companies and provides personalised support in developing their business plans. In 2013, sixty projects were submitted, with 28% of these approved.

To support the enhancement of research results of projects financed by NRF, each CORE project receiving financing will be evaluated jointly by NRF and Luxinnovation in order to explore potential development of the project. To promote the transformation of an innovatively excellent research project along economically viable pathways, the Proof of Concept (PoC) pilot programme obtains financial support at the university and the public research centres to support projects in their efforts to render ideas more attractive to potential investors. In 2013, NRF selected one financing proposal and decided to financially support the development of a structured technological transfer department in the SnT interdisciplinary centre of the University of Luxembourg through a pilot programme.

Luxinnovation also set the sixth edition of *Business Meets Research* forum, in close collaboration with the public research centres and NRF in May 2013. With several hundred participants, the Forum has become a "must attend" event for companies and public research organisations in Luxembourg and the Greater Region. Wallonia became associated with the event as a regional partner. Eight workshops were organised focusing on themes such as intelligent materials, sustainable, green and recyclable materials, e-health, virtual laboratories and Big Data. Matchmaking activities were based on over 140 profiles of entities seeking and offering skill sets and on nearly 250 pre-programmed meetings.

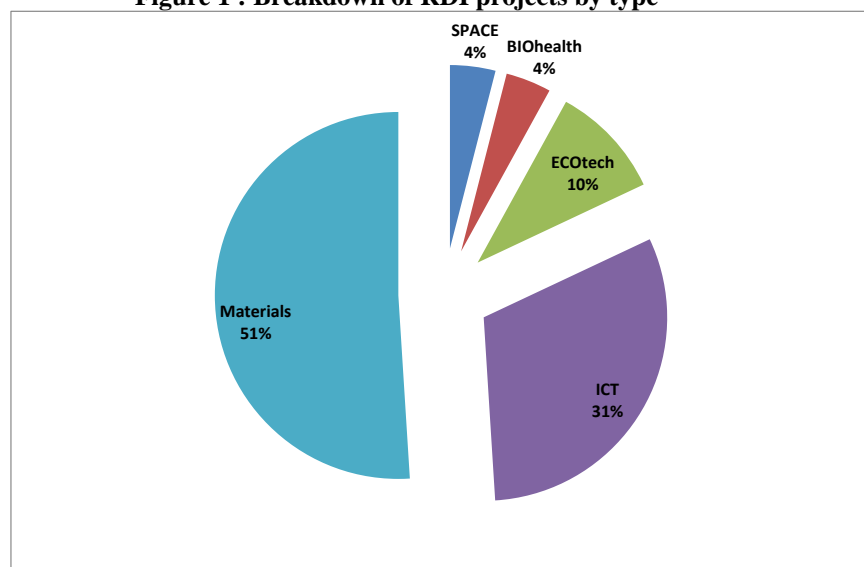
³⁴ For more details see: Section " b. Measures for achieving the nation's target in private research"

b. Measures for achieving the target in private research

- Financial support

Despite the crisis, encouragement of RDI efforts throughout the innovation chain led to a constant rise in new RDI aid applications since 2008. A new record was set in 2013, with 148 new applications. Note that the performance contract with Luxinnovation³⁵ for 2011-2013 targeted 80 new applications for RDI or environmental protection and rational energy use aid on the average per year. This is the second consecutive year that this threshold has been reached for RDI applications alone. Over the entire 2008-2012 period the number of private RDI projects and programs financially supported by the government increased more than five-fold. Over the same period, RDI expenditures forecasted by beneficiary companies on promoted projects and programmes multiplied by a factor of 3.5, with a record year in 2013 where RDI expenditures reached 230 million. The percentage of applications submitted by SMEs rose from 18% in 2008 to 32% in 2013. While technological R&D remained the most representative of the RDI effort, over 40% of aid applications in 2013 applied to new aid schemes under the 5 June, 2009 amended law for promotion of RDI³⁶. Over the period 2009-2012, feasibility studies (44 in total), were the most widely applied for grants, while aid to new innovative companies came in second with 28 business plan applications. In view of the difficult economic context, it is therefore admissible to conclude that this State aid is an adequate incentive for RDI and in particular, that it generates increasingly greater innovation efforts among SMEs. The figure below indicates that this support is primarily concentrated in the sectors designated as priorities by the government for the scientific and economic development of the country.

Figure 1 : Breakdown of RDI projects by type



Source: Ministry of the Economy (February 2014)

³⁵ It should be emphasised that the 240 new aid applications to be encouraged by Luxinnovation for the period 2011-2013 refers not only to those submitted under the law dated 5 June 2009 for promoting RDI but also encompass those under the law dated 18 February 2010 related to the protection of the environment and the rational use of natural resources.

³⁶ This refers especially to aids for feasibility studies, the protection of technical industrial property, young innovative companies, innovation consulting and support services, process innovation and organisation in company departments, investments in innovation centres and their management and *de minimis* rule aid. Note that some of these aid packages that are essentially intended to promote an innovation process to companies with no experience in the area are reserved for SMEs.

- Cluster activities

The Luxembourg Cluster Initiative is set up around six theme-based clusters: *The Luxembourg Materials Cluster* for materials and technology for production, the *Luxembourg ICT Cluster* for ICT, *Luxembourg Space Cluster* concerning aeronautics and space, *Luxembourg BioHealth Cluster* for health sciences and technologies, the *Luxembourg EcoInnovation Cluster* focusing on ecotechnologies and sustainable development and the *Luxembourg automotive component cluster* for the automobile industry. This is an effective instrument for assembling the resources necessary to achieve a critical mass, to accelerate the transfer of knowledge and good practices and to increase visibility of Luxembourg players on the international scene. In 2013, the clusters, in collaboration with the Ministry of the Economy, set up a new working framework based on five priority areas: Business development, supporting flagship projects, improving brand image for the sector, intensifying promotion and prospecting and developing the internationalisation of the initiative. Specific quantitative objectives were outlined for each cluster individually.

The Luxembourg Materials Cluster carried out a mapping effort of its members and determined new directions for action. The "*High performance computing*", "*Autonomous driving*" and "*Adhesives*" themes were selected for the working groups.

The *Luxembourg ICT Cluster* increased *cross clusters* exchanges, particularly with relation to them "*Materials - High Performance Computing*" and "*SMART ICT & Green Technologies*" themes.

The Luxembourg Space Cluster continued its group work sessions addressing themes such as "*Location-based services*" and "*Remote Piloted Aerial Systems*"; it set up a training session on standards applicable to space projects and updated its catalogue of space expertise. Cooperation between international players was encouraged by setting up an economic mission in France and by organising industrial encounters between Switzerland and Luxembourg.

The *BioHealth Cluster* continued to grow in 2013, increasing membership by 30%. On the international level, more intensive cooperation with the *Luxembourg trade and investment offices* (LTIO) was initiated, especially towards the United States, and the first stages of setting up a partnership with Brazil were completed.

The strategy used by the *EcoInnovation Cluster* was reoriented to better address societal challenges: *Circular economy, Systemobility, Sustainable cities & technologies*.

The *Cluster for Logistics Luxembourg* set up working groups for logistics technician training, - *Single Window Logistics* - marketing and improving competitiveness of logistics companies.

- Activities to promote and support innovation

Numerous initiatives to promote research and innovation to domestic and international audiences were undertaken over the past year, including:

- Publication of the magazine entitled *FOCUS on Research and Innovation in Luxembourg*
- The organisation by Luxinnovation, in collaboration with the Chamber of Trades, of sector seminars on innovation management specifically targeting artisan SMEs.
- Organisation of the Innovation club, a cross-functional approach to various innovation themes intended most particularly for managers of artisan companies

- The setting up of a generalist training cycle on Innovation Management Techniques³⁷ and the Luxembourg Innovation Masterclass event³⁸
- The organisation of projects favouring the promotion of design and creativity, under which the 5th edition of the Genial competition specifically for young people was produced.
- Awareness actions by the Intellectual Property Office, for example, information courses on intellectual property or the IP Day 2013 conference. With the assistance of the Technological Monitoring Centre (CVT) support for projects was also provided, as for example the Boost-IP project for increasing awareness of companies, whose primary target audience are SMEs working in artisan or the eco-technology sectors. Diagnostics of intellectual property practices are offered by means of an individual and personalized interview and 25% of companies contacted in 2013 set up a personalised interview. In addition, 15% of SMEs who took advantage of these actions expressed interest in carrying out a financial evaluation of patents. Another example is the European IPR Helpdesk consortium³⁹, a primary counselling service intended for all research project sponsors for European projects and European SMEs, which includes two Luxembourg partners, one of which is CVT. In 2013, the consortium continued to expand its activities, which include the drafting of new fact sheets and case studies, as well as the expansion of its network of ambassadors to fifty ambassadors now, who relay the services and publications of the *IPR Helpdesk* in twenty-two countries at present.

Overall, the Luxembourg innovation and research portal⁴⁰ experienced an increase in visits of 14% between 2012 and 2013.

- Host infrastructures

Centralised management of various incubator structures is accomplished through the establishment of the *Technoport S.A* entity, whose mission is to facilitate the setup of start-ups and spin-offs. It provides suitable locations such as industrial facilities, workshops and fitted offices. It can also provide temporary premises for foreign companies who want to begin operations in Luxembourg. Since 2012, the Technoport incubator has been offering a new physical incubator structure at Esch-Belval and is a key component of the *Cité des Sciences et de l'Innovation*, a genuine relay between universities, research centres and the economy. Twenty-six innovative companies are currently operating under this incubator scheme, including eight companies that started there in 2013. The installation of a fabrication laboratory has increased the diversity of the structures. It consists of an open prototyping platform where knowledge sharing is essential and various types of tools are available to users to stimulate creativity, including a 3D printer, a laser cutter, milling machines, etc. In addition, work has started on creating two new incubators in areas that are deemed priority, health technology and eco-tech.

- Support measures for Luxembourg participation in European programmes

The government has recorded a significant increase in investments in international programs and initiatives and better financial return on investments. This involves participation in the 7th R&D Framework Program, the CIP program, the initiatives under articles 185 and 187 of the Treaty and in ESA programs. The investment figures are currently not yet final for all of these programs and initiatives, especially with regard to the ESA programs. These figures are currently only known for the first half of 2013 and the report on financial return must still be considered incomplete and temporary. Within the limitations stated above, Luxembourg recorded a financial return of 20.69

³⁷ For more details see: www.innovation-management.lu

³⁸ For more details see: www.innovation-masterclass.lu

³⁹ For more details see: www.iprhelpdesk.eu

⁴⁰ For more details see: <http://www.innovation.public.lu>

million in 2013, compared to 33.01 million in 2012, which represents a success rate of 109% of the 65 million it set as an objective for the three-year period from 2011-2013. Overall, the participation in terms of volume of Luxembourg in the 7th Framework Programme for 2007-2013 has increased over the entire period. Some 70 projects were assisted and submitted at ESA. The number of Luxembourg investments in signed contracts is temporarily 36. The cumulative amount of financial return linked to these investments is 9.3 million. This encouraging result is primarily due to the promotion and consulting work accomplished by Luxinnovation.

As 2013 is the final year of the 7th Framework Programme, Luxinnovation concentrated its promotion activities on the new framework programme for research and innovation, "Horizon 2020", addressing the following actions:

- The organisation of information sessions to present calls for European programmes, in particular the setting up of a national conference to launch the Horizon 2020 in 2014. This nationwide event was combined with the Winter School event for which parallel training sessions were organised for researchers and companies by financed themes.
- A regional brokerage event co-organised by Luxinnovation entitled "*Pré-ICT2013: Bringing Vilnius to the Greater Region*" in Luxembourg. In all, eight Greater Region partners as domestic or regional contact points of the 7th Framework Programme combined to set up pre-programmed meetings with the support of Ideal-IST, bringing together around one hundred participants.
- The publication of a catalogue presenting some twenty projects with major involvement of Luxembourg, financed as European programmes in the spirit of supporting future partners and highlighting the various Luxembourg investments in European research and innovation programmes.
- The establishment of a new internet site⁴¹ dedicated to the European programme and intended to keep participants updated on the broad guidelines of Horizon 2020.

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.*"

4.3.1 National greenhouse gas emissions target

4.3.1.1 National greenhouse gas emissions target

The most recent inventory of GHG emissions in Luxembourg covers the period of 1990-2012⁴². It indicates that total emissions amounted to 11.8 million tons of CO₂-equivalent for the year 2012, excluding international aviation and land use, land use change and forestry (LULUCF)⁴³, some 300,000 tons of CO₂-equivalent fewer than 2011. Emissions have even decreased with respect to

⁴¹ For more details see: www.horizon2020.lu

⁴² In accordance with EU regulation No. of the European Parliament and the Council on 21 May 2013 on a mechanism for monitoring and submitting GHG emission and for statements of same nationally and to the Union, other information dealing with climate change and revoking Decision No. 280/2004/EC and GHG emissions estimates for a given year must be submitted to the Commission prior to 15 January of year X + 2.

⁴³ An initial estimate of emissions for 2013 will be prepared shortly by the Department of the Environment in the Ministry for Sustainable Development and Infrastructures. It will be submitted to the Commission by no later than 31 July 2014 in accordance with Art. 8 of EU regulation no. 525/2013.

the record year of the decade, 2005, by 1.27 million tons of CO₂-equivalent, a drop of 9.7%. It was only in 2009, a year that was particularly impacted by the financial and economic crisis, that lower emission levels were recorded, with 11.7 million tons of CO₂-equivalent. Despite the significant decreases recorded since 2005, these amounts are well above the 9.5 million tons of CO₂ equivalent that Luxembourg committed to as part of the Kyoto Protocol⁴⁴. Since then, Luxembourg has been resorting to the flexible mechanisms provided for under the Protocol, but in proportions clearly lower than originally estimated. In 2006, with the submission of the second “National Allocation Plan” relating to ETS to the Commission⁴⁵, use of the flexible mechanisms was estimated at 23.65 million tons of CO₂-equivalent. At present, this estimate is closer to 14,2 million tons of CO₂-equivalent. At the same time, the price of the ton of CO₂ has considerably dropped, making the cost of using this mechanism even lower than originally thought.

For the post-Kyoto period of 2013-2020, only those sectors not covered by the ETS have objectives set by Member States. For Luxembourg, this **emissions reduction objective excluding ETS** amounts to **20% of the 2005 level for 2020**. As such, Luxembourg could release **around 8.085 million tons of CO₂** that year⁴⁶. Between 2013 and 2019, intermediate objectives should be met along a linear trajectory for which the starting point, in 2013, is comprised of average emissions excluding ETS for the years 2008-2010. Here, the economic crisis effect exercises a clear negative impact on Luxembourg, lowering its budget of emissions for 2013 and beyond. Luxembourg estimates the deficit to be made up for the period 2013-2020 at 11.3 million tons of CO₂ in an "existing measures" scenario, and at 7.5 million tons of CO₂ in an "additional measures" scenario. In this eight year period, resorting to the flexible credits will surely be necessary, but the volumes in question will nonetheless be smaller than for the Kyoto phase, especially because of national measures implemented and under review. However, forecasts regarding the use of the flexible credits mechanism are provided on a temporary and obligation-free basis. While the Climate and Energy package allows for use of these mechanisms, there are restrictions on the types of projects and volumes. The government intends to review the emissions certificate acquisition policy in order to better orient the country towards quality projects such as the Gold Standard.

Table 10: Changes in GHG emissions, excluding LULUCF for certain selected years (in million tons of CO₂e)

Source	1990	1995	1998	2000	2005	2006	2007	2008	2009	2010	2011	2012	2012/1990	2012/2011
Production of heat & electricity	0.04	0.09	0.15	0.12	1.24	1.31	1.18	1.00	1.20	1.21	1.00	1.04	2500.0%	4.0%
Industrial production	7.93	4.36	2.11	2.21	2.31	2.44	2.32	2.14	1.95	2.07	1.98	1.89	-76.2%	-4.5%
Road transportation: national fleet	0.91	1.25	1.32	1.50	1.53	1.64	1.67	1.72	1.76	1.77	1.80	1.75	92.3%	-2.8%
Road transportation: export of road fuels	1.76	2.17	2.57	3.33	5.46	5.05	4.74	4.83	4.29	4.62	5.00	4.74	169.3%	-5.2%
Households, businesses and services	1.31	1.39	1.56	1.67	1.68	1.66	1.58	1.63	1.61	1.69	1.47	1.57	19.8%	6.8%
Agriculture	0.76	0.75	0.75	0.77	0.72	0.71	0.72	0.73	0.74	0.75	0.74	0.73	-3.9%	-1.4%
Other sources	0.20	0.17	0.19	0.17	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13	-35.0%	-7.1%
Total GHG emissions, excluding LULUCF	12.91	10.18	8.65	9.77	13.09	12.96	12.36	12.19	11.69	12.25	12.13	11.85	-8.2%	-2.3%
Amount used in the Kyoto Protocol	13.17												-10.0%	

Source: Ministry of Sustainable Development and Infrastructures, 2014 version 1.3 dated 15 March, 2014

⁴⁴ In 2012, GHG emissions were 10% lower than the base year of 1990. Yet Luxembourg set an objective of reducing its emissions by 28% compared to the base year between now and the end of the period covered by the Protocol.

⁴⁵ For more details see: http://www.environnement.public.lu/air_bruit/dossiers/CC-PN_allocation_quotas_GES/index.html

⁴⁶ In view of the adjustment under Article 10 of Decision 406/2009/EC as published in European Commission Implementing Decision 2013/634/EU dated 31 October 2013.

**Table 11: Indicative trajectory for GHG emissions, excluding LULUCF & ETS
under EC decision 406/2009/EC (in million tons of CO₂e)**

	2005	2008	2009	2010	2013	2014	2015	2016	2017	2018	2019	2020
Total GHG emissions, excluding LULUCF	13.01	12.09	11.55	12.11								
Civil aviation emissions (Domestic flights)	0.00	0.00	0.00	0.00								
ETS emissions confirmed in CITL	2.60	2.10	2.18	2.25								
Annual emissions allowances – Decision 2013/162/EU					9.74	9.54	9.33	9.13	8.93	8.73	8.53	8.32
Contribution to the adaption of ETS processes under Art. 10 of ESD					0.28	0.27	0.27	0.26	0.25	0.25	0.24	0.24
Annual adjusted emissions allowances under Article 10 of Decision 2013/634/EU					9.46	9.27	9.07	8.87	8.68	8.48	8.28	8.08

Source: DG CLIMA, on the basis of 2012 version 1.2, corrected for recommendations and adjustments of the 2012 European review of the inventory. The "annual emissions allocations" are published in Appendix I of Commission Decision 2013/162/EU dated 26 March 2013 on determining Member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and the Council (ESD). Data adjusted for Article 10 of Decision 406/2009/EC were published in an Implementing Decision 2013/634/EU dated 31 October 2013.

**Table 12: Expected changes in GHG emissions, excluding LULUCF and ETS from now till 2020
and comparison with the trajectory under decision 406/2009/EC (in million tons of CO₂e)**

	2013	2014	2015	2016	2017	2018	2019	2020	Period deficit
With current measures									
Road transportation	:	:	6.82	:	:	:	:	7.33	
Households, businesses and services	:	:	1.45	:	:	:	:	1.31	
Other non-ETS sources	:	:	1.76	:	:	:	:	1.79	
Total GHG emissions, excluding LULUCF & ETS	10.04	10.03	10.03	10.11	10.19	10.27	10.35	10.43	11.25
With additional measures									
Road transportation	:	:	6.47	:	:	:	:	6.60	
Households, businesses and services	:	:	1.45	:	:	:	:	1.31	
Other non-ETS sources	:	:	1.76	:	:	:	:	1.79	
Total GHG emissions, excluding LULUCF & ETS	9.86	9.77	9.67	9.68	9.68	9.69	9.69	9.70	7.55
Annual adjusted emissions allowances under Article 10 of Decision 2013/634/EU	9.46	9.27	9.07	8.87	8.68	8.48	8.28	8.08	
Difference in % - with existing measures	:	:	10.6%	:	:	:	:	29.0%	
Difference in % - with additional measures	:	:	6.7%	:	:	:	:	19.9%	

Source: Forecasts of GHG emissions – Ministry of Sustainable Development and Infrastructures, sixth National Statement as part of the UNFCCC. Emissions totals for 2013, 2014 and 2016-2019 are linear interpolations. The Period Deficit column for 2013-2020 is simply the difference between the sum of expected emissions with or without additional measures and the sum of annual adjusted allowances. The difference between projections with existing and with additional measures is in the use of biofuels accounting for 7.5% of sales in 2015 and 10% of sales in 2020. It also incorporates increased electric mobility that should reach 10% of the automobile fleet in 2020.

4.3.1.2 Key measures for achieving the national target⁴⁷

The year 2013 featured the continuation of the implementation of the first "CO₂ Emissions Reduction Action Plan" adopted by the government in April, 2006 and supplemented in 2007, and the adoption of its successor plan in May 2013, which is the result of work undertaken in 2010 as part of the Partnership for the Environment and Climate. This Plan contains numerous measures in the area of transportation, construction, renewable energies, industry, information, awareness, consulting and energy training.

- In the area of energy, the principal measures determined include the support of renewable electric energy through purchase obligations, heat production by means of renewable energy sources and the promotion of energy efficiency.
- In industry, the principal measures are the EU ETS quota exchange system, energy audits in major companies and promotion of eco-technologies.

⁴⁷ See Section 3.6 Greenhouse gas emissions for this part.

- Regarding transportation, the principle measures include the implementation of actions and projects recommended by the overall MoDu sustainable mobility strategy, which seek to develop public transportation, more intensive use of "soft mobility" through walking and non-motorised transportation and the drawing up of a quasi real-time telematic information system for public transportation. The MoDu sustainable mobility strategy for resident and cross-border persons was published in 2012 and has four objectives: development of the territory, soft mobility, public transportation and promoting an alternative to driving cars. In a motion adopted subsequent to consultative debate in June, 2012 on the concept of mobility and the City of Luxembourg tramway, Parliament confirmed this strategy and in 2013 the new government emerging from the national elections confirmed MoDu as a priority:
 - An essential link of the MoDu strategy is the City of Luxembourg tramway project, which is placed as the principal artery in the mobility chain concept for linking the various development poles of the capital. This project will break up the bottleneck choking public transportation in the main avenue of the capital and accommodate increased passenger flows toward the city in the medium and long terms. The economic interest grouping GIE LUXTRAM is responsible for implementing the tramway project, with commissioning set for 2017. The draft law authorising the financing of the first Tramway was submitted in October 2013.
 - Several extensions to this line are scheduled that will connect all the development centres. Reviews relating to the extension of the tramway to Findel and Howald/Cloche d'or were accelerated in 2013 so that a draft law can be submitted shortly. Efforts to increase the modal share of public transportation and soft mobility are transposed by a significant improvement in products for this phenomenon and a progressive extension of infrastructure on the domestic and cross-border level. The initial successes of this policy have appeared with regard to cross-border flows, where the share of cross-border commuters using public transportation increased from 9% in 2007 to 14% between 2007 and 2010. Domestically, a 23% increase in the number of rail passengers was achieved in the period 2005-2010. In the area of bus transportation, the number of passengers increased by 37% in the regional RGTR and CFL networks, by 17% in urban AVL buses and by 15% in the TICE system for the period of 2006-2010. In rail transportation, volumes of travellers increased by 3.9% between 2012 and 2013.

While the MoDu strategy describes interaction and integration of certain projects and measures, the Transportation Sector Plan (PST) states the infrastructure projects for individual and public transportation as well as the measures featured in the strategy. This provides a regulatory framework to the strategy, including primarily the preparation of corridors for infrastructure projects, the implementation of a parking management system and promotion of the soft mobility concept. In 2013, PST documents were finalised initially, but the national election results made it necessary for the PST to be modified again in early 2014 so that the Grand Duchy PST regulation can take effect. With the PST and the Landscaping, Housing and Economic Activities Zone sector plans, the role of territorial development is strengthened, highlighting the principal objective in mobility as reducing distances between work and home. These instruments will result in more compact urban planning, a good mix of functions and activities and a reduction in traffic demand, leading to the attainment of sustainable development in the domain of territorial development.

Apart for the development of sustainable mobility on the national level, the government is persisting in its strategy of developing alternative systems for cross-border traffic. An initial section of this strategy took solid form through the development with French authorities of a Cross-border mobility scheme (SMOT) in 2009. SMOT seeks to facilitate mobility of cross-border workers in

Lorraine and is a specific action programme with shared strategic directions. It is based on the implementation of a series of actions concerning the use of soft parameters in terms of rates, means of communications, etc. It also addresses the development of public transportation systems for rolling stock, timing of railway service, etc. and completion of infrastructure projects including rail projects, stations and Park and Ride facilities, etc. In view of the excellent functioning of this cooperation effort, a similar process was undertaken with the Belgian and German partners and was formalised by the signature in 2013 of protocols with Wallonia, the Rhineland Palatinate and the Sarre regions. The two SMOT programmes were launched at the end of 2013 and the beginning of 2014.

Since the introduction of subsidies for the PRIME CAR-e program for fuel saving vehicles in 2007, market share of vehicles with low fuel consumption has increased significantly. More than 25% of cars registered in 2013 produce emissions lower or equal to 120 grams of CO₂/km, compared to only 11.9% in 2007. A rapid drop in average CO₂ emissions of new vehicles registered each year has also been noted, with 135g of CO₂ released per kilometre operated in 2013, a drop of 18.7% compared to the average value in 2007. A Grand Duchy regulation extended the aid scheme two years in February 2013 through the end of 2014, amounting to € 5,000 for vehicles powered exclusively by an electric motor, as well as for electric hybrid plug-ins, provided that they release no more than 60 grams of CO₂/km travelled. The scope of the aid scheme was also extended to cover electric utility vehicles⁴⁸. The government nonetheless decided to halt this scheme between now and the end of 2014. This reorganisation of aid schemes takes into account the determination to promote the development of electric mobility⁴⁹.

Other scheduled actions include the introduction of an ecological mobility label for companies, the development of biofuels and changes to vehicle taxes.

- In the area of housing, apart from the implementation of the Housing Sector Plan (PSL), a Grand Duchy⁵⁰ regulation went into effect on 1 January 2013 introducing an ambitious schedule for the progressive improvement of energy performance requirements in new and existing residential buildings. It offers a new aid scheme for energy savings and the use of renewable energy, thus perpetuating the previous scheme used from 2008-2012. It is a fundamental revaluing of measures implemented in the area of energy renovations aimed at potentially major energy savings that could be acquired through improvements in existing homes⁵¹. All of these housing measures together fall under the PRIME House moniker.
- The government expects to adopt an ambitious agenda for the application of strict standards for residential and commercial buildings; it intends to establish new financing methods to achieve progressive improvement on all existing construction⁵² and will establish an inventory of central government buildings impacted by the energy efficiency directive.

Another cornerstone of the measures in place for limiting GHG emissions is the Climate Pact with municipalities. This law⁵³ empowers the State to provide financial and technical support to municipalities, who become members of the pact between 1 January, 2013 and 31 December,

⁴⁸ For more details see: <http://www.car-e.lu/>

⁴⁹ For more details see: Renewable energy objective and the key measures for achieving it

⁵⁰ Grand-Ducal regulation dated 5 May, 2012 amending: 1. Grand-Ducal regulation dated 30 November, 2007 concerning energy performance in residential buildings, 2. The Grand-Ducal regulation dated 31 August, 2010 concerning energy performance in commercial buildings.

For more details see: <http://www.legilux.public.lu/leg/a/archives/2012/0096/2012A1096A.html?highlight>

⁵¹ For more details see: http://particuliers.myenergy.lu/files/Aides%20financieres_PRIME%20House%202013-2016_V2.pdf

⁵² Draft law relating to the promotion of housing and sustainable habitat submitted to Parliament on 20 June 2013.

⁵³ Law dated 13 September establishing the Climate Pact with municipalities

2020⁵⁴. The goals pursued by the Climate Pact consist in strengthening the exemplary role of municipalities in climate policy, reducing GHG emissions and the energy bill on municipal territory and stimulating local and regional investments. Concluding the “Climate Pact” contract between a municipality and the State implies commitments by both parties to the agreement. Each municipality must commit to implementing a quality management system of its energy and climate policy, to wit, the European Energy Award® – EEA, which is supplemented by quantifiable CO₂ emissions reductions measures. In addition, each municipality agrees to establish an energy accounting system for its infrastructures and community equipment within two years. The State provides a guarantee of financial support and technical assistance through the *myenergy*⁵⁵ programme. The municipality may subsequently be awarded a certification depending on the extent to which the EEA measures catalogue has been achieved. Financial aid provided by the State under the Climate Pact is comprised of five elements:

- A fixed annual grant of € 10,000 for operating expenses
- The State bears the cost of fees of internal and external climate consultants
- A variable annual subsidy, call the Climate Pact Bonus, varying between €5 to 35 per inhabitant with a ceiling of 10,000 inhabitants granted to communities that have achieved one of the three certification levels. This bonus, which depends on the number of inhabitants of a municipality, the level of certification achieved and time the certification takes place, is intended to encourage communities to implement the measures in the work program and is a reward for achieving these measures.
- Financing of municipal projects through environmental protection funds, for which budget resources will be increased
- Assumption by the State of the costs for administration and technical assistance under the “Climate Pact” project provided by *myenergy*.

Excluding the Climate Pact, a large part of the expenditure for measures incorporated into the second CO₂ Emissions Reduction Action Plan will be financed by the Climate and Energy Fund established by law⁵⁶ in December 2004 to address the cost of using flexible mechanisms, then to finance energy efficiency and renewable energy measures. This Fund, which was started with an annual budgetary allocation through 2012, is replenished primarily from receipts of an additional tax on gasoline and diesel fuel and from a 40% portion of the annual road tax on vehicles based on their CO₂ emissions. It is nonetheless dangerous to attempt to accurately estimate the cost of domestic measures in coming years and costs related to emissions taxes that it will be necessary to incur in order to achieve the objective of a 20% reduction of emissions by 2020. In recent years, of total GHG emissions, excluding LULUCF, 55% originate with road fuel sales, of which 15% from residents and 40% from non-residents. Future changes in the price differential with neighboring countries are highly uncertain. The same is true with regard to carbon pricing, which is currently very low, but which will have to increase substantially for the carbon market to be effective economically. The possibilities of cooperation are marked by a wide degree of unpredictability under Decision 406/2009/EC with regard to use of external credits by other Member states and under the Kyoto Protocol, which was extended to 2020 by a limited number of Member States at the UNFCCC conference in December, 2012. Based on very conservative assumptions, the

⁵⁴ Law dated 13 September: 1. Establishing the Climate Pact with municipalities 2. Amendment to the amended law dated 31 May 1999 establishing a fund for the protection of the environment.

For more details see: <http://www.legilux.public.lu/leg/a/archives/2012/0205/a205.pdf#page=2>

⁵⁵ For more details see: <http://www.myenergy.lu/>.

⁵⁶ Law dated 23 December 2004: 1) Establishing an emissions trading system for greenhouse gases, 2) Setting up a fund for financing Kyoto mechanisms, 3) Amending Article 13bis of the amended law dated 10 June 1999 on classified establishments.

For more details see: <http://www.legilux.public.lu/leg/a/archives/2004/0210/a210.pdf>, (3792-3799))

government is expecting a deficit in emission rights approaching 11.5 million tons of CO₂-equivalent for the period 2013-2020⁵⁷, which will be multiplied by a price per ton of CO₂ that could reach up to 37 in 2030 according to the Commission in its evaluation of the Climate and Energy Package impacts⁵⁸. Yet if Luxembourg concentrates on quality clean development mechanism (CDM) projects like Gold Standard that the new government has indicated, the price per ton of CO₂ will be higher than the average 13 per tonne for emission credits between 2008-2013. In all, forecasts for annual costs of the Climate and Energy Fund come in at between 120-140 million for the period 2014-2017, totalling 530 million for the entire period. The part of these expenditures related to the Climate section is broken down as follows for 2014-2017: around 108 million for national policies and measures, 156 million for the purchase of emissions rights and 30 million to finance developing country projects such as the Fast Start programme. The Climate Pact budget envelope, including its implementation, is recorded under "Environment protection funds" and amounts to 110 million between 2013-2020.

4.3.2 The national renewable energies target

4.3.2.1 The national renewable energies 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.

Table 13: Indicative trajectory for energy produced from renewable sources in final energy 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

The portion of renewable energy in final consumption calculated according to the method recommended by Directive 2009/28/EC arrives at 3% for the average of the years 2011 and 2012. Therefore, the objective set out by the indicative trajectory was achieved. The contributions to this objective by the various sectors were 4.64% for electrical energy and 4.99% for heat and cooling production. The portion of renewable energy used in transportation came to 2.22%.

4.3.2.2 Key measures for achieving the national objective

The Member States had to present their national renewable energy action plans to the Commission by 30 June 2010. The Luxembourg plan calls for achieving the national 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 and use of cooperation mechanisms, primarily through statistical transfers and joint projects with other Member States and possibly with third countries. The Development of

⁵⁷ Compared to 14.2 Mt CO₂e for the Kyoto periods (see supra). The latest calculation indicates a deficit of 11.3 Mt CO₂e (see section 4.3.1.1), adjusted up for prudential budget reasons.

⁵⁸ According to the results of the last PRIMES year in 2010, the reference scenario: SEC (2011) 288, Impact Assessment to the Roadmap for moving to a competitive low carbon economy in 2050 (2015 = 10 euros per tonne; 2020 = 17 euros, 2025 = 27 euros and 2030 = 37 euros).

energy efficiency between 2010 and 2020 will result in a reduction in absolute terms of the nation's objective 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 Action Plan takes up thirty-seven measures to achieve the national objective set by Directive 2009/28/EC. These measures will take specific shape and be adapted depending on progress achieved for meeting intermediary objectives. A detailed description of these measures, as well as the schedule for implementing them, is described in the national renewable energy action plan. The principal recent actions as part of these measures that have an impact on the development of renewable energies are mentioned hereafter.

a. Developing renewable energies

The government has put in place a mechanism for supporting biogas production installations for injecting biogas in the natural gas networks in Luxembourg. In this way, a Grand Duchy regulation⁵⁹ was published in December, 2011. At this stage, three installations are injecting biogas in the natural gas networks in Luxembourg and in 2012 some 65 million kWh equivalent of biogas were injected into the natural gas system. Profitability analyses of these facilities were undertaken using external consultants to assess the compensation to be approved.

Analyses were done using external consultants in 2013 regarding the possibility of fixing a feed-in tariff for heat produced by biomass use combustion installations with the purpose of enhancing renewable energy potential to its maximum limits. The final stages of this work will be pursued in 2014.

A Grand Duchy regulation⁶⁰ sets a clear schedule for increasing requirements in the area of energy performance in new residential buildings and additions to existing residential buildings. The new requirements are an implicit incentive to implement renewable energies. As such, all new construction beginning after 1 July, 2012 must implicitly incorporate renewable energies and as from 2017, new residential buildings must meet the highest performance standards of the energy performance certificate, AAA. The preparation of a standard for houses with nearly zero energy consumption was sketched out in a follow-up report to Article 9 of Directive 2010/31/EU on energy performance in buildings (revision) and was forwarded to the European Commission. A draft Grand Duchy regulation for determining upcoming phases by 2017 for commercial buildings is currently being drafted. The regulatory procedure in this area is being planned for 2014.

Since January 2013, a new regulation has been in effect pertaining to aid schemes that promote the rational use of energy and highlight renewable energy sources in the housing sector for 2013- 2016. This regulation creates more advantageous incentives for most of the target technologies and actions and is intended to accelerate the spread of renewable energies and energy efficient technologies in the domestic sector. It will also considerably support the achievement of objectives in the area of renewable energy and energy efficiency. Emphasis has been placed on the development of renewable energy in the area of heat production, especially subsidies more favourable to geo-thermal heat pumps and wood fired furnaces.

During 2013, the government continued to analyze the amount and structure of feed-in tariffs regarding electrical production based on renewable energy sources. These analyses were accompanied by external consultants. As part of these analyses, documentation for setting new

⁵⁹ Grand-Ducal regulation dated 15 December, 2011 concerning the production, income and marketing of biogas.

⁶⁰ Grand-Ducal regulation dated 5 May, 2012 amending: 1. Grand-Ducal regulation dated 30 November, 2007 concerning energy performance in residential buildings, 2. The Grand-Ducal regulation dated 31 August, 2010 concerning energy performance in commercial buildings.

tariffs in compliance with the rules relating to State subsidies for obtaining related approvals from the European Commission was one priority. Discussions were held with all sectors concerned and representatives of the various sectors were involved in the discussion process. A Grand Duchy regulation to adapt feed-in tariffs was introduced into the regulatory procedure in mid-2013. This Grand Duchy regulation was also notified to the European Commission in order to obtain approval in compliance with the rules for State aid.

b. Mix of biofuels in fuel available for consumption nationally.

Directive 2009/28/EC calls for implementing sustainability criteria for biofuels and bioliquids nationally. This aspect of Directive 2009/28/EC was transposed by a Grand Duchy regulation⁶¹. For 2012, the percentage of biofuels to be incorporated into standard fossil biofuels has been set at 2% in terms of energy content. This percentage was raised to 3.75% in 2013.

c. Electric mobility

A technical-economic study carried out by the government and the *Institut Luxembourgeois de Régulation* (ILR) resulted in setting out a shared national concept for implementing electric mobility in Luxembourg. The following conclusions were adopted on the basis of this study:

- Operation and maintenance of public infrastructure provided by network managers
- Use of a common central system
- Free choice of electricity supplier by users
- A uniform payment system valid throughout the country
- A Grand Duchy regulation will determine the technical functionalities and specifications, the number of charging stations and overall scheduling and organisation of installation

On the basis of these conclusions, the government set an objective of achieving a rate of around 10% of electric powered cars in Luxembourg's automobile fleet by 2020, the equivalent of 40,000 cars. Some 850 public recharging stations for electric cars are to be installed by 2020. The conclusions of this study are in a law⁶² determining the major principles for the development of electro-mobility in Luxembourg. Discussions with grid managers to be used in the drafting of specifications are underway. This process is accompanied by a consulting procedure with stakeholders.

In 2013, the Ministry of the Economy accompanied the Ministry of Sustainable Development and Infrastructures in the coordinated implementation of electric mobility in Luxembourg, together with the managers of grid distribution and with other stakeholders of electric mobility. The purpose was to clarify the details of future charging infrastructure for electric vehicles with the participants concerned, as well as the principles underpinning their installation, operation and financing. The results relating to this effort were presented to the municipalities during an informational meeting set up by the SYVICOL in October 2013.

Services for installation, operation and maintenances were set out and will be provided by grid distribution managers. These considerations are the basis for the preparation of a Grand Duchy regulation relating to the public infrastructure of electric mobility that will be submitted into the regulatory proceedings in early 2014.

⁶¹ Grand-Ducal regulation dated 27 February, 2011 setting sustainability criteria for biofuels and bioliquids.

⁶² The law dated 7 August, 2012 amending the law dated 1 August, 2007 relating to the organization of the electricity market.

d. Mechanisms for cooperation

An analysis of action plans within the EU has revealed that a number of Member States are likely to exceed their intermediary and/or final objectives for 2020. The government has made contact with a number of these Member States in order to discuss possibilities for cooperation. It remains clear that the 2020 objective will be achieved by resorting to the maximum levels of national potentials.

4.3.3 National energy efficiency target

4.3.3.1 National energy efficiency target for end use of energy

UE directive 2006/32/EC determines a framework for energy efficiency in the final use of energy services 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. Directive 2006/32/EC applies to the distribution and retail sale of energy, to providing measures to improve energy efficiency, to end users except for activities subject to the greenhouse gas emission allowance trading system 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 must 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. The Member States were to draw up a national energy efficiency 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 was submitted to the European Commission in March 2008. In September 2011 Luxembourg submitted its second PAEE to the European Commission, as provided for under directive 2006/32/EC. In accordance with the directive, the second PAEE includes the following principal elements:

- An in-depth analysis and evaluation of PAEE I and the final results regarding achievement of the energy savings objective, as well as complementary measures for achieving the objective set for 2016.
- Revising of the calculations of average annual consumption for final yearly domestic energy consumption during the period 2001-2005, on the basis of updated statistical data. This annual average consumption is reduced by exports of petroleum products and the consumption of companies participating in the Emission Trading Scheme (ETS). It amounts to 19,654 GWh per year, compared to 17,576 GWh per year for PAEE I.
- Recalculating the indicative national objective in the area of energy savings. This objective is expressed as an absolute value and is applied throughout the entire period of the present 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 1,769 GWh per year, compared to 1,582 GWh per year for PAEE I. The accumulated measures in the PAEE exceed the target value of 9% by 5.06 percentage points, arriving at 14.06%.
- A 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 in PAEE II into the following three categories: “Early Action” measures (A), which were implemented during the period of 1995-2007 and are continuing to produce the desired effects for 2016. The A measures represent around 5.9% of the total effort of around 14.1%, in contrast to PAEE I, with 4.0% of the total effort of 10.4%.

"New" measures (B), which are in the process of being implemented and whose impact began taking effect after early 2008. The B measures represent around 6.0% of the total effort of around 14.1%, in contrast to PAEE I, with 4.1% of the total effort of 10.4%; Projected/Possible Measures (C) are used for achieving the indicative national objective in energy savings. The C measures represent around 2.2% of the total effort of around 14.1%, in contrast to PAEE I, with 2.3% of the total effort of 10.4%.

- The measures undertaken by the public sector aim to improve energy efficiency and illustrate that the public sector is playing an exemplary role under the provisions of the 2006/32/CE directive to include energy efficiency measures taken during the construction of new public buildings and during upgrading of existing public buildings, preparing 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 market players 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. Also, measures taken to guarantee that these entities implement the conditions and motivation appropriate to strengthening information and advice on energy efficiency in final uses.
- A list of existing and new measures and instruments to promote the objectives of directive 2010/31/EC of 19 May, 2010 on energy performance in buildings (recast). This involves 25 measures in all sectors and a detailed description of these measures with the sectors concerned, with the action plan detailing their energy and financial impacts.

An analysis of the second plan concludes that Luxembourg clearly exceeded its intermediate objective of 3% for 2010 and that the country's domestic measures will result in it exceeding the 9% objective set for 2016. Following an in-depth analysis and evaluation in 2011 undertaken to establish a second PAEE, the **national indicative objective for energy efficiency in 2016** was increased to its current level of **14.06%**. The 2020 objectives are stated in EU directive 2012/27⁶³. Luxembourg has undertaken transposition work and is currently analyzing the various aspects of implementing a compulsory mechanism in the area of energy efficiency. By virtue of Directive 2012/27/EU, a new national action plan in the area of energy efficiency must be notified to the European Commission by 30 April 2014. The analysis and drafting of this plan are currently underway. It covers significant measures aimed at improving energy efficiency and expected and realised energy savings, in particular for the supply, transportation, distribution and final use of energy, all with a view to attaining national energy efficiency objectives that Luxembourg submitted to the European Commission in 2013⁶⁴. In July 2013, the Ministry of the Economy notified the Commission of its **indicative national energy efficiency objective**⁶⁵ in the form of an absolute level of primary energy consumption and final energy consumption in 2020. Keeping in mind that the directive is targeting a 20% decrease in the consumption of energy in the EU by 2020, Luxembourg has set an objective of **final energy consumption of 49,292 GWh by 2020, or 52,111 GWh of primary energy**. In July 2013, the European Commission was also notified of the first report on progress achieved in the attainment of national energy efficiency objectives⁶⁶. This type of report must be done annually.

⁶³ The 2020 objectives were included in directive 2012/27/EU of the European Parliament and the Council dated 25 October, 2012 on energy efficiency, amending directives 2009/125/CE and 2010/30/CE and suppressing directives 2004/8/EC and 2006/32/EC.

⁶⁴ In accordance with Article 3, paragraph 1 of this directive.

⁶⁵ In application of Article 3 of Directive 2012/27/UE

⁶⁶ As stipulated by Article 24 paragraph 1 of Directive 2012/27/UE.

4.3.3.2 Key measures for achieving the national target

A Grand Duchy regulation⁶⁷ sets a clear schedule for shoring up requirements in the area of energy performance for new residential buildings and for some additions to existing buildings, in addition to some clarifications and modifications of various technical factors and requirements. It also prescribes mandatory publication of information regarding energy performance when leasing or selling buildings. This modification includes the schedule in directive 2010/31/EU dated 19 May 2010 regarding energy performance in buildings with near zero energy consumption.

In 2013, work was continued to develop a registry of energy performance certificates of buildings in Luxembourg on the basis of a feasibility study carried out in 2011. Implementing this registry will be the precursor for setting up a compliance system and a measuring tool that can produce energy performance statistics for structures in Luxembourg.

Work to draft a national plan for increasing the number of buildings with near zero energy consumption was finalised in 2013 and the plan was mandated by directive 2010/31/EU was sent to the European Commission in August 2013. The plan sets out the guidelines to be used to introduce the concept of a near zero energy consumption structure. The definitive concept cannot be determined until a report on the calculation of optimal levels of minimal energy performance requirements depending on costs has been prepared. The drafting of this report is in its final stages. It is a question of calculating costs of energy efficiency measure during their expected economic life cycles. Profitability of various minimal energy performance requirements must be evaluated to determine optimal levels as a function of costs for achieving energy performance requirements. The report cited above is to be submitted to the European Commission in March 2014. In 2013, the government submitted a draft Grand Duchy regulation for transposing the missing items of Directive 2010/31/EU into national law. This involves essentially minor changes, such as the introduction of the "buildings with near zero energy consumption" concept, the setting of deadlines to meet this standard and mention of energy performance criteria of commercial buildings in announcements.

The analysis of directive 2012/27/EU of the European Parliament and the Council dated 25 October 2012 relating to energy efficiency with a view to its transposition into national law were begun with the help of external consultants, especially with regard to the transposition into national law of the required mechanisms in the area of energy efficiency. Luxembourg must prepare and make public *"an inventory of central government buildings having a total useful surface area in excess of 500 sq. m that are heated and/or cooled"*⁶⁸. Luxembourg must then renovate 3% of the total surface area of building in this inventory annually, where such buildings do not comply with the minimum energy efficiency requirements. The Ministry of the Economy sent this inventory to the European Commission in March 2014.

In the area of cogeneration, the alignment of national regulations to Directive 2004/8/EC dated 11 February 2004 relating to the promotion of cogeneration on the basis of the useful heat demand in the internal energy market was achieved by the Grand Duchy regulation⁶⁹. In the future, the government intends to further support the development of cogeneration based on renewable energies as a priority over cogeneration activities based on fossil fuel sources.

⁶⁷ Grand-Ducal regulation dated 5 May, 2012 amending: 1. Grand-Ducal regulation dated 30 November, 2007 concerning energy performance in residential buildings, 2. The Grand-Ducal regulation dated 31 August, 2010 concerning energy performance in commercial buildings.

⁶⁸ Under the terms of Article 5, paragraphs 5 and 6 of Directive 2012/27/EU.

⁶⁹ Grand Ducal regulation of 26 December 2012.

As part of its rational use policy for energy, the government continued to promote adherence to voluntary agreements with the industrial sector covering the period 2011-2016. The purpose of this agreement is to further solicit the commitment of signatory companies to improving energy efficiency and to implement new and renewable energy sources. Companies signing the agreement further commit to implementing an energy management system that identifies potential improvements in energy efficiency and establishes an action program to produce a package of measures to achieve this potential. The economic interest grouping myenergy will take over the coordination and follow up roles of data provided by companies, as well as information dissemination, consulting and awareness responsibilities.

Intelligent metering systems that determine a framework and schedule for the roll-out of a national shared and interoperable infrastructure of intelligent metering were submitted for legislation⁷⁰. These systems promote active participation of consumers on natural gas and electricity markets based on a shared central system used to communicate data through a single common system, for electricity and natural gas at a minimum. The start of this general implementation is set for 1 July, 2015 at the latest. This type of intelligent metering equipment should be in use by at least 95% of end users of electricity at 31 December 2018, and at 31 December 2020 by end users of natural gas. The government closely monitored preparations for the installation process of intelligent meters in Luxembourg, carried out in concert with the gas and electric companies and coordinated by the ILR. In this way, a draft Grand Duchy regulation relating to the ways of operating intelligent metering systems for electricity and natural gas have been prepared⁷¹.

4.4 The Education objective and 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 **sustainably maintaining the dropout rate below 10%**. If the dropout rate stabilises at under 10%, the objective will be modified in 2015.

In Luxembourg, the figures resulting from the Labor Forces Survey (LFS), upon which is based the indicator used to monitor students who leave school under the Europe 2020 strategy, 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. To fill these gaps, the government has developed a national study in effect since 2003.

⁷⁰ Laws dated 7 August 2012 amending amended laws dated 1 August 2007 (electricity and natural gas).

⁷¹ By virtue of Article 29, paragraph 4 of amended law dated 1 August 2007 relating to the organisation of the electricity market that is in the regulatory process.

Table 14: National statistics on the rate of school dropouts

Study	School year	Theoretical permanent rate of school leavers
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%
6	2009/2010	9,0%
7	2010/2011	9,0%
8	2011/2012	9,2%

Source: Ministry of Education, Children and Youth

Note: The concept of 'school dropouts' applies to young people who leave school definitively without receiving a diploma and who have entered the job market through a professional insertion program or who have no specific occupation. 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.

The policies intended to improve orientation activities and programs for re-integrating education and training will be maintained not only to provide a second chance to dropouts from school but also to contribute to reducing unemployment among the young.

4.4.1.2 Key measures for achieving the national target

a. Reform of secondary education

Multilingualism is a major advantage for teaching in Luxembourg, but it is also an obstacle to successful academic careers for some students. The growing heterogeneity of the student population requires a very supple response in terms of academic offerings if dropping out of school is to be prevented. Emphasis must be placed on oral expression skills in early years and the first cycle of studies. Suitable programmes will be developed to familiarise teaching staff with language learning at very young ages. The possibility of parallel language literacy in French and German for children from other linguistic backgrounds will be examined. German and French are the languages for teaching in primary and secondary school. English is taught in secondary school as a foreign language. In the various stages of school studies, platforms will determine the requirements in the area of skills and knowledge by distinguishing between primary and secondary languages. It must also be determined to what extent the working languages currently form obstacles to learning in primary and secondary education.

b. Insertion and re-insertion measures for young people who have left school

An appropriate guidance effort is essential to steer young people toward success in their training and professional projects. The Guidance Center, which features academic and professional counselling services and information services for studies and for young people, will be augmented and supported by regional branches.

The Second Chance school offering will be developed further in order to offer adolescents and young adults who left school without earning a diploma a training path leading to a qualification, professional training or secondary school studies.

Pilot classes for students with severe behavioural issues provide training and supervision adapted to the needs of the group of students concerned. The objective of this effort is to reintegrate them into the standard educational system after a maximum of two years in the programme.

A "Return to school" pilot project was started for the 2013-2014 year, whose pillars are identifying students at risk of dropping out in intermediate school, providing individualised assistance for a sampling of volunteer high-risk students and specific measures prepared in collaboration with staff of participating schools. In the long term, this project should serve as a basis for developing an early warning system in collaboration with the University of Luxembourg.

During the 2013-2014 academic year, continuing education courses that deal explicitly with lack of motivation and dropping out of students are being offered from the national programme accessible by all teachers in the country.

Increasing qualifications levels through focused studies is an element of the employment and insertion measures offered to young people⁷².

4.4.2 The tertiary education objective

4.4.2.1 National target

The national objective consists of ensuring that **66% of the working population between the ages of 30 and 34 receive university education** and earn university degrees between now and 2020. This objective reflects the economic development of the country, where two out of three new jobs created require a university education.

4.4.2.2 Key measures for achieving the national target

In order to achieve this ambitious objective in the area of higher education⁷³, the government is implementing a reform of the State's financial aid scheme for university studies⁷⁴ alongside reforms in primary and secondary education⁷⁵. This new system will bring about a readjustment of financial aid and will take into account the cost of studies that young people are pursuing, as well as the social situation of beneficiaries and criteria for success. In general, financial aid for university studies is intended to increase the level of training in the population so as to provide better balance between peoples' qualifications and the job market.

Table 15: Changes in financial aid for university studies by academic year

	2002/2003	2008/2009	2010/2011	2012/2013
Number of financial aid grants	6,288	7,910	13,324	15,587
Grants (sums paid out, in €)	7,878,200	12,314,360	83,878,100	98,762,890
Loans (amounts loaned, in €)	38,662,410	48,678,840	87,171,405	102,544,510

Source: Ministry of Higher Education and Research

Note: Loans are stated as amounts granted and not amounts subscribed to by students.

In March 2014, the government submitted a draft law in this area⁷⁶ that recommends a revamping of the financial aid system for university studies. Financial aid components for university studies are still loans and grants, with the latter broken down into different categories: Basic grants, mobility grants and social criteria grants. Basic loans and grants may be increased when tuition is added in. The system guarantees autonomy of students and takes into account their socio-economic group as

⁷² See the "Social Inclusion Objective and key measures for achieving it – the part referring to SNJ.

⁷³ See the "R & D" Objective and key measures for achieving it.

⁷⁴ See the "Early School Leavers" Objective and key measures for achieving it.

⁷⁵ While remaining in compliance with Decision C-20/12 of the European Court of Justice on 20 June 2013.

⁷⁶ Draft law no. 6670 dated 20 March 2014 relating to financial aid from the State for university studies amending amended law dated 4 December 1967 on income tax; and revoking the amended law dated 22 June 2000 relating to financial aid from the State for university studies .

they continue to be part of a household. Student autonomy is guaranteed through the allocation of a basic grant and the possibility to take out a loan under terms currently in effect. In addition, mobility grants promote studies abroad by students that take into account actual costs incurred for renting lodgings. Socio-economic groups are added as criteria for awarding grants based on social standards, the amount of which depends on changes in the multiplier of the minimum wage earned by the household. The social selectivity criterion is complementary to that of student autonomy in the sense that it is based on a parentage aspect. Beneficiaries of financial aid for university studies are in the same categories of persons as those covered by the amended law of 22 June 2000. Nonetheless, the notion of "worker" has been broadened so as to avoid the indirect discrimination pitfall. In order to avoid indirect reverse discrimination, an anti-cumulative mechanism through the receipt of financial aid for university studies in other Member states was extended to all financial benefits available by virtue of registration in a university. The financial aid is moveable in the sense that students are free to choose the location of their studies under the same theory that they are free to choose their specialisations.

4.4.3 Strengthening the human capital base through adult education and training

Participation of adults in formal or non formal education programmes and in corporate training programmes is very high in Luxembourg⁷⁷. National statistics on aid to companies that implement training plans and statistics on registration in courses offered by adult education and the approved communities and associations confirm these results. The national strategy set out in the Lifelong Learning white paper that seeks to connect the multiple existing initiatives and to promote equitable access to them will be progressively implemented in collaboration with the partners involved.

Under the renewed adult education and training agenda, Luxembourg has developed three measures incorporated into the national strategy: Development of basic instruction, focusing on literacy, math skills and digital skills, development of new types of flexible and individualised apprenticeships such as the L4S – Learn for success project and the promoting of the quality and visibility of adult education and training.

In the framework of lifelong learning, particular attention is paid to linguistics training that should support economic development, professional insertion and social cohesion. The measures that have been implemented or are scheduled include:

- Cooperation between ADEM and the Adult Training Service is being intensified with the objective of improving offerings of training for job seekers with basic linguistic deficiencies
- The offering of training in the country's three official languages of Luxembourgish, German and French is being broadened and supplemented by new learning processes that are individual and flexible and reconcile training and employment better.
- For basic instruction, special training is developed in close collaboration with companies.
- The development of a new "Family Learning" programme bringing together children, parents, schools and adult education programmes, which offers different training subjects to parents, such as how schools function, the official languages of the country, reading appreciation and other subjects.

The construction of a new BnL in Luxembourg-Kirchberg was approved by the law dated 18 April 2013. With this building, BnL will rationalise and modernise its operations by grouping all of its collections and services onto a single site. This will increase attractiveness and visibility in the eyes of the public. Strengthening the human capital base and lifelong learning will be driven by the

⁷⁷ See the *Adult Education Survey* (AES) and the *Continuous Vocational Training Survey* (CVTS).

creation of an infrastructure that has sufficient, appropriate and attractive space to increase the directly accessible documentary offer, in paper and digital media, intended for all layers of the population. This documentary offer goes hand in hand with high level documentary and consulting services. All libraries in the bibnet.lu network have available a significant mass of documentation for permanent training for professional or private end use. The primary objectives of public libraries are to promote reading, high quality information, knowledge and culture.

4.5 The social inclusion objective and key measures for achieving it

European Objective: *"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

In the area of horizontal and transversal approaches, all the efforts detailed under the national employment and education objective headings are, together with the measures outlined below, also measures for contributing to promoting social inclusion, particularly by reducing poverty. The government supports the conclusions of the European Council in its objective of promoting social inclusion and reducing poverty through measures that contribute to increasing womens' and single-parent families' rate of employment in order to arrive at a 73% employment rate figure in 2020. Access to employment creates the type of conditions that promote social inclusion and constitute a rampart from which to react against poverty and social exclusion, both for individuals and society in general.

The publication "A look at single parent families" by STATEC illustrates that single parent families are especially exposed to the risk of poverty. In 2010, 46.9% of these households had revenues below the poverty level, while for all households with dependent children, 20.1% of households were at risk of poverty. In 2012, the person of reference in single parent families was a woman in 86.1% of cases. Full-time employment is the most widespread type of activity in general. In 58.4% of households with two adults and dependent children, the reference person has a full-time job, while the percentage of full-time employment among single parent households was only 47.7%, in 2012. With regard to part-time work, in 2012 this was the case for 24.4% of single-parent households, compared to only 21% of households with two adults and dependent children and 4.3% of persons living alone. Of the single family households, the proportion of persons living in very low work intensity households reached 19.7% in 2012, whereas for all households with children, this figure amounted to only 3.9% in 2012. In view of these statistics, three of the four measures take on special importance for women and single parent families.

Through consistency among policies of all NRP measures, Luxembourg aims to **reduce the number of persons under the threat of poverty or social exclusion by 6,000 people by 2020.**

A Steering Committee, made up of representatives of the Ministry of Family Affairs, Integration and the Greater Region, STATEC, the IGSS, CEPS-INSTEAD, the EAPN Luxembourg, the Luxembourg Red Cross and Caritas Luxembourg was set up to assist in building a minimal food basket for Luxembourg. The project objective is to prepare a standard group of consumables that represents the minimum requirements of households in terms of goods and services, defining at-risk of poverty levels in Luxembourg, thus stipulating what precariousness is in Luxembourg.

4.5.2 Key measures for achieving the national objective

Achieving the national objective is supported by the four measures described below, and by measures outlined in the national employment objective. Application of the law on social aid has helped maintain a good performance level for Luxembourg's material deprivation indicator.

a. Continue the policy of providing socio-educational welcoming structures for 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. Indeed, providing a place and education for small children is an effective way to develop the basis for subsequent learning, to prevent leaving school early and to uphold diversity in all its forms. The measure contributes to improving social inclusion of children and social cohesion within a multi-cultural Luxembourg society. It aims at continuing quantitative and qualitative socio-educational welcoming structures for children to facilitate access a job for parents and consequently an income stream. The number of authorized places in socio-educational welcoming structures grew by 8,91 % from 2012-2013.

Table 16: Changes in different types of welcoming structures

Situation as of 31 December 2013	Places in 2009	Places in 2012	Places in 2013	Difference 2012-2013	Increase between 2012-2013
Maisons relais children	18,204 places	30,007 places	31,974 places	1,967 places	+6.56 %
Day care centres, nurseries, registered child care centres	2,104 places	2,056 places	2,079 places	23 places	+1.12 %
Day care centres, nurseries, private child care centres	2,734 places	7,664 places	9,194 places	1,530 places	+19.96 %
Nanny services	1,606 places	2,855 places	3,130 places	275 places	+9.63 %
Total	24,648 places	42,582 places	46,377 places	3,795 places	+8.91 %

Source: Ministry of Family Affairs, Integration and the Greater Region / Professional – Family Life Reconciliation Department (31 Dec 2013)

The national indicator for monitoring the implementation of this measure is the change in number of places in socio-educational welcoming structures for children and the measure has a yearly budget allocation of approximately 197 million.

b. Making beneficiary parents aware of the Guaranteed Minimum Income (GMI) mechanism for using welcome center checks.

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 2,468 at the end of 2013. With regard to these persons, SNAS contributed to an awareness campaign using the welcome center checks through information meetings. Because of communications actions on this subject, the target population for this mechanism has become progressively more aware of it. The regional Social Action Services and their social centres have also participated in the awareness effort since 2011. Where socio-educational structures are not available, the GMI law dispenses with the requirements of seeking work or participating in an insertion activity for persons who are raising a child. The number of exemptions granted for this reason has decreased considerably, by 40% between 2011-2013⁷⁸, an indication of both the increase in number of authorised spaces available and the impact of awareness campaigns directed at the

⁷⁸ 197 households in 2011; 142 in 2012; 119 in 2013.

target audience. In January 2014 some two thousand children were able to receive special benefits under the welcome center checks program, with 76% of these children from households with a guaranteed minimum income and 24% being identified as children exposed to the risk of poverty.

c. Increasing activation rates as part of the RMG mechanism

Activation as a part of the GMI mechanism is one of the pillars of the active inclusion policy on the national scale⁷⁹. Administrative statistics assembled by the SNAS have shown that increases in the number of persons not exempted from professional insertion activities, which has been pronounced since 2007 and slowed in 2012, have increased strongly to reach a new high⁸⁰. In recent years, the number of professional insertion activities has clearly increased⁸¹. Nonetheless, in view of the considerable growth in the number of persons not exempted from PIA during this period, sustained increases in activation have not resulted in maintaining increases in the activation rate since 2009.

Table 1: Activation rate as part of the RMG mechanism (2009-2013)

Year	Percentage
2009	61.5%
2010	62.3%
2011	63.3%
2012	68.9%
2013	61.8%

Source: Ministry of Family Affairs, Integration and the Greater Region

The objective of increasing this activation rate by two percentage points compared to the rate for 2010 through 31 December 2014, was underpinned by greater resources, with the focus on human resources of the regional Social Action Services. The trend indicating incessant increases in the number of persons concerned by this objective, up 80% since 2007, calls for continuing this resource flow to include mid-term results of the NRP, a result that sets out the 2020 objective.

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

The government delved into the problematic of disadvantaged young people through the National Youth Service (SNJ), particularly young people with the NEET profile (Not in Education, Employment or Training) and acted along four lines of approach.

- **Line 1: Develop an activation and information platform**

Since 2012, the ESF has supported adapting the portal to suit the requirements of unprivileged youth⁸². The welcome page of the site was completely revamped and numerous modules and tools were added to make access to the information easier for young people with weak qualifications. These efforts were continued in 2013 and will be pursued through 2015 with the support of the ESF. The following resources were rolled out: an information module on jobs in the form of an interactive game working primarily with images, a "self-evaluation of skills" process and help in preparing CVs while revealing and evaluating individual skills and interests and two DVD-base formats that can be used without being connected to the net. Other functionalities were added and intended primarily for professionals to use when working with disadvantaged youth. These include the revamping of the beruffer.anelo.lu site, the on-line placement of an electronic portfolio with numerous functionalities for young people and for professionals and the production of 40 films of

⁷⁹ For more information on key elements of the active inclusion policy since 1999, see *Rapport Social National 2012 - III.3. L'inclusion active dans le cadre du dispositif d'assistance sociale «Revenu Minimum Garanti»*.

⁸⁰ 2007: 1,288 ; 2008: 1,425 ; 2009: 1,845 ; 2010: 1,987 ; 2011: 2,180 ; 2012: 2,018 ; 2013: 2,329

⁸¹ 2007: 835 ; 2008: 925 ; 2009: 1,134 ; 2010: 1,239 ; 2011: 1,380 ; 2012: 1,391 ; 2013: 1,440

⁸² For more details see: www.anelo.lu

jobs introduced in the *jobcity* game. In 2013, a total budget of 465,000 was invested in developing this portal. Excellent cooperation between partner services of the Guidance Center was carried on, including ADEM-OP, CASNA, CEDIES, CPOS, ALF and the regional branches of SNJ.

- Line 2: Activate NEET youth – the *Level Up* projects

In 2013, projects intended to activate youths with no occupation in terms of training or work were extended. Pilot programmes intended to offer sensible occupations, individual help and event opportunities for international mobility were tested and added to regional information sessions that SNJ has been coordinating since 2010. The results were convincing and SNJ intends to extend the offer into 2014.

Heightened cooperation between partner services involving the Guidance Center, municipalities, youth centres, social services and ADEM departments is carried out on a regional level to reach young NEET persons and their parents. Between August 2012 and December 2013, 1,371 participants in 58 regional and local *Level Up*⁸³ information sessions were registered.

The workshops help youths to make a break from periods of idleness and to get them involved with other young people in exchanges of ideas and talents in creative and manual settings. A recent example of this type of workshop is the *Upcycling* project, which took place in July 2013. Initially, the young people took part in the design, production and marketing of objects created from sub-products and scrap. They tested their skills as designers and entrepreneurs for four weeks, dealing with themes in the working world, through visits to companies, the Guidance Center, etc. The second edition of the *Upcycling* projects will last three months, from January to April 2014. The number of participants is limited to 12 in order to extend greater respect to young people.

The Buddy project involves individual support provided to a young person going through a transition to working life. A working group made up of professionals working with youth and a representative of the University of Luxembourg worked out a concept for this project and a training session took place in November 2013. Beginning in January 2014, young volunteers will be recruited to be trained as guides. Profile matches of guides and subject youth will occur in April and individual monitoring will be conducted by pairs.

An example of a project intended to promote mobility of young people in geographic and intellectual terms is the "Let's go abroad" project, involving a short-term commitment as a volunteer beyond the nation's borders. It is intended particularly for young people who are not yet ready to attempt a long-term adventure on their own. In August 2013, young people were able to go as a group for one month away from home. The young people worked in two different projects in Berlin supervising children and on an environmental project. An on-site mentor supervised the group and handled conflicts and risks that arose. A second edition of "Let's go abroad" is planned for 24 April to 24 May 2014, once again in Berlin.

- Line 3: Increase capacities of the Youth Volunteer Service (SVO)

Maximum capacities of this program have been reached both in terms of host organizations and SNJ supervision services. The 2013 budget was 2,945,000 to accommodate 190 young people in a volunteer programme following an admission interview and an introductory week. With persons having begun volunteer service in 2012, the total number of participants came to 214. At end 2013, 200 young people were on a waiting list for admission to the volunteer service. This leaves a certain

⁸³ Since December 2013, offers for the *Level Up* programme may be consulted online. This mini-site gives a simple presentation of the four areas of activation projects and above all provides an overview of activities already completed and upcoming events. The site is now being reviewed by young people in order to adapt its language to the target population. For more informations: www.levelup.lu

number of young people without immediate options. Activation projects under the Level Up label could alleviate this situation if offerings could be developed considerably.

- Line 4: Get to know NEET youth better

The NEET project, supported by ESF and targeting persons aged from 16-30 who are far removed from the labour market and any training programme, concerns a public policy target population at both the national and European levels. It is vital to support this group of young people in such a way as to give them the means of achieving satisfactory integration into society and the job market. For this reason SNJ seeks to develop better understanding the population of young people in difficulty in Luxembourg; it wants to expand its action and offer measures that are more suitable to the characteristics of these youths. At present, the only information available about NEET is what came out of the LFS. The information provided about NEET is insufficient for two reasons. First, in the age group 16-30, there are few respondents and an in-depth analysis of NEET is not possible. Then, the survey does not address NEET trajectories. From the perspective of the authorities, the problem is not necessarily that at any given moment a person qualifies as a NEET but rather that the person remains in that situation for a more or less prolonged period. To address this, the objective is to create a dynamic database on NEET from administrative data. A survey carried out on a representative sampling of NEET persons will round out this administrative approach, giving us a greater understanding of the target population through cognitive and sociological factors. In 2013, the first phase of the project consisting of a feasibility study on administrative data was begun to determine whether a large scale longitudinal study cannot be carried out in 2014.

e. The Social Aid law

During 2011, the 30 Social Offices gave out a total of 2.53 million in financial aid. An analysis of the financial aid provided revealed that the largest category of aid amounted to 27.69% of the total and went to subsidize housing costs. These figures confirm the high percentage of household budget allocations for housing among households exposed to the risk of poverty. Aid for daily necessities represented 12.71% of the total aid, while 15.65% were used for health costs. Aid allocated for utilities costs represented 9.04% of the total and these costs, coming in on top of housing costs, also make up a major part of household budget expenditures. The measure will be allocated an annual budget of approximately 16 million, 50% of which is furnished by the State and 50% by the communes. This amount includes costs for financial aid to the target population and personnel and operating costs of the Social Offices.

The third party payer system under the law dated 17 December 2010 reforming the health care system entered into effect in January, 2013. The third party payer system is for insured persons officially declared to be in a precarious situation by the competent Social Office for a determined period of time. These persons can claim benefits under the social aid system for direct payment of costs and applicable to services approved in the reference documents of consultations and services of doctors and dentists.

Table 18: Social third party payer system 2013

	2013 temporary account (in euros)
Amount invoiced by service providers	742,190
Amount paid by CNS	627,595
Amount invoiced by CNS to the social administration	95,255
Amount not reimbursed above threshold rate	19,340
Amount paid to social administration by the Health Ministry	27,497
Number of beneficiaries (per social administration)	2,210

Number of patients concerned (per CNS)	1,440
Number of service events	17,937
Estimates (dentures and orthodontic treatment)	43
Number of service providers	1,201

Source: Ministry of Family Affairs, Integration and the Greater Region

f. National strategy to counter homelessness and exclusion linked to housing

In March 2014, a presentation of the status of the implementation of the national strategy was made to members of civil society. In 2013, the national strategy was dealt with in meetings amongst the partners in order to launch the first specific actions. Against this backdrop, the Ministry of Family Affairs, Integration and the Greater Region carried out two censuses of the number of persons lodged at twenty adult accommodation facilities. These accommodation facilities house some 1,350 people, one third each of which are men, women and children. Most of the persons living in the facilities are housed there with social assistance including supervised living, with assistance, 2nd phase, etc., while the others stay in standard facilities, namely emergency shelters only and day/night lodging. Males are the predominant users of emergency shelters, whereas children make up the majority of persons in lodgings with social assistance.

The National Committee for Social Défense, an accredited organisation with the Ministry of Family Affairs, Integration and the Greater Region, started a pilot project in May 2013 under the "Housing First" concept. Contrary to other types of social residence facilities, persons do not need to qualify for various types of lodging, but can move into individual units immediately. Abstinence from alcohol and other addictive substances is not a precondition. The concept is based on the fact that homeless people need somewhere to stay immediately; other issues can be addressed later. Persons concerned are housed in their own units that are secure and guarantee a private area for themselves, yet they can get occasional support suited to their requirements. Regular visits to these peoples' homes are set up, varying from once per month to several times per week. Help in finding work and with administrative and financial issues is offered. The service also encourages persons in this situation to get regular medical attention and support in finding a therapy programme.

The government has also begun preparatory work in setting up a permanent housing structure for long-term homeless persons. The concept behind this type of structure's operation is being worked on now. Physical construction of units is being discussed with the Ministry of Public Works.

In-depth review of the situation of homeless young people is also underway. A conference with workshops and consultations with professionals in the youth sector will be held in mid-June 2014. The 2014 draft budget for this effort amounts to 423,000.

4.5.3 National strategies for integrating Romani as part of the EU

During the first half of 2013, the Ministry of Family Affairs, Integration and the Greater Region, in close collaboration with the Luxembourg Welcoming and Integration Office (OLAI) and a steering committee made up of representatives of the General Inspectorate of Social Security (IGSS), STATEC, the CEPS-INSTED, the Commission on Human Rights and the National Council for Foreigners, and with an independent consultant, finalised a study on the situation of the Romani who are legally present on Luxembourg's territory. The purpose of the study was to verify equality in treatment of Romani in the areas of housing and employment, education and health care compared to the rest of the population⁸⁴.

⁸⁴ This study may be downloaded from the Ministry of the Family, Integration and the Greater Region: <http://www.mfi.public.lu/publications/Solidarite/DocumentReflexionStrategieNationaleIntegrationRoms.pdf>

5. Use of Structural Funds

5.1 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 finances under Structural Funds programmes must contribute to achieving Europe 2020 objectives. With regard to the FEDER 2007-2013 Regional Competitiveness and Employment programme (RCE), efforts to support European objectives and national objectives determined by Luxembourg have been made, particularly from the Priority 1-Objective 1 and Priority 2-Objective 3 standpoints. The RCE FEDER programme represents total public eligible commitments and investments of 82,000,000, of which 21,000,000 in Community funds amassed during the programming period of 2007-2013 concerning the above priorities of the Luxembourg NRP and the Europe 2020 Strategy. These investments, in line with NRP objectives, correspond to 87.5% of the FEDER CRE envelope for Luxembourg for the programming period of 2007-2013. In this way, 46 Priority 1-Objective 1 programs were co-financed in the area of research and innovation by FEDER in the amount of 14 million and 12 Priority 2-Objective 3 projects in the area of renewable energy in the amount of 7 million.

The themes and programmes for European Territorial Cooperation were hammered out on the basis of the Europe 2020 strategy. With regard to the trans-national and inter-regional projects slated for Luxembourg participation that were approved by the INTERREG A, B and C programmes, the main areas of intervention with relation to the NRP are in R&D innovation with thirteen projects under FEDER in the amount of 2.6 million, and Climate Change and Energy areas of climate, environment and transportation, with nineteen projects garnering total FEDER grants of 4.2 million, an amount approved in favour of the Luxembourg partner.

5.2 Financing priorities for the period 2014-2020

The FEDER managing authority, under recommendation by the European Commission, recommends concentrating on a limited number of priority areas under the common strategic strategy for 2014-2020. Dialogue took place with the Commission on this subject and a pre-agreement was obtained on the basis of two priority areas focusing on thematic objectives No. 1 "*Strengthening research, technological development and innovation*" and No. 4 "*Supporting the shift towards a low-carbon economy in all sectors*". In addition, it has been decided to use an Integrated Territorial Investment (ITI) based on themes in the two areas in compliance with regulations and sustainable urban development concepts. The areas of intervention recommended by Luxembourg are consistent with the European Commission's position and will take into account its recommendations and ensure continuity with the current programming period, which is already in line with the Europe 2020 strategy.

European Territorial Cooperation programmes for 2014-2020 are already in development. The themes relevant to the Europe 2020 strategy selected for the INTERREG North-West Europe trans-national programme with a FEDER budget of 396 million are the following: Innovation, Low carbon emissions and Effective use of materials and resources. The themes relevant to the Europe 2020 strategy selected for the INTERREG Europe inter-regional programme with a FEDER budget of 359 million are the following: Strengthening research, technological development and innovation, Improving competitiveness of SMEs, Supporting the shift towards a low-carbon economy in all sectors, Protecting the environment and promoting the rational use of resources.

6. Institutional issues and the role of stakeholders

6.1 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, 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 reconversion projects in Belval-Ouest and Mersch, the State-Municipality cooperatives that target an equitable and simultaneous assimilation of essential requirements to development of cities and urban areas, through cooperation between the State, local actors, inhabitants and economic players through a multi-sector approach, as follows:

- The primary objective of the Sector Housing Master Plan (PSL) is to stimulate construction of housing, placing particular emphasis on urban centres that are connected to collective transportation and other public services. It determines growth in the number of housing units, greater in urban communities than in rural ones. Minimum and maximum housing density is then determined for each municipality depending on its category. The primary instruments for implementing this are the General Development Plans (PAG) and the Specific Development Plans (PAP). In order to avoid poorly organized local development, all communities must set the limits of their priority urbanization areas. In addition, the PSL includes a reserve of some 500 hectares of land to be acquired by the authorities for large-scale residential projects that meet specific social and environmental criteria, so as to keep the shortage of affordable housing to a minimum. Housing built under this programme should accommodate up to 44,000 persons.
- The Transportation Sector Master Plan (PST) describes projects and measures pertaining to transportation policy that require regulatory framework. It determines legal instruments for implementing a management system for parking in all urban areas and for promoting soft mobility. The PST also sets aside land for new transportation infrastructure and sets priorities that relate to major infrastructure projects in the area of transportation, with the emphasis on public transportation.
- The primary objective of the Economic Activities Master Plan (PSZAE) is to shape economic development by incorporating territorial development objectives into planning. Some 550 additional hectares are set aside for development of artisan and industrial activities from now to 2030. The PSZAE determines national and regional economic activities zones and gives priority to extending existing zones, makes communities responsible for changing certain zones unsuitable to economic development to other uses and sets strict ecological criteria that is aligned with national territorial development objectives for new economic activity zones.
- The Sector Landscape Plan (PSP) provides a landscape planning and management framework in order to preserve the quality of such areas as well as quality of life and ecosystems. In addition to these conservation areas, it provides guidelines for development in rural areas and sets up green belt between urban areas to limit urban sprawl.

The law dated 30 July 2013 on territorial development introduces the instrument for drawing up agreements between the State and municipalities, with the objective of providing legal instruments to improve the implantation of territorial development measures. Consultation procedures were simplified and accelerated by means of simultaneous talks between several entities. In addition, the State's right of refusal was extended and the law of eminent domain modified to limit conditions propitious to speculation. The modification stipulates that prices

applicable to all real estate holdings likely to be acquired through eminent domain procedures shall be set one year prior to the date of publication of a government Council decision to transmit the draft Master Sector Plan to the municipalities concerned and adjustments applied subsequently may not exceed overall changes in price for land.

6.2 Assimilation on the national level

The government is emphasising a transparent and active information policy and intends to revive the social dialogue that has long been the strength of the country and is a central element of the Luxembourg model. Some examples of this appear below:

- In March 2014, the government invited representatives of the social partners and NGOs to consult on the national objective for social inclusion.
- An exchange of good practices occurred in a regional perspective, as part of the European *EU2020 Going Local* project⁸⁵, to which Luxembourg is a partner. The government offered to set up a methodology workshop⁸⁶ in 2014 on the issue of "taking responsibility based on results" and to refer to the Swedish NRP that includes regional and local contributions, in addition to contributions from social partners. This structured manner for proceedings facilitates clarification of roles and activities and can provide supplementary transparency as well as the participation of social and territorial partners.
- The Economic and Social Council (ESC) is the cornerstone of social dialogue in Luxembourg, because it is the centre of permanent social dialogue and has an overall dimension. The government invited the ESC to express its viewpoint with relation to policies and responses to be submitted to Community authorities under the European semester.

6.3 Communication

Diverse studies have shown that the resistance that forms to structural reforms is linked to the fact that uncertainty regarding expected future benefits of reforms is often greater than the uncertainty regarding costs incurred. The government attaches particular interest to this challenge and intends to pursue its efforts.

Progress achieved as part of the implementation of the Luxembourg 2020 strategy should have effective follow-up, reporting and evaluation processes. Diverse structural indicators used as part of the Lisbon strategy had a tendency of not taking adequate account of the specific circumstances surrounding Luxembourg, and diverse key indicators of the Europe 2020 strategy still pose a problem. The Tripartite Coordination Committee considered that it would be opportune to publish a "Competitiveness scoreboard" on an annual basis. The latest version of this publication by the Observatoire de la compétitivité was in October, 2013, providing a detailed update of Luxembourg's position relative to the other EU Member countries⁸⁷.

⁸⁵ For more details see: www.eu2020goinglocal.eu

⁸⁶ For more details see: www.resultsaccountability.com

⁸⁷ MINISTRY OF THE ECONOMY AND FOREIGN TRADE, *Competitiveness Report 2013, Perspectives de politique économique* n°27, Luxembourg, October 2013. http://www.odc.public.lu/publications/perspectives/PPE_027.pdf



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