



**EnEf**  
**Energy Efficiency in the Building Sector:**  
**A Sustainable Future**

**REGIONAL REPORT - ITALY**  
**The construction sector in Lombardy**



Education and Culture DG

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## **1 PROFILE OF THE REGION**

### **1.1 Introduction**

Lombardy (Lombardia) is a region in northern Italy between the Alps and the Po river. Its land includes high peaks, hills, lakes, rivers and plains. Lombardy's capital is Milan.

Lombardy is one of the richest regions in Europe, with a Gross Domestic Product per capita much higher than the rest of Italy. Lombardy is not only a centre for business, finance and industry: it has also artistic and natural resources.

Lombardy is 23.859 km<sup>2</sup> equivalent to 7,9% of Italian territory; 9,4 million people live in this region, equal to the 15,8% of Italian population and the density is 374 people per km<sup>2</sup>, about the double of the other most populated areas. It is the most populated Italian region and bigger than other EU countries as Sweden, Austria, Denmark, Finland, Ireland, Luxemburg.

Accordingly, the administrative system is divided in 12 provinces: Bergamo, Brescia, Como, Cremona, Lecco, Lodi, Mantova, Milano, Monza, Pavia, Sondrio and Varese.

The centrality of the Region within the European context is demonstrated by its position in the centre of the area bounded by the 5 Lisbon-Kiev corridors and by the Genoa-Rotterdam and Rome-Berlin north-south routes. Milan and Lombardy can thus count on a demographic basin and a totally central position in the European continent.

### **1.2 Economic Analysis**

According to Eurostat News Release 28/2011 (28/02/2011), Lombardy GDP, at current prices (2008), amounts to 328. 222,5 million of euro, approximately 20.9% of Italian GDP, which is equal to 1. 567. 851 million of Euro. GDP per person in the region in 2008 was EUR 33.900 euro, against 26.200 of Italian average with an increase of 0,68% over the previous year. Over the past five years, the trend of regional GDP was very variable, showing a peak of growth (2%) in 2001 to reach the minimum (0.1%) in 2003 and climb slowly from 2004 onwards. The actual employment rate in Lombardy in 2008 was more than 4 million: 63% employed in services, 36% in industry and the remaining 1% in agriculture. The regional employment rate was 66.6% in 2008: 76.4% male and 56.5% female. Women's employment, as increased in recent years thanks to social policies of local and national levels is not yet at the same level as the north

European countries (> 60%) (level reached only by Emilia Romagna in Italy with 62%) and stood at 59.4% in 2006. The percentage of women directors has doubled from 1992 to 2008 rising from 12% to 20.8%. The regional unemployment rate was around 3.7% in 2008.

DOMESTIC GROSS PRODUCT PER SECTOR – 2009			
Economic sectors	DGP (in Million/€)	% DGP OF SECTORS	% DGP OF SECTORS IN ITALY
Agriculture, fishing	2.981,6	0,98%	1,84%
Industry	75.983,2	24,87%	18,30%
Construction	15.455,9	5,06%	5,41%
Trade, hotels, restaurants, transports	61.554,8	20,15%	20,54%
Financial activities, real estate	80.828,6	26,45%	24,17%
Other services activities	39.699,0	12,99%	18,97%
Added value tax, import taxes	29.047,2	9,51%	10,76%
<b>Lombardy – domestic gross product</b>	<b>4.059,8</b>		

### 1.2.1 Main economic sectors

Lombardy's economy is characterized by a variety of areas in which it is developed. They range from traditional sectors, such as agriculture and farming, heavy industry and light, but also the service sector had a strong development in recent decades. Agriculture was the basis of the Lombardy region's economic development. First was hit by the process of mechanization and restructuring. Mechanization, through the use of increasingly complex machinery, has led to increased agricultural production and the restructuring of the territory, through the construction and modernization of canals and drainage of wetlands has improved the quality of agricultural production. Agriculture in the region focuses on the production of cereals (corn, soybeans, wheat), vegetables, fruit (pears and melons) and wine. More developed and fodder production, used for cattle and pigs.

The industry is dominated by small and medium-sized, mostly family, but also by large companies. It is flourishing in many areas, particularly those in mechanical, electronic, metallurgy, textile, chemical and petrochemical, pharmaceutical, food, publishing, footwear and furniture. Milan and the province cover over 40% of companies in the Lombardy. In the services sector, significant is the weight of trade and finance. In Milan The Italian Stock Exchange are located between the major European financial centres, and the Fair of Milan, which today is the largest exhibition space in Europe. Also important are the banking, transport, communications and business services. Tourism (art cities, mountains and lakes) has an increasingly significant weight.

### 1.2.2 Industrial context

20% of Italian GDP and more than 3% of UE GDP are produced in this region: it is at the same level of the Belgian gross domestic product and overlaps those of Austria, Denmark, Finland, Greece, Ireland, Luxembourg, Sweden and that of the new countries of the last enlargement (the new members who joined EU in 2004 and 2007). Lombardy is thus an important area both in demographic and in economic terms, with a good level of productivity, low unemployment and high wellbeing standards.

Service sector has a predominant role and reaches the 62,4% of the regional GDP, followed by industry with 35,8% and, in the end, agriculture with only 1,8%. This region is the driving force of Italian economy, with a 36,1% of imports and 28,5% of exports<sup>1</sup> and in the period between 1996 and 2003 the regional added value raised as the annual Italian average of 1,4%. The gap with the other Italian regions is more prominent in industry and in the high technology sector in particular, whereas in service the rise of productivity is less strong. Moreover the decrease in exports competitiveness caused a reduction of the market share from 1,5% to 1,2%.

At the end of 2008, 183 banks had their offices in Lombardy (about a quarter of total in Italy): in fact, in contradiction with general trends, between 1999 and 2005 their number raised of 11. On the contrary, the number of finance companies is 489. It's clear from those data why Milan is the economic and financial Italian capital.

According to the last census, Lombardy has more than 750.000 firms, 35.000 public institutions and non-profit organizations, 850.000 factory units and about 3,9 million of employees, 20% of Italian total employment.

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<sup>1</sup> The gap of exportations between Lombardy and the other Italian regions is wide: Veneto 13,4%, Emilia Romagna 12,6%, Piemonte 10,7% and Toscana 7,3%.

About a third of Lombard employees works in manufacturing sector with 1.216.823 people (i.e. 31,2%) and about two fifth belong to industry sector with 1.528.906 people (i.e. 39,2%).

In the last decade employment has raised significantly whereas the activity rate has been 68,3%, which is the higher in Italy. The unemployment is 4,1%: it is lower than both the national rate and the rates of other comparable areas with the same development.

Although Lombardy has the national leadership for industrial expense in R&D (Research and Development) and patents per year (in high technology sector in particular), its investments level in R&D compared with the GDP (1,25% of GDP) is only a bit more than the national average (1,16%) and lower than that of Lazio, Piemonte, Liguria and Emilia Romagna. In any case those ratios are far from EU target of 3%. The role of driving force of this region is clearly shown in the industrial R&D: one third of Italian expense in R&D is made by firms, three quarters of the whole regional expense in R&D are private and use 0,9% of regional GDP (the national average is 0,5%).

Lombardy is also the first Italian region for the number of submitted patents: 1612. They are preponderant in industrial process, but in other specialized sectors (as electronics, chemical and physics) they are lower than the national average.

In any case, Lombard system is focused on sectors with low investments in R&D and it lacks of high technology and high specialized firms. However, important academic institutes as San Raffaele, University of Bicocca and Politecnico of Milan have reached significant results in biotechnology thanks to the collaboration with Lombard firms of that market sector.

So, in comparison with other EU regions of comparable development level, Lombardy suffer a delay in education issue, expense in R&D and innovation capability.

21 industrial districts exist in Lombardy: 9 specialized in textile and clothing sector, 7 in engineering production, 3 in woodworking, 1 in rubber gaskets and 1 in toys sector. Textile, clothing and footwear sectors are in crisis: between 2001 and 2004 more than 2.300 enterprises have closed, with the lost of about 44.000 workplaces, and this trend has continued in the next years. In this sectors the competition of developing countries is strong and obliges Lombard entrepreneurs to reorganize their firms and to specialize in high quality products.

The following districts are important because of their specificity. Gallaratese (Varese's province) has 2.900 textile enterprises, 27.000 employees, a turnover of 2.700 million Euro and an export rate of 40% (11% of the whole Italian textile exportations and 3% of Italian exports). Brianza-Cantù-Como (Como's province) has 6.500 firms with 30.600 employees and an exportation rate of 25%,

with the Brianza famous to be the oldest district of Italian furniture in Italy. Castel Goffredo (Mantova's province) is the most important district of hosiery in Italy and makes the 70% of Italy's production, the 60% in European Union and the 30% in the world. Como silky district has 1.000 firms, 18.000 employees and an export rate of 42%. Grumello del Monte (Bergamo's province) has 150 firms, 2.000 employees, a turnover of 250 million Euro and 40% of exportation rate. It is a district specialized in button sector and makes the 60% of button national production. Lecco is important for two districts. The first is based on metalworking, it has 1.627 enterprises, 21.340 employees, a turnover of 2.000 million Euro and a 30% of export rate. The other Lecco's district concerns 170 firms, 3.400 employees, 750 million Euro and 60% of the exportation rate. Lumezzane (Brescia's province) has a district with 2.000 firms, 20.000 employees, 2.000 million Euro and an export rate of 60%. Milan design district (Milan province) is a design worldwide area of excellence for planning resources and design services for enterprises and employs 46.054 people. Finally, Brescia area has 3.291 firms and 33.524 employees in the metal manufacturing, machineries, mechanical devices and metallurgic products.

Finally, Lombardy exports mainly in Germany, France, Spain, United States, United Kingdom and Switzerland.

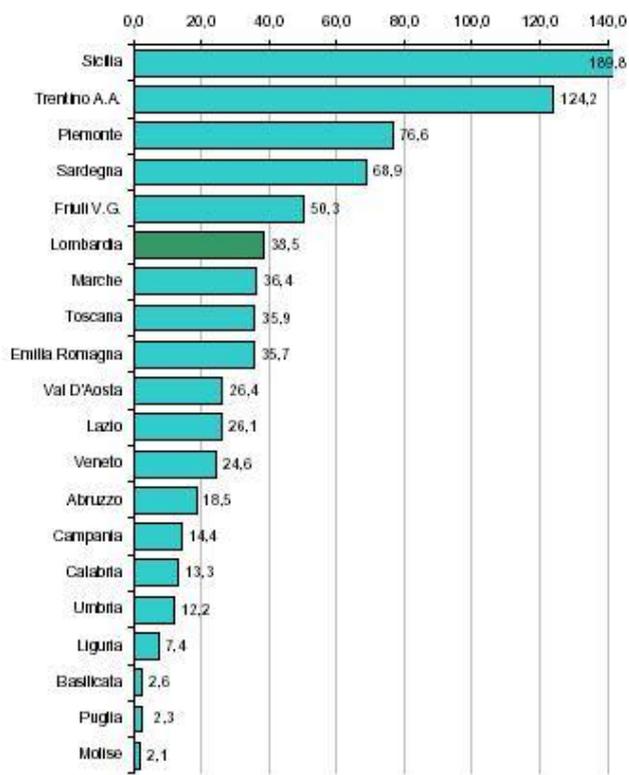
### **1.3 Social & Cultural Aspects**

Lombardy is often on the top of rankings in many important political and economical issues, but this is not true from a Cultural point of view. In this case, Culture entails a wide meaning linked also to the possibility to enjoy genius and artistic works.

If Lombardy's data are compared with those of Italy, this region is seen as an example of good management and government, but if a deeper analysis is made and if simply a different perspective is used, it will be possible to discover a different situation.

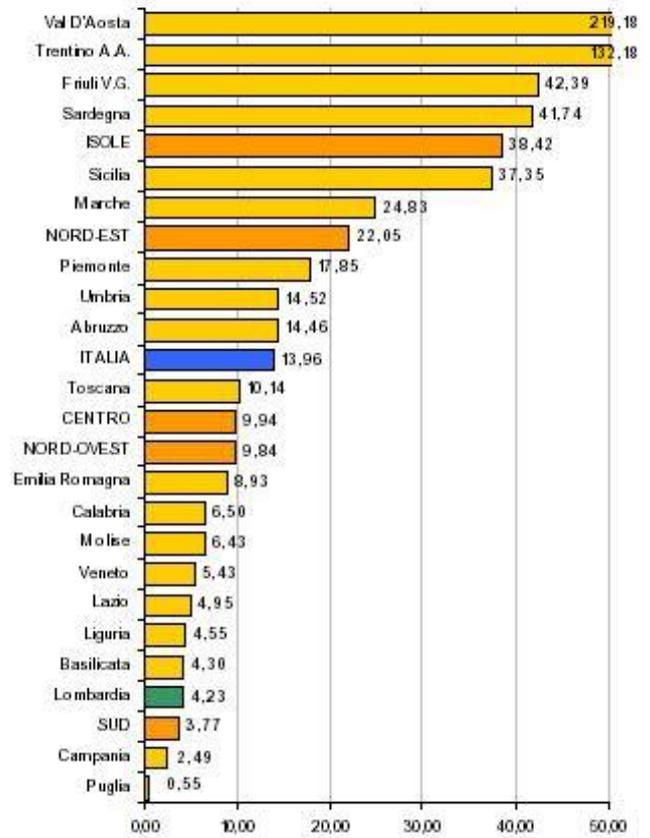
As it is possible to see in the following tables, regional expenditure for Culture is high and it is on the fifth place in Italian regional ranking. However, the trend is totally different if regional expenditure is compared with the number of inhabitants: Lombardy falls down to the last position only higher than the south regional average, Campania and Puglia. Indeed, the difference between Lombardy and Valle d'Aosta (the first region in the ranking) is considerable.

Table 1. Italian Regional Expenses in Culture (Million Euro)



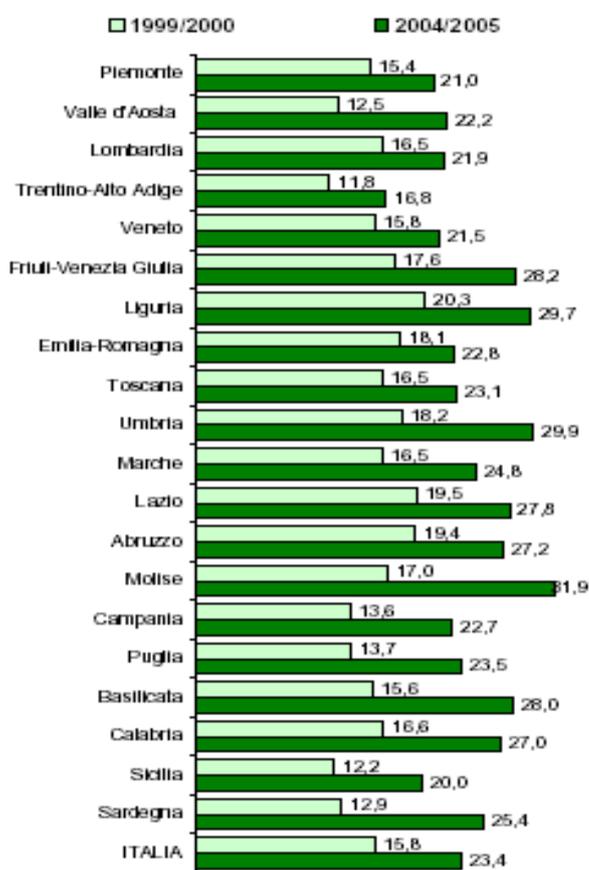
Fonte: Bilancio Regioni (dati forniti da Associazione Economia Cultura)  
 Rielaborazione dati: Regione Lombardia, D.G. Culture, - Osservatorio Culturale -

Table 2. Italian regional Expenses per inhabitant (Euro)



In order to understand the level of Lombard education, it is important to analyze the percentage of graduates: it is smaller than the national level and higher only than those of Piemonte, Trentino-Alto Adige, Veneto and Sicilia. Lombardy is in the lower part of the ranking but, in this situation, the gap is not so wide. Moreover the increment of Lombard graduate people from 1999 to 2005 is lower than other Italian regions as Friuli-Venezia Giulia, Umbria, Lazio, Liguria.

Table 3. University Education: Graduate per 100 people of 25 years old



The theatrical production is very good, copious and appreciated not only in Lombardy but also in the other Italian regions. However, the number of sold tickets per a hundred thousand inhabitants is just a bit bigger than Italian average and about half of Lazio's amount. The situation of the number of sold tickets per show is worst: the amount is smaller than the Italian average and bigger only than Friuli-Venezia Giulia, Molise and Sardegna.

Table 4. Sold ticket per 100.000 inhabitant

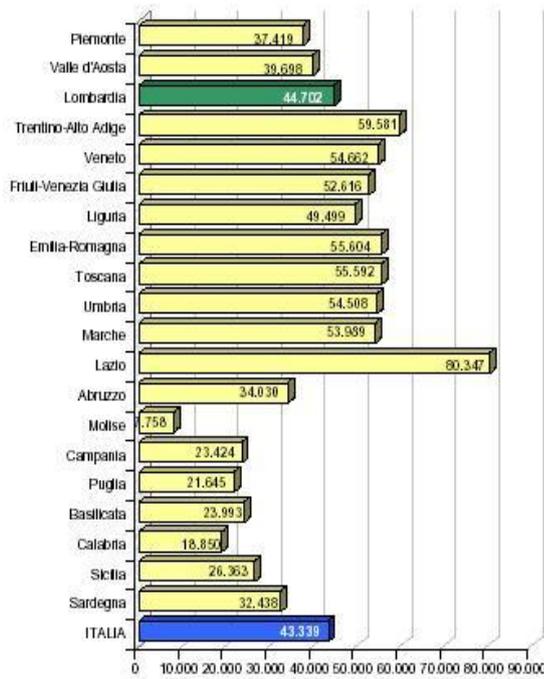
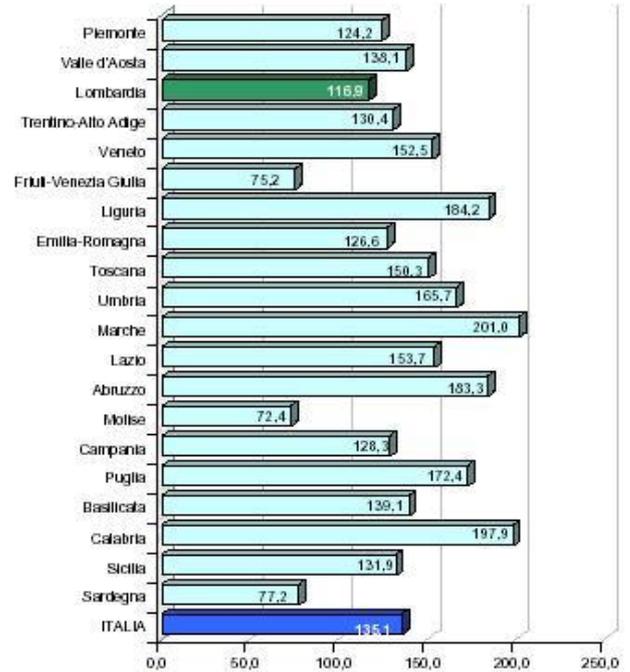
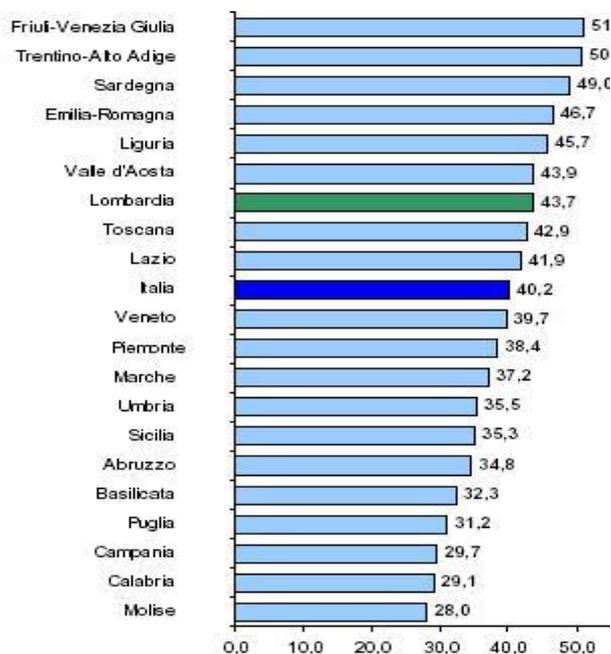


Table 5. Sold ticket per show



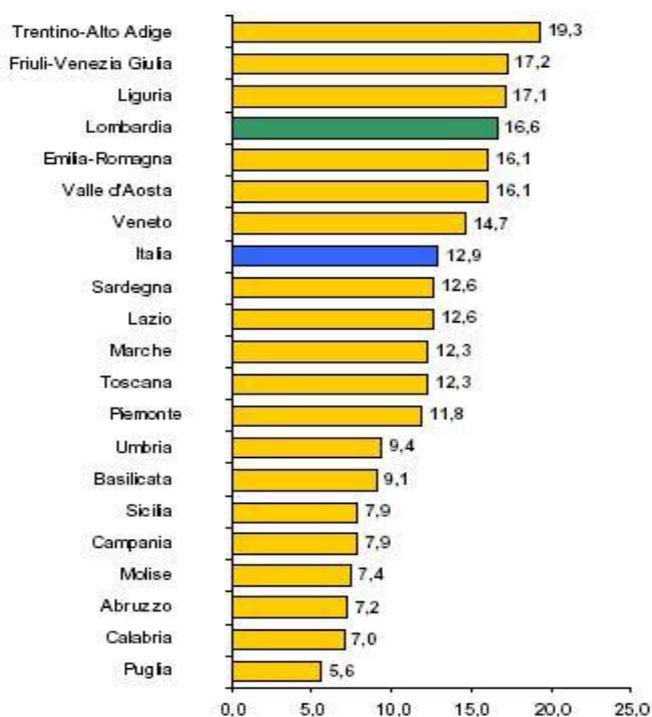
Lombardy is the Italian publishing core and it is on top of the ranking for readers of newspapers and books. Seven regions (Friuli-Venezia Giulia, Trentino-Alto Adige, Sardegna, Emilia Romagna, Liguria, Valle d’Aosta) have a higher percentage of newspapers readers, whereas only Trentino-Alto Adige, Friuli-Venezia Giulia and Liguria have a bigger percentage of books readers. In both cases Lombardy has a higher level than Italian average.

Table 6. Newspapers readers per 100 people (of more than 6 years old)



Fonte: ISTAT - Indagini Multiscopo sulle famiglie " Aspetti della vita quotidiana  
Rielaborazione dati: D.G. Culture - Osservatorio Culturale

Table 7. Books readers per 100 people (of more than 6 years old)



Lastly, the number of visitors in museums per 1000 people is smaller than the Italian average and, accordingly, the amount of takings is lower.

Table 8. Visitors in public museums, monuments and archeological sites per 1000 inhabitants

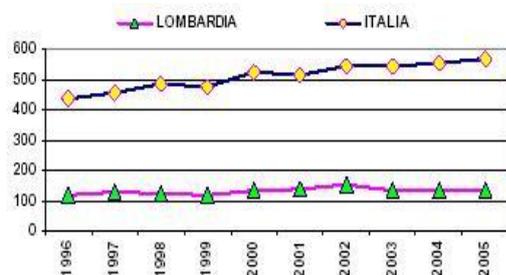
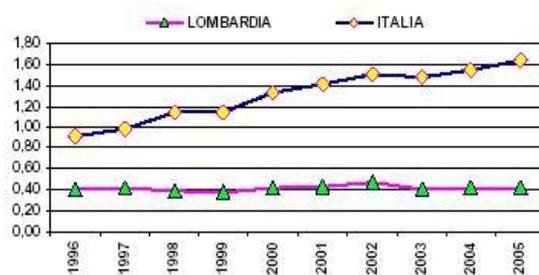


Table 9. Takings of public museums, monuments and archeological sites per inhabitant



Lombardy has big and unexploited possibilities and capabilities which would attract higher interest and participation if they were used. However, according to Massimo Zanello, Regional Councilor on Culture, Identity and Autonomy in Lombardy, the region has invested in cultural heritages also by renovating, recovering and achieving “cultural rooms”. In order to complete that plan, they have to give contents to these rooms and to make them interesting and formative.

#### **1.4 Regional Grants supporting SMEs development**

Lombardy provides important help to small and medium enterprises (SMEs) through financial grants in order to support competitiveness, to increase their investments and to decrease the investment risks to the banks.

- The oldest and most used grant is focused on the Law 28 November 1965, number 1329, also known as Sabatini. It has been developed during the decades, but the core continue to be the same. It is based on a grant on the interests in order to decrease the interest rate. In Lombardy the grant is half of the interests amount made by the rate of Community Financing. It can be used only to buy new machineries.
- Fondo di Rotazione per l'Imprenditoria (FRIM) is a group of instruments created to induce innovation, development, dimensional growth, enterprise move. It consists of a reduction of interest rate on a part of the financing (35% with a tax rate of 0,5%, 35% with a tax rate of 1,5% and 30% is decided by the bank).
- Fondo artigiano is addressed to the handicraft business and it is a group of important and good measures for concessional credit, investments and financial assistance.
- Other important financial helps are tax breaks for R&D activities on two national taxes: IRES (which is a corporate tax) and IRAP (which is a regional tax on productive activities). There is the possibility to have a tax credit with the IRES, whereas, in the case of IRAP, firms have a tax reduction.
- Reduction of interests rate for business internationalization are provided by Lombardy and mainly by the state.

Taxes in Lombardy are 40% higher than the national average. In the last years taxes were about 1.576€ per inhabitant, whereas Lazio's tax burden was 1.662€, in Piemonte 1.571€, in Valle d'Aosta 1.483€, in Emilia Romagna 1.472€, Toscana 1.400€, in Veneto 1.357€. Basilicata (767€), Calabria (773€), Campania (864€) and Sicilia (696€) are lower than the Italian average.

The administrative division underlines how the tax burden is focused on the regional (825 €) and municipal level (346 €), whereas provinces have a small role with only 77 €.

**REGIONAL GROSS PRODUCT AND REGIONAL GROSS PRODUCT PER PERSON 2000/2008**

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
<b>Regional gross revenues</b> (Million/euro)	246.700,0	259.431,0	270.653,3	279.450,4	289.334,1	293.905,8	305.550,4	320.620,9	326.130,5
<b>Regional gross revenues/ person</b> (Million/euro)	27.452,2	28.765,6	29.836,9	30.448,8	31.044,8	31.153,6	32.126,7	33.419,2	33.647,7

## **2 CONSTRUCTION SECTOR IN LOMBARDY**

The construction industry, particularly during the last decade, was able to provide a fundamental contribution to GDP growth and support of regional employment dynamics notwithstanding the uncertainty of global markets.

The sector concerns 137.000 construction companies, which account for more than 17% of the total of Lombardy, as well as a series of productive and service sectors that have close relationships with the construction supply chain: manufacturing, mining and other related services. The weight of the construction sector, thereby reaches a significant share of 53% of the total 260 thousand companies of the region.

This result is certainly due to the high incidence, in the construction industry, of small and micro enterprises and companies, owned by only one person, as evidenced by the limited weight of the construction industry as a whole in terms of employment, as well as the high incidence of the number of independent workers comparing to the the total workforce in the sector.

The small enterprises engaged in building renovation and maintenance account for 42.4% of the total, while those working on installation of technologic systems and services account for 23.4%. More structured, usually, are the companies engaged in the construction of new buildings and public works, representing about 33% of the total construction companies, but employing more than two-thirds of the total workforce in the sector.

### **2.1 Economic impact of the construction sector**

The construction sector is one of the driving forces of the Italian economy, from the point of view of both production and occupation.

About 28% of the people occupied in the industry works in the construction sector (1.913.00 people), which corresponds to 8, 5% of all occupied citizens. Between 1998 and 2006 the investments in the construction sector rose by 23,8%, while in the same period national GDP rose by 10,7%. In the same space of time the number of occupied people in the construction sector has largely increased by 27%, while the labour market in general showed an increase of only 10,7%, a very important result for the building industry.

Nevertheless, the construction sector, starting in 2008 went through a particularly difficult period due to the international economic crisis, which hit the building industry very hard. As shown by the data listed in this document, the positive trend registered until 2006 came to a stalemate in 2007/08.

## 2.2 Overview of the construction sector in Lombardy

### 2.2.1 Investments

In the framework of the Lombardy economy the construction sector is of great importance and it is possible to say that until 2006 it registered a very positive trend. According to ANCE (Builder National Association) and ANCE Lombardia (its regional branch), investments in the sector represented 7,7% of the regional GDP. Between 1999 and 2006 investments rose by 24,4% while regional GDP increased by 9,6%. The same positive trend affected the occupational level of the sector, which increased by 34% in the period 1999-2006.

ANCE esteems that in Italy in 2010 there have been a reduction of 6,4% of the investments in the construction sector, comparing to the data of the previous year, a reduction which has to be added to the -7,7% in 2009 and -2,7% in 2008, while the decrease foreseen for 2011 is 2,4%. Summarising those data, in four years (2008-2011), the Italian building industry lost 17,8% in terms of investments.

In Lombardy the situation is slightly better: in 2010, the contraction was 4,4%, -9% in 2009, -1,1% in 2008, while the foreseen decrease for 2011 is 0,7%. In the last four years the construction sector in Lombardy lost 14,7%, with peaks of -26,3% in the case of new housing buildings.

Investments in construction in Lombardy

	2010 Million €	2008	2009	2010	2011 (forecast)	Four-year 2008-2011
	Variation %					
CONSTRUCTIONS	23.453	-1,1	-9,0	-4,4	-0,7	-14,7
Residential buildings	13.420	-1,3	-10,5	-1,8	0,0	-13,2
New buildings	5.603	-3,0	-18,0	-5,4	-2,0	-26,3
Maintenance and recovery	7.827	-0,4	0,5	1,0	1,5	2,6
Private non residential buildings	6.679	-1,0	-5,5	-5,3	-0,5	-11,8
Public non residential buildings	3.344	-2,9	-6,2	-12,4	-4,3	-23,6

Source: Ance Lombardia – Rapporto congiunturale sull'industria delle costruzioni in Lombardia

Data confirm, also in 2010, the positive appreciation of Lombard families for the incentives related to recovery and maintenance of buildings: in the first eleven months of 2010 the number of families requesting access to tax relief for renovation of buildings was 106,192. Compared to the same period last year there was an increasing of 12.2% (+10.3% nationally). In Lombardy, the value of investments in housing recovery and renovation increased by 1, 0%.

### 2.2.2 Public Finance

With regard to the operation of public finance, in 2011 we are witnessing a reduction of 18.4% of the resources earmarked for new infrastructure and a decrease in the 2009-2011 period, approximately by 34%.

In addition to the decrease in funding for new infrastructure it is worrying the long delays that are experiencing both large and medium/small construction sites (such as school buildings, landslide risk). Those are interventions financed long time ago by CIPE (Trans Ministerial Economic Committee), but which are still blocked due to the lack of cash resources.

As for public funding, it is of relevance the award of Expo 2015 to Milan, which is a major opportunity for the revival and development not only for the capital of Lombardy and the region but also for the whole Northern Italy area in the coming years. The infrastructure program related to the big event provides, so far, 26.478 billion investments, divided in essential works (15.032 million euro already partially financed) and necessary works (11.446 million euro, not financed yet). In the first category are included actions to be achieved by September 2014, to meet the commitments made in the application.

The boost of the Universal Exposition may finally reactivate the construction sector and the regional economic system as a whole. Four years before the big event it is hoped that there will not be any further delay in the schedule for the main works, due to the problems that the company Expo 2015 in encountering in the availability of the areas selected as exhibition sites.

### 2.2.3 Occupation

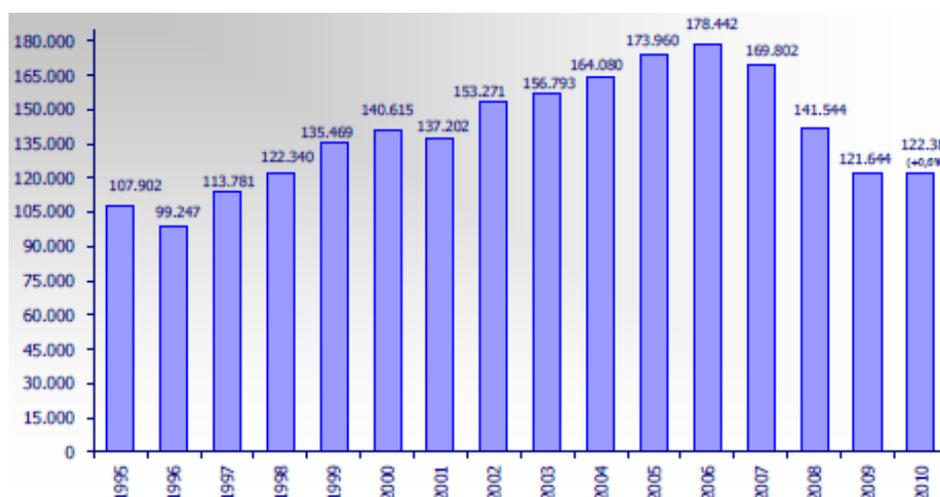
From an occupational point of view, the data provided by ISTAT (Statistic National Institute) show that in 2010 the sector in Lombardy gave jobs to 334.00 people, 22,8% of total occupied in the industry sector and 7,8% of all workers in Lombardy. Comparing to 2009 the number of occupied in the construction sector registered a drop of 3,3%. From the beginning of the crisis (4<sup>th</sup> quarter of 2008) to the end of 2010, about 46.000 workplaces have been lost. Data show that the enterprises of the sector are trying to maintain occupation notwithstanding the reduction of the market, also

recurring to instruments like Cassa Integrazione Guadagni, a fund provided by the Italian Law aiming to support workers in redeployment.

## 2.2.4 Real Estate Market

In 2010, the Lombard real estate market appears stationary for the number of housing units exchanged (+0.6%), after a sharp decline (-31.8%) that had characterized the previous three years. The result of 2010 is attributable entirely to the good performance of the provincial capitals which registered a 4.9% increase on an annual basis; in other municipalities, on the contrary, residential transactions continue to decline, although at a much slower rate than in previous years (- 0.6% compared to 2009)

Housing buying and selling In Lombardy



Source: Ance Lombardia – Rapporto congiunturale sull'industria delle costruzioni in Lombardia

In non-residential real estate market it is still evident a decrease in the number of units exchanged: in 2010 the total trading of real estate for commercial, production or tertiary use, decreased by 6.5% year on year to be added to the reductions already registered in previous years. As a whole, between 2008 and 2010 the decline was 34% (compared to 30% national average).

## 2.2.5 Critical aspects

Despite the decline in investment, the industry has confirmed the strategic importance that the sector plays in the regional economic situation both in terms of investments, which constitute 7.4% of GDP of the region, as already mentioned, and in terms of employment.

Although the weight of the sector remains substantial in the economy of Lombardy and for occupation, it is obvious that there is still a reduction of private and public demand, which

substantially limits the investments in construction. But the overall difficulties that the sector is going through can be also attributed to other causes:

1. First of all, the delay of payments by public bodies: almost half of the construction companies is delayed more than 4 months after contract terms (with peaks in the North West of the country, exceeding the two years) and this has caused, inevitably, a very negative impact on the companies' accountings.
2. The observance of the internal "Stability Pact" in Lombardy has not allowed in 2010 any mitigation, while in 2009 the region had released payments for 40 million euro. The prospect for 2011 of a significant reduction in new investment and delays in payments from local authorities would be even more severe in the absence of a regionalization of the Covenant.
3. In addition, there are financial obstacles the companies are facing: the "credit crunch" made by the banks is, in fact, blocking the continued operation of the construction companies, making unavailable the necessary resources to finance investment programs and the development of the business. The recent survey carried out by ANCE among its associated companies, revealed that 34.2% of them reported severe difficulties to have access to credit. The ways in which banks are continuing to make this rationing consist, in particular, in stretching the time of investigation, in increasing the spread and reducing the level of funding on the total investment.

As demonstration of this diagnosis, there are also data on flows of new loans given for investment in construction: in the residential sector, after having fallen 22% in 2009, in 2010 (during the first nine months of the year) there have been a recovery of only 2.8%; on the other hand, the non-residential sector, after a decline of 9.2% in 2009, have suffered, in the first nine months of 2010, a further decline of 23.4%.

It is evident, then, as shown by data, that the downturn is lasting longer than it was anticipated. It is therefore necessary, as suggested by all observers, that investment in construction activities continue to perform their typical role that allows the sector to sustain the economy and employment.

Employment in the construction sector

## 2.3 Opportunities and challenges

A feature of the construction sector, therefore, is a very complex but fragmented organization; the challenge to be successful requires a competitive, demand-driven, creative, flexible, innovative, knowledge-based sector, which offers new business opportunities and new skilled jobs.

To this end, the process of innovation must relate in particular micro, small and medium-sized enterprises involved in the construction process, to increase the impact of innovation in the field: it is the responsibility of public decision-makers, with the collaboration of professional associations, to favour stable processes of aggregation of small businesses with a view to rationalizing the structure of production.

It is important, therefore, to support small and medium-sized construction companies in setting up investment projects, aimed at the modernization and reorganization, as well as innovation and qualification of manufacturing processes, with particular reference to issues of environmental sustainability and safety work. The key issue is the attention at the intersection of supply and demand: the construction sector must resume its role of intermediary between supply and demand. This means for companies to identify the needs unmet or poorly met and develop new products that meet them. By doing this, they create and develop the demand for these products.

A recent survey on the housing market in Lombardy launched by ANCE Lombardia found that over 90% of households surveyed indicate quality as a prerequisite for the purchase, while one quarter of entrepreneurs see energy efficiency and quality of construction, the two main factors intended to guide the residential property market in the near future.

Not by chance, there has been a polarization of the housing market, which rewards more competitive and innovative products: both qualified investors and individuals looking for accommodation, they look with greater attention to aspects such as energy efficiency, orientation, characteristics of construction materials used, the presence of controls and automation technologies. But quality products generally cost more than traditional products: it means that the operators, but also public authorities and organizations, should be able to identify mechanisms to communicate and promote the innovation, so to outline added value and benefits of energy efficient products.

In the coming years the Lombard construction industry will also be challenged by the strategic appointment of Milan Expo in 2015.

The construction sector, then, needs to provide proper response to these challenges by producing innovative constructions, efficient in terms of energy and respect for the environment, ensuring at the same time appropriate quality of housing and urban conditions, high standards of safety for workers and future inhabitants, with fair economic conditions. The evolution of the construction process is already underway in the Lombardy Region, for two main reasons: from one side due to the preference of the demand side, which is more and more attentive to quality and efficiency standards, on the other side thanks to the policy implemented by the Regional government, which is, for what concerns the environmental front, among the most virtuous nationwide.

The issues related to energy savings have now become factors of competitiveness and development for the enterprises of the building industry. Many companies in the construction sector are leaders both at national and international level for what concerns the production of building materials, engineering and technology for the production of energy: from this background the challenge of the "green economy" in the building sector takes the first steps: a challenge all played on a field which requests integration between the chain of generators of innovation (the technology industry for construction) and the users (construction companies) in terms of process innovation, through the experimental application of new technologies, continuous training for workers, the development of new approaches to engineering design and architecture. A virtuous combination that, in the coming years, is intended to develop its performance in terms of turnover, employment and competitive potential, thanks especially to the recent acceleration of renewable energy use in Lombardy.

Therefore, the construction sector in the present context requires a rationalization of its structures designed to encourage stronger business and enterprises and able to meet the competitive challenge of the production process through innovation and high quality standards. All this must go through the stimulation of qualifying aggregation processes meant to promote the innovation of organizational models, environmental sustainability in the production process and of products and qualification of safety systems at work.

Even in the construction sector it is possible to promote and support networks of excellence by favouring new generation businesses related to the exploitation of resources typical of the Lombardy region.

The consolidation of the networks in the construction chain depends also on the involvement of different niches of excellence and specialized production companies, and moreover on the connection to the system of research, innovation and lifelong learning. This requires a commitment

to building a strategic platform for the promotion of innovation, sustainability and excellence in the sector and its supply chain through a link between the business system, public authorities, research education and institutions.

### **3 PRELIMINARY FINDINGS**

In order to have initial data for our research we delivered to 20 Lombard enterprises operating in the construction sector a questionnaire consisting of 12 questions. From an initial analysis of the answers provided, we can delineate some important conclusions:

- Lombard enterprises of the construction sector are interested in environmental management issues; they are aware of their importance and conscious of their necessity of education and training.
- The use of energy efficient products is important for the surveyed enterprises for several reasons, but the most important factors encouraging them to choose those product are: 1) the possibility to increase profit margins and 2) to get grants for using energy efficient products.
- Most of the companies already use energy saving products, apart from wind turbines and geo-thermal/biomass systems. The most commonly used products are insulation, energy efficient glazing, energy efficient boilers, smart meters and building materials.
- Although most of the energy efficient products listed in the questionnaires are already in use in the surveyed companies, they declared to be interested in learning more about the topic of energy efficiency in the construction sector, with particular interest declared for relevant legislation impacting their business, new trends in energy saving products and services, marketing of those products to customers, how to procure energy efficient products and how to develop structured plans for effective implementation.
- Having sufficient know-how and support, the companies would also the products they are not familiar with, as geo-thermal/biomass systems and wind turbines, but also ventilation, which is currently used only by 20% of the surveyed companies.

- The lack of information and training on the topic is clearly visible in the companies' answers, which declared to be interested in acquiring know-how and being informed on the latest developments.
- Among the most important factors which would help the companies to consider the usage of energy efficient products, there are: self-managed online training course, on the job training and links to experts.
- Concerning the delivery method of a training course, the companies stated as most important the easy accessibility to learning materials, contact details of experts and problem-based learning and exercises. Besides those preferences, access and exposure to industrial cases and best practice tools are also deemed as important by the majority of SMEs surveyed.

In conclusion, it is possible to say that the enterprises of the Lombard construction sector already use some energy efficient products, but they are interested in learning more on the topic in order to gain commercial benefits and improve the competitiveness of their business.

Moreover, the surveyed SMEs declared that the marketing of energy efficient products is very important, in order to be able to sell those products in the market, by showing customers the deriving benefits.

For what concerns the training course the companies' preferences are for easy-accessible materials, possibly by a self-managed online course and problem based learning and exercises. Such a choice is due to the extremely limited time that the construction managers have available for training. Therefore the materials should be to be very-easily accessed, self-managed and very concise.