7 CURRENT TRAINING PROGRAMMES

7.1 GENERAL OVERVIEW OF VOCATIONAL TRAINING IN FRANCE[1]

In France, people can access training at any point in their lives in the form of continuing education. In 2009, one in three employees received some training.

Continuing education allows everyone to receive training either in the form of initial school or university training for pupils and students, or in the form of continuing vocational training for anyone, young or old, who has already entered the world of work.

The resources devoted to continuing vocational training and apprenticeships represented 1.6% of French GDP in 2009.

The field of vocational training in France consists of two systems, which are relatively autonomous:

- Initial vocational training for young people with full-time student status, along with apprentices;
- Continuing vocational training that is aimed at young people who have left or completed their initial training and adults in the labour market.

France has seen continued growth in educational enrolment to include all ages, as well as the development of a vocational training and work-study system, with school status or under an employment contract.

In recent years, cooperation between schools and business has increased substantially. There are an increasing number of gateways between them. The training sector is experiencing significant growth, which is also in line with policy in the broader EU community.

Furthermore, the State has granted the regions complete authority over vocational training and initial and continuing education.

7.1.1 Initial training – already a solid place for the business sector

The French education system is national, free and largely secular. One in five pupils are in private schools. In 2008-2009, 85% of youth aged 2 to 22 were enrolled in school, i.e. nearly 15 million pupils and students.

Compulsory initial education

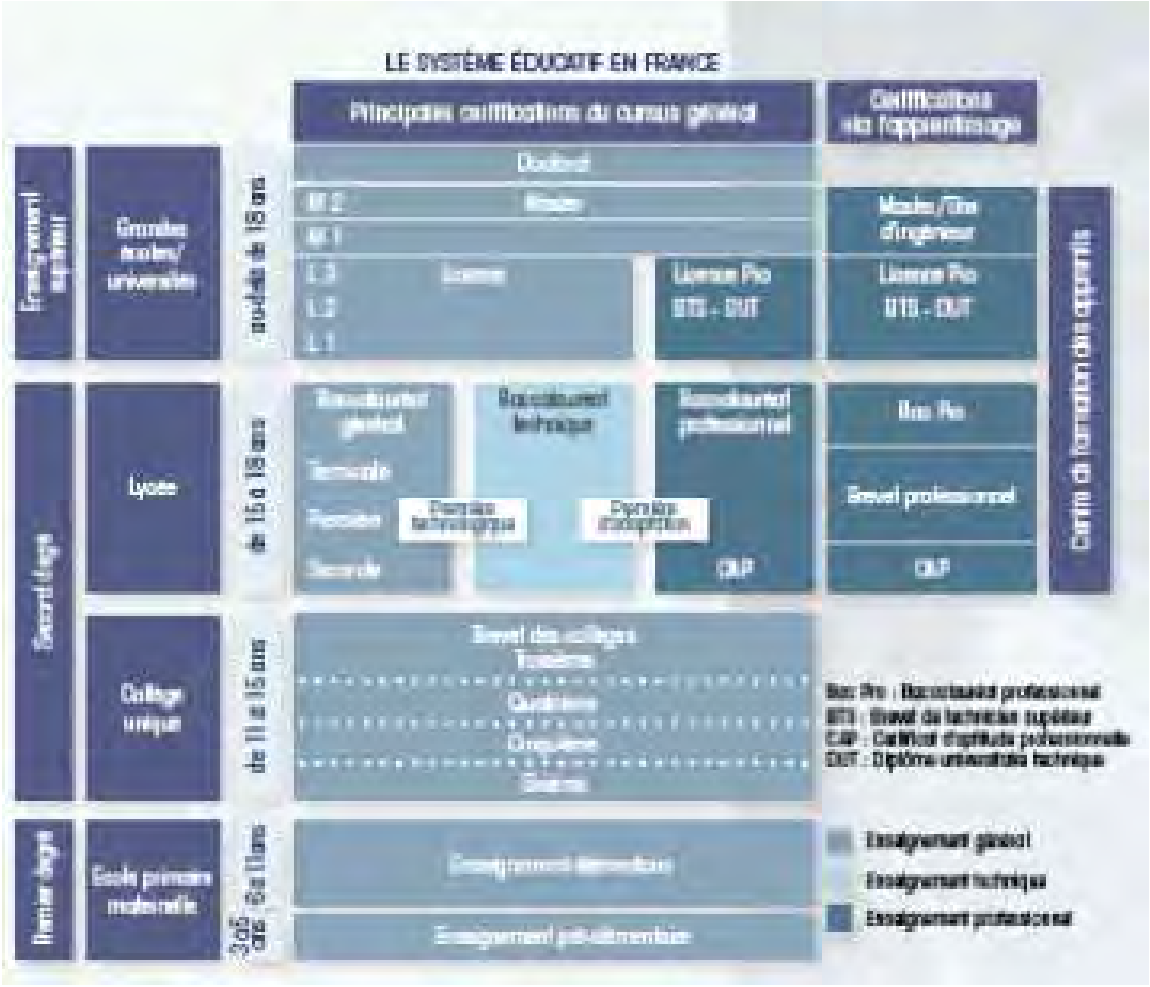
Initial education is compulsory from age 6 to 16 and provides young people with general and vocational instruction. The education system is under the Ministry of National Education and offers three degrees corresponding to three academic streams (see table below). In 2008, the cost of expenditure on education came to 132.1 billion euros, or 6.9% of gross domestic product.

[1] **Centre Inffo.** La formation professionnelle en France [Vocational training in France]. 2012

Three possible streams in initial education

Three tracks are offered: general, vocational and technological education. The latter two offer diplomas ranging from the CAP (level V) to the title of engineer (level I), and including the BTS diploma. The diplomas can be obtained through the school, in the course of apprenticeships or work-study programmes or by the accreditation of learning. The diplomas are designed and updated by the government in consultation with the trade unions and employer associations within the framework of France's professional consultative commissions (CPC).

Since 2003, all vocational qualifications at level V to III have been organised into units that can be obtained separately. They are recorded in a directory (the national directory of vocational qualifications - RNCP).



Source: « La formation professionnelle en France » – Centre Info – January 2012.

7.1.2 Lifelong vocational training

Reform of vocational training in the private sector

The social partners have signed an agreement (national multisector or "interprofessional" agreement of 7 January 2009) with regard to vocational training. The contents of the agreement were largely incorporated into the law of 24 November 2009.

Among the new features, the legislation defines a right to vocational guidance throughout life, creates a joint fund to finance the training of the least skilled, reaffirms the need to develop work-study programmes and provides for the portability of an individual right to training (DIF).

Indeed, it is now possible to use the individual training right after the employment contract is over:

- With the agreement of the person's Pôle Emploi agent, when the person is seeking employment,
- With or without the agreement of the new employer, when the person is hired into a new company.

It covers persons who are already active in the world of work (private sector employees, public servants, non-salaried workers) or becoming active (job seekers).
The purpose of vocational training throughout life is to:

- Facilitate the adaptation to changing technologies and working conditions.
- Maintain or improve professional qualifications.
- Promote social and professional advancement.

The State and the regions are responsible for the implementation of vocational training.

The **social partners** have, in turn, an essential role, especially in the choice of **training policies** for private sector employees and the **management of financing** from business. One of the specificities of the French vocational training system is the role granted to the social partners: this specificity is enscribed in collective bargaining and joint management.

- **Collective bargaining** takes place at various levels: at the national interprofessional level, and at the level of the various trade union and business branches.
- **Joint management** relates to, first, the financing of the system of vocational training (administration of the accredited joint collection fund, called the OPCA) and other discussion and steering bodies at the national and regional interprofessional level and the branch level. At the national and interprofessional level, the National joint committee on vocational training (CPNFP) has been entrusted with the "maintenance" of the interprofessional agreements on training and the responsibility for specifying how to implement them and ensuring relations with the public authorities. The National joint commissions on employment (CPNE) at the level of the trade branches and the Regional joint interprofessional commissions on employment (COPIRE) in turn have certain responsibilities at the regional level. Some trades, including construction, have also established Regional joint commissions on employment and training (CPREF).

The CPNFP groups:
- CGPME (General confederation of small and medium-sized enterprises)
- MEDEF (French business association)
- UPA (Union of crafts business managers)
- CFDT (French democratic labour confederation)
- CFE-CGC (French confederation of executives - General confederation of managers)
- CFTC (French confederation of Christian workers)
- CGT-FO (General labour confederation - Force Ouvrière)
- CGT (General labour confederation)

The joint building and public works CPNE groups:
- CAPEB (Federation of small construction contractors and craftsmen)
- FFB (French building federation)
- FNTP (National federation for building and public works)
- FNSCOP BTP (National federation of building and public works cooperative societies)
- FNSC-CGT (National federation of construction, wood and furnishing employees - General labour confederation)
- FNCB-CFDT (French national construction and wood federation - French democratic labour confederation)
- BATI-MAT-TP-CFTC (Building, materials, public works, French confederation of Christian workers)
- CFE-CGC-BTP (French confederation of executives - General confederation of managers - building and public works)
- FGFO (General confederation - Force Ouvrière)

France spent 31.3 billion euros in 2009 on continuing vocational training, or 1.6% of GDP. These funds mainly come from the public purse (49%) and business (41%), with the remaining 10% from various public entities and consumers.

Vocational training institutions are private, public or consular

More than 15,447 organisations engage in this as their main activity. The main public and French consular networks:

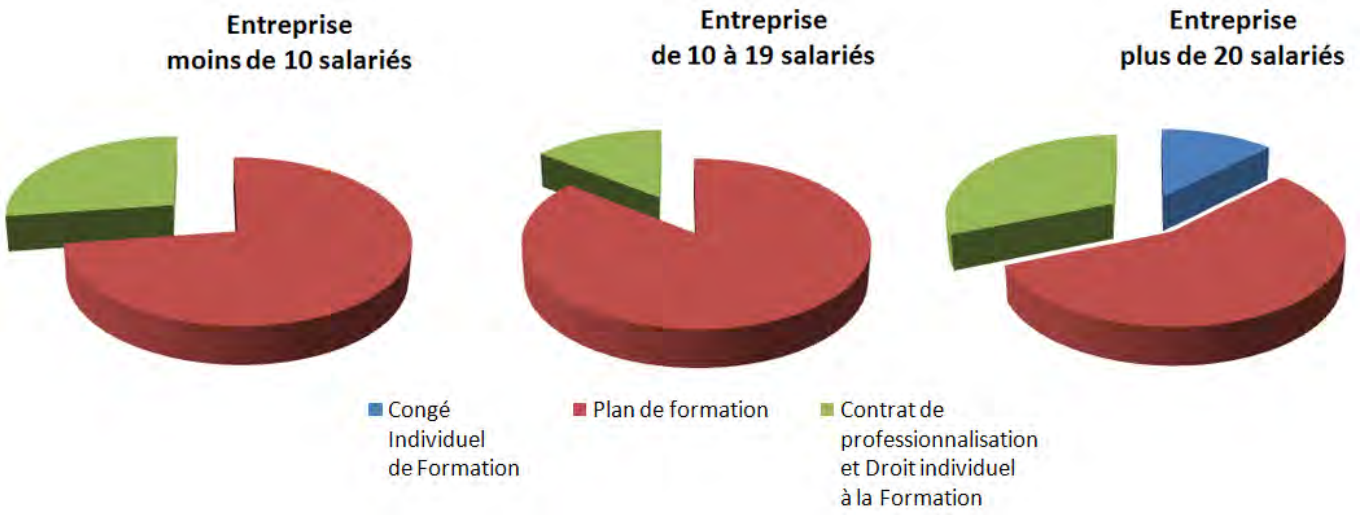
- The ACFCI (Association of French chambers of commerce and industry) provides information about all the schools managed by its network of chambers of commerce and industry.
  www.acfci.cci.fr
- The Afpa (National association for adult vocational training) offers diploma-oriented vocational training (400 certificates).
  www.afpa.fr
- The APCM (Permanent assembly of trade chambers) provides information about training in craft skills.
  www.apcm.com
- The CGE (Conference of grandes écoles) has a list of France's grandes écoles by specialty and the entrance conditions for foreign students.
  www.cge.asso.fr
- The CNAM (National conservatory of arts and crafts), a higher public institute, offers more than 500 diplomas and industrial and commercial qualifications.
  www.cnam.fr
- Educagri, the web site for French agricultural studies, provides information on agricultural schools, diplomas and instruction, possibilities for boarding school, and international cooperation.
  www.educagri.fr
- The GRETA institutions (national education groupings of the French Ministry of National Education) provide instruction for 700 diplomas in technological and professional education.
  www.eduscol.education.fr
- The FCU (French network of continuing university education departments) provides information on the instruction offered by region and field of training.
  www.dep.u-picardie.fr/fcu
- The FFP (Federation of vocational training) groups 300 private training organisations.
  www.ffp.org

An obligation to participate in financing the vocational training of their employees

This obligation is incumbent on employers in the public and private sectors. Since 2005, it has been equal to 1.6% of payroll for private companies with 20 employees or more, to 1.05% for private companies with 10 to 19 employees and to 0.55% for private companies with fewer than 10 employees. This financing (or investment) is composed of different contributions.

With the exception of the training plan for businesses with 10 employees or more, these contributions are managed jointly (employer/employee) by accredited joint collection funds (OPCA), which are organised at the national or regional level and by trade branch, or at the interprofessional level. Note that the social partners in building and public works (BPW) have, by an agreement of 29 June 2010, decided to create Constructys, which is the sole accredited joint collection fund (OPCA) for the construction industry. This organisation has been approved by order of 9 November 2011 (*JO* of 04/12/2011) to collect and manage, starting from 1 January 2012, the contributions to continuing vocational training by building and public works (BPW) companies, regardless of their size. It thus takes over from the FAF.SAB and the OPCA Bâtiment, OPCA Travaux publics, and GFC-BTP group.

Financial contribution of employers as a percent of gross annual payroll



Employee training

The employees' access to training can take place either at the initiative of the employer, as part of the training plan, or at their own initiative, as leave, the most important being individual leave for training.

- The training plan

This includes all the training for which the employer assumes responsibility. The plan is subject to consultation with the works council. The employee is on a job assignment, and is performing their contract. There are, however, two main ways that the employer can send the employee for training: either the employee is trained on working time and continues to receive their salary, or they are sent for training outside working hours and receive an allowance equivalent to 50% of their salary.

- Personal training leave (Congé individuel de formation)

This enables any employee to attend, during working hours, a training programme of their choice, as distinct from those included in the company training plan. The average duration is one year. During this leave, the employee is paid (80% to 100% of the reference wage). The employee has a right to return to the company. Employees under fixed-term contracts (CDD) also benefit from individual training leave.

- The individual right to training (DIF)

Under the individual right to training (DIF), each employee acquires credit hours of 20 hours of training per year, cumulable over 6 years. In principle, the training takes place outside working hours, unless there is a sector agreement that makes it possible to consider this training time as working time. The employee must apply to use this right, and chooses the training activity in agreement with the employer.

- The skills assessment

This is a benefit that enables employees to analyse their personal and professional skills in order to work out a career or training programme. This can be done under the plan or while on leave.
Similar provisions exist for public sector employees.

The training of non-employees

Self-employed workers (farmers, craftsmen, self-employed merchants, professionals) can also access training. They must contribute to the financing of their training by the payment of a contribution to a State-authorised collection fund.

7.2 CAREER AND SCHOOL COUNSELLING[2]

The State, the social partners and the regions have joined forces to create a common innovative tool that provides users access to relevant and reliable information to orient themselves professionally at every stage of life (initial and continuing training):

Orientation pour tous [Counselling for all]. http://www.orientation-pour-tous.fr/

7.2.1 The State

The State has supported the creation of a web portal that provides clear and direct answers to users about their professional and/or academic plans.

The State is represented by the Delegation for information and orientation (DIO) in conjunction with the General delegation for employment and vocational training (DGEFP).
The specific mission of the DIO is to provide:

- Information about careers
- School counselling
- Preparation for employment and the vocational integration of young people into higher education institutions.

It ensures that the local authorities and business are partners in the State's actions. It is responsible for implementing and monitoring a national plan on counselling and vocational integration.

The DGEFP (General delegation for employment and vocational training), which comes under the authority of the Ministry of Labour, Employment, Vocational Training and Social Dialogue, is responsible for proposing policy guidelines for employment and vocational training, defining the legal framework, and leading, coordinating and evaluating the implementation of the policies.

7.2.2 The Regions

The laws on decentralisation have placed the regions at the heart of the training system: in consultation with the State and the social partners, the Conseils régionaux (Regional councils) coordinate, structure and fund training schemes for young people and adults in the workforce.
Through this portal, a number of regions have sought to facilitate the access of all citizens to the job counselling and training programmes in their area.
The regions are represented by the ARF (the Association of the regions of France).

[2] **Counselling for all.** www.orientation-pour-tous.fr

7.2.3 **The social partners**

The social partners, who are heavily involved in providing career guidance and information to citizens about training schemes, are sponsors of the portal alongside the State.
They are represented by the CPNFP (Joint national association for vocational training) and structure the analysis, study and running of the vocational training system.

7.3 ORGANISATIONS INVOLVED IN TRAINING FOR THE BUILDING SECTOR

According to the 2012 ADEME report,[3] two types of educational and training structures can be identified in France:

- Those organised in a network for:
  - Initial education with an academic status: National Education.
  - Initial training through apprenticeship: the Réseaux CCCA-BTP (Committee for consultation and coordination of building and public works apprenticeships), the AOCDTF (French national trade guild training and apprenticeship organisation) and the UNMFREO (National union of rural education and guidance centres).
  - Continuing training: the AFPA (National association for adult vocational training), GRETA, and the FNCMB (National construction trade guild federation).
  - Higher education: the networks of universities, of public institutes, of engineers, of architects.

- Those that are independent or affiliated with a trade federation for:
  - Continuing training: private or association training organisations.
  - Higher education: private schools.

This study will focus on presenting the organisations that are most significant in terms of the training flows of workers and craftsmen in the building sector.

7.3.1 Training institutes providing initial training

- **National Education**

(Data provided by the French Ministry of Education).

The National Education department handles the management and organisation of the French education system.
It defines the guidelines for the teaching and learning programmes, which are common and mandatory for all the schools. It also has another function: ensuring the recruitment, training and management of the staff.
The vast majority of National Education staff are therefore civil servants who are paid and assigned to the schools by the State.

The French education system is organised around four main actors at each administrative level: the French Minister of Education; the Rector of the académie; the DSDEN (Director of National education services) Inspector of the académie; and the Head of the school.

[3] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2011

The missions of National education

To fulfill these missions, the Minister relies on a centrally organised administration resting on three pillars: the departments (the main ones are listed below), the inspections, and the associated agencies.

The DPE (Department of teaching staff) defines and implements the policy on the recruitment and management of the teaching staff at the primary and secondary level and in higher education. It proposes statutory reforms regarding these personnel as well as concerning researchers. It implements and coordinates the decentralised management of these personnel.
The DPMA (Department of personnel involved in modernisation and administration) coordinates the Ministry's policy on decentralisation, and in particular the Ministry's general relations with local authorities and the DATAR (delegation for local and regional planning). It is responsible for organising and defining the tasks of the central and academic services and for handling the development of the contractual policy on resources with the academic services.
The DES (Directorate of school instruction) develops and implements policy for primary, middle and high schools. It develops the use of information and communications technologies for teaching. It is responsible for pedagogical issues relating to private educational institutions. It sets out policy on school life and on social and health care issues for the pupils. It develops and implements policy on priority education zones.
The DEPP (Directorate of evaluation, forecasting and scheduling) defines and implements the system for evaluating education. It helps evaluate the policy conducted by the Ministry. It prepares forecasts and scenarios on trends in the education system over the short and medium term.
The IGEN (General inspectorate of education) plays a central role in monitoring teaching and with respect to defining educational content. The IGEN works under the direct authority of the Minister and carries out duties involving expertise, supervision and evaluation on his behalf.

Covering the country

France is divided into thirty school and university geographic sectors called "académies". The application of ministerial decisions depends on the Rector, who is responsible for the rectorate. The rectorate is the seat of the académie where the academic services are found.
France has about 1,500 technical and vocational schools, 200 of which specialise in construction.

Training for young people aged 16 to 26

Initial vocational training is for young people with full-time school or university status, along with apprentices.
Vocational education, which is organised by the vocational high schools, aims to give young people graduating from middle school qualified vocational training. It provides 2 years of preparation for the professional aptitude certificate (CAP) or vocational studies certificate (BEP) or 3 years for the professional baccalaureate (BAC Pro). These diplomas provide a qualification in a trade.

Very few candidates are in apprenticeships, most of them in the sector's CFA apprenticeship centre.
Short courses in higher and vocational education prepare the person for either a vocation or or a university or technology diploma, the DUT, or a technician's BTS diploma.

Higher education also offers long-term courses in the professions (licenses, masters, doctorates, diplomas from the grandes écoles).

The number of graduates in the building sector is as follows (2011 figures - reported by the French Ministry of Education):

	School	Apprenticeship
BTS (Level 3)	1,543	440
Bac Pro (Level 4)	4,234	1,090
BP (Level 4)	5,822	3,664
CAP (Level 5)	4,675	18,427
TOTAL	**16,274**	**23,621**

National education resources

€62.7 billion euros in 2013

EN resources come from:

- For the most part, the State budget, because it ensures the payment of salaries of most of the staff (teachers and administration) and contributes to the cost of the powers it has transferred to the regions.
- The local authorities for "TOS" personnel (technicians, workers and service); they are also owners of the premises (primary schools by the communes, middle schools by the départements, and high schools by the regions).
- Business and consumers, for a very small portion.

- The **CCCA-BTP** (Committee for consultation and coordination of building and public works apprenticeships)[4]

The CCCA-BTP is a national, professional and joint organisation, created and managed by the employer and employee organisations representative of the construction sector.
With a network of 103 apprenticeship training centres, it is responsible for implementing and coordinating policy on initial vocational training in the sector's apprenticeships.

- Employer federations: CAPEB, FFB, FNSCOP-BTP, FNTP.
- Employee federations: CFDT, CFE-CGC, CFTC, CGT, CGT-FO.
- The State is represented on the Board of administration: Ministry of National education, Ministry of the Economy, industry and employment.

[4] **CCCA-BTP.** www.ccca-btp.fr

The missions of the CCCA-BTP

- To promote jobs in the construction industry.
- To inform young people, their families and the sectors' businesses about initial vocational training, and apprenticeships in particular.
- To improve the quality of the training of young people in the CFA centres and in business, from intake to employment.
- To ensure the social and professional integration of young people.
- To finance the development and operation of the training centres for apprentices.
- To contribute to the training of the training centres' trainers and company trainers (apprenticeship masters).

All the missions of the CCCA-BTP are conducted in close consultation with the regional councils, which are in charge of apprenticeships. These tasks are defined both by the law and by the agreements concluded by the social partners in building and public works.
The CCCA-BTP network has trained nearly 2 million young people in the building trades since its inception more than 60 years ago. For the year 2010/2011, it hosted 67,300 trainees, including 65,388 apprentices in 50 351 companies of all sizes, where they usually train 2 out of every 3 weeks. Youth training and companies that provide training have been decreasing in recent years, by 9% compared to 2008/2009.

Covering the country

The CCCA-BTP network is present in all regions (except Alsace, for statutory reasons). It is present in almost all the départements of mainland France and in Reunion, with 103 apprenticeship training centres (CFA), including 75 building and public works (BPW) centres managed jointly at the local and regional level and 28 associated centres (including 10 whose public works sections have been approved).

Their overall capacity is 75,000 to 80,000 young people, with 73% with a level V orientation.

Training for young people aged 16 to 26

Training from the CAP to BTS level:

- 80% young people under age 20, and 20% young people over age 20, with 10% aged 23 or over.
- Diplomas issued by the Ministry of Education are offered in 22 trades: channeler, tile-mosaic specialist, joiner, vehicle driver, roofer, electrician, plumber, mason, carpenter, painter, locksmith, metalworker, etc.

The resources of the CCCA-BTP

A specific contribution devoted to the vocational training of young people in the construction trades is paid by all the companies in the sector.
The companies also pay an apprenticeship tax.

AOCDTF[5] (French national trade guild training and apprenticeship organisation)

The AOCDTF is a 1901 type association, recognised as a public service, which consists of tradesmen mobilised for a public interest cause: the future of young people and the trades, by bringing together young and old, beginners and experts, employees and employers, and homeless and stable men. These interchanges form the basis of the Companionship of Duty. The Inter-governmental committee of members of Unesco, meeting from 15 to 19 November 2010 in Nairobi (Kenya), enlisted the Companionship on the Representative List of the Intangible cultural heritage of humanity.

The Companionship in fact constitutes a system for the transmission of knowledge through apprenticeship and lifelong training that constantly adapts to changing social environments.

The missions of the AOCDTF are:

- Young people without qualifications - More than 6,000 in apprenticeships every year
  - ✓ To help them find their path in the world of work, to prepare them through apprenticeships for skills tests and imbue them with a taste for learning.

  After this initial qualification, these young people can, if they so desire, become a “Compagnon du Devoir” (journeymen’s organisation member).
- Young people with qualifications - Over 3,300 young people in advanced training on the apprenticeship Tour de France every year
  - ✓ To offer personal development and upward social mobility based on the transmission of knowledge, exchanges and mobility: the "Tour de France", open to the five continents, which makes it possible to become a "Compagnon du Devoir” (journeymen’s organisation member).
- Professionals - Over 6,500 company employees accepted for continuing training
  - ✓ To support their development by offering solutions tailored to their needs: placement of motivated apprentices and skilled professionals, the qualification and specialisation of employees, the publication of technical studies, conferences, seminars, research and theses.

Covering the country

About 50 “Maisons des compagnons” (journeymen’s centres) cover the French territory.

Diplomas issued by the Ministry of Education are offered for training in 25 trades, 9 of them in the building sector: Carpenter/wood worker - Mason - Metalworker - Painter - Plumber - Stonecutter - Roofer - Electrician - Plasterer/Staffer/Stucco worker.

The resources of the AOCDTF

Funding comes from the apprenticeship tax paid by businesses.

[5] **AOCDTF.** www.compagnons-du-devoir.com

7.3.2 The training institutes providing continuing training

AFPA (Association for adult vocational training)

(Data provided by the AFPA)

The AFPA is a French vocational training organisation that was set up on 11 January 1949 under the ANIFRMO designation. (National interprofessional association for the practical training of manpower) to cover the urgent needs of post-war reconstruction. It focused on providing training to adults quickly in order to help them obtain a first qualification in the building and metallurgy sectors. It then gradually diversified into many other professional sectors.

The circular of 6 January 1966 sets out the principles and rules that now govern the AFPA's relationships and connections. The organisation has been accorded full and complete status as an association.

The missions of the AFPA are:

- To raise the skills level of the workforce in France.
- To provide training for jobs.
- To help with vocational integration.
- And to assist with job transitions.

It is a training partner of the **SPE (Public employment service), the regions and business.**

It operates mainly through certified training from level V to III, for a period of 800 hours on average. It also offers short-term training. The DIIP (Directorate of engineering and pedagogical innovations) of the AFPA provides leadership and tools for the training community and conducts projects to design the training.

The AFPA maintains links with the major trade federations like the FFB through national agreements. These agreements give rise to action plans that are applied in the regions and départements, in collaboration with the accredited joint collection funds (OPCA).

With AFPA Transitions, it is also a major actor in job transitions in the job-reclassification sector.

Covering the country

A national and regional establishment with 22 regional centres and 186 training and certification centres, 118 of which specialise in the construction industry (2009 figures). This network of campuses is spread across the whole country.

Training for adults

AFPA training is open to job seekers and employees over age 16 in partnership with government agencies, local authorities, businesses (large, SMEs and craftsmen). Work-study contracts are also part of the system.

The AFPA has laid down its commitment as part of the SPE public employment service, standing alongside those who are most vulnerable and socially marginalised:

- Job seekers represent nearly 60% of trainees
- Young people under age 26: 25%
- Women: 27.5%
- Older workers: 22.2% (almost 1 out of 4 trainees is over 45)
- Disabled people: 8,611 trainees

In 2011, it trained nearly 160,000 adults, including more than 57,000 in the building and public works (BPW) sector.

The certificate courses offered are recognised by a TP (Professional title) issued by the Ministry of Employment, which is recognised by employers. These professional titles are also available through an APL (accreditation of prior learning). For the building sector, the AFPA offers training in over 60 professional titles (see list of professional titles in 7.4.2.).

Flash supplement:
Note that the development of the professional titles is based on a job analysis and validated by professional advisory bodies that contain industry professionals.
There are 7 professional advisory committees (CPC):
- Building and public works
- Industry
- Information management and processing
- Tourism, leisure, hotels, restaurants
- Transport and logistics
- Retail
- Other services to businesses, communities and individuals
And 14 specialised national commissions (CNS).
Their mission is, based on developments in qualifications in their field of expertise, to formulate opinions and proposals to the Minister concerning the creation, updating or deletion of TPs.

The resources of the AFPA

They break down into 50% from local authorities, 30% from the State and institutions and 20% from business.
(Source AFPA - 2011 data)

GRETA[6]

The Greta are the National Education structures that organise training for adults in most trades. One can either prepare a diploma (from the CAP to the BTS) or follow a simple training module. For other levels of training, it is the continuing training courses in universities or the CNAM that are pertinent.

A Greta is **a group of public establishments that pool their expertise and resources to offer continuing training for adults.** It draws on the equipment and human resources of these institutions to offer training that is adapted to the local economy.

Organisation of the Greta networks - 3 levels:

National: At the level of the Ministry of National Education, it is the DGES (General directorate of school education) which is responsible for managing the national Greta network (DGESCO office of continuing vocational training). Its role includes supervision and regulation, institutional representation, responses to tenders at the national level, partnerships with the trade branches and the large "order-givers", and promoting pedagogical innovations and quality procedures.

Regional: The originality of the Greta is their networked operations. The activities of the Greta of a given academy are coordinated by a technical consellor from the Rector, the academy delegate for continuing training, the Dafco, or the academy delegate for initial and continuing vocational training, the Dafpic.
With its services, it facilitates the relations of the Greta network with the region's public partners, with the accredited joint collection funds (OPCA) or with large regional companies. It promotes the pooling of resources, innovations, and technological advances.
In each academie, a public interest grouping, the GIP FCIP:

- Ensures the initial and continuing training of the staff of the Greta network
- Offers training for trainers and tutors
- Performs the service of developing training and advice on human resources for companies and public bodies
- Handles the APL (accreditation of prior learning) for national education
- Coordinates and manages European and international projects in which the Greta are involved.

Local: Each Greta training programme depends on the local demand for continuing training. The companies, regions and municipalities define their needs and publish tenders. The Greta are retained if their proposals are both efficient and competitive.
The CIE (Inter-establishment council) manages the Greta, and it in turn is managed by a "support establishment" that must be a member of the grouping. The management team is composed of the President of the Greta, the heads of institutions that adhere to the Greta, and a manager. The Presidency of the Greta goes to the head of one of the group members. Depending on the importance of the local market for training, there is in each Greta one or more counsellors in continuing training (CFC), who are the backbone of Greta's operations.

[6] **GRETA.** www.education.gouv.fr

The CIE decides the annual programme of activity and the participation of each institution in the collective activity. Each local public education institution (EPLE) then takes into account this decision in its plan for the institution.

Covering the country

In France there are **210 Greta, at least one per département.** The Greta are groups of institutions that encompass several places **where services can be offered**. As for training in construction, these courses take place in the 200 high schools that specialise in construction (*data provided by the French Ministry of Education*). The Greta are also increasingly offering online courses.
Each Greta is created by an agreement concluded between the institutions and approved by the Rector. The Rector is thus directly responsible for the "map" of Gretas: he or she determines their number and their respective areas of operation. Note that middle schools and general education and technology high schools and vocational high schools can join together to create a Greta.

The missions of a Greta are to:

- Take in and orient the adult public, the employee or job seeker.
- Assist in developing a project and a plan for a qualification.
- Arrange for the identified training and services.

The Greta offer a **range of personalised services** that go far beyond the traditional concept of training.

Areas and levels of training

Almost every field of training is found in the Greta. But each Greta has its own type of programme. People who choose to follow the training usually find courses near their home. The more specialised training may require travel. The duration of the training varies greatly and depends on what is desired. Some training sessions mix different audiences: employees, job seekers and paying individuals. Others are restricted to persons designated by a single client (intra-company training). Training can provide access to all the vocational qualifications from the CAP to the BTS and to other professional certifications of an equivalent level: vocational qualification certificates, accounting diplomas, authorisations, etc. In partnership with higher education, the Greta may constitute part of preparation for certain professional licenses. The Greta also organise refresher courses for all types of groups.

The number of graduates in the building sector in the Greta is as follows (*2011 data - reported by the French Ministry of Education*):

BTS (Level 3)	216
Bac Pro (Level 4)	642
BP (Level 4)	576
CAP (Level 5)	3,731
TOTAL	**5,165**

- The **FNCMB** (National construction trade guild federation)[7]

The FNCMB is a federation of fellows that conducts three types of action:

- Initial training.
- Continuing training.
- Action as part of the apprenticeship Tour de France.

A network of journeymen's centres, called *sièges*, which are mainly located near major metropolitan areas, set up and offer training courses going from the CAP to the Licence Pro.

The goals and missions

- To train young workers in the building trades to enable them to be competitive in the construction companies.
- To optimise the performance of the employees and craftsmen in construction firms.
- To facilitate access to training through short-term modules.
- To personalise everyone's training and to accept permanent new hires within the company's constraints.
- To use work-study so as to be in perfect correlation with business reality.

The adventure of the Tour de France is offered to the most motivated students-trainees.

Every year the FCMB also trains several thousand young people and adults who are not destined to become journeymen.

Covering the country

The FNCMB network consists of 17 regional federations (FCMB) throughout France, with 40 of "*maisons des compagnons*" journeymen's centres, or *sièges*, 20 continuing or university training workshops, six centres and one European training institute.
The FNCMB is also present in Europe.

Training for young people, company employees and job seekers

- The continuing training system for young people and adults
  - ✓ Qualifying training, from the CAP to the *licence*
  - ✓ Preparatory training for work-study
  - ✓ Employee training
- Specific work-study contracts for those aged 16 to 25
  - ✓ Apprenticeship agreement
  - ✓ Work-study contract
- Evening courses for everyone
  - ✓ Social promotion and advanced training courses
- Employee specialisations (training agreement with a company)
  - ✓ Upgrading or specialised training for an employee

[7] **FNCMB.** www.compagnons.org

The resources of the FNCMB

- **The training of apprentices** is funded by the Regional Council.
- **Training contracts and periods of professionalisation, as well as company training plans, DIFs and CIFs** are funded by the employer, who is in turn financed wholly or partly by an accredited joint collection fund (OPCA), which collects the financial contributions of companies for the continuing vocational training of employees.
- **Training for job seekers** is funded by the Regional Council, Pôle Emploi or the accredited joint collection fund (OPCA), depending on the arrangements.
- **In addition to the available places**, any job seeker may, if he or she wishes, present an individual application to the Regional Council for approval, with the help of their Mission Locale or Pôle emploi agent and the training centre.

The companies also pay an apprenticeship tax.

7.4 TRAINING COURSES LEADING TO THE AWARD OF DIPLOMAS OR CERTIFICATES IN THE BUILDING SECTOR

7.4.1 Diplomas from the French Ministry of Education and Higher Education[8]

A diploma is a written document that that gives its holder rights (depending on the specific case, access to competitive examinations, further study, etc.). It is awarded by a competent authority under the control of the State (the French Ministry of Education). It determines access to certain professions and certain training courses or competitive examinations. It acknowledges that the holder has a level of verified ability.
There are almost 70 diplomas from the French Ministry of Education and Higher Education in the building sector.

- Level V: CAP
- Level IV: BP, Bac Pro, Bac STIDD
- Level III and II: BTS, DUT, Vocational degree
- Level I: Master's, qualified engineer

Diplomas can be earned in a variety of ways:

- Through initial training, in the context of school and university courses or through an apprenticeship.
- Through continuing training, in the context of work-based learning contracts, the company's training plan or a CIF (*congé individuel de formation* – individual training leave) scheme.

They can also be awarded on the basis of professional experience and are then based on an APL (accreditation of prior learning).

[8] **Observatoire Prospectif des Métiers et des Qualifications**. www.metiers-btp.fr

List of diplomas from the French Ministry of Education and Ministry of Higher Education by level of ability

Source: FFB (French Building Federation) website

- LEVEL V (equates to “3” in the European Qualifications Framework)

CAP

Study for the CAP [*Certificat d’aptitude professionnelle* – certificate of vocational proficiency] begins after the fourth year of secondary school; it is awarded after two years of study in a *lycée professionnel* [vocational high school] as a pupil or in a CFA [*Centre public de formation d’apprentis* – apprenticeship training centre] as an apprentice. The CAP is highly specialised and prepares students for a specific trade, though with a broad understanding of general issues. Its primary aim is to employability.

CAP Tiling and mosaic tilesetting
CAP Carpentry
CAP Vehicle operation: public works and quarries
CAP Timber construction
CAP Building component construction: aluminium, glass and synthetic materials
CAP Reinforced concrete construction
CAP Roofing
CAP Waterproofing: buildings and public works
CAP Cooling and air conditioning
CAP Sanitary installation
CAP Thermal installation
CAP Masonry
CAP Maintenance of local authority buildings
CAP Joinery: door and window frames, furniture and fittings
CAP Joinery installation
CAP Thermal and acoustic insulation installation
CAP Painting and application of surface treatments
CAP Plastering and plasterboarding
CAP Preparation and installation of electrical structures
CAP Locksmithing and metalworking
CAP Flooring and carpet laying
CAP Ornamental plasterwork and ornament design
CAP Stone- and marble-cutting: buildings and decoration

MC (*Mention complémentaire* – additional option)

Students who have completed certain CAPs can take an MC in one year by studying at a vocational school or through an apprenticeship or continuing training.
MC Maintenance of individual thermal equipment
MC Parquet flooring
MC Plasterboarding
MC Welding
MC Lift technician
MC Zincwork

- LEVEL IV (equates to “4” in the European Qualifications Framework)

BP

The BP [*Brevet professionnel* – vocational certificate] is accessible in two years after a CAP through an apprenticeship or continuing education. It provides an opportunity for individuals to raise their level of qualifications by deepening their knowledge of professional techniques and their understanding of management.

BP Tiling and mosaic tilesetting
BP Carpentry
BP Vehicle operation: civil engineering sites
BP Building component construction: aluminium, glass and synthetic materials
BP Roofing
BP Sanitary appliances
BP Waterproofing: buildings and public works
BP Electrical installation and equipment
BP Masonry
BP Joinery
BP Stone trades
BP Swimming pool trades
BP Cooling and air conditioning installation and repair
BP Climatic engineering installation
BP Paint and surface treatments
BP Plaster and plasterboard
BP Locksmithing and metalworking
BP Stone-cutting for historic monuments

BAC PRO

Study for the Bac pro [*baccalauréat professionnel* – vocational baccalaureate] begins after the fourth year in a vocational school or through an apprenticeship and lasts for three years; it is intended to prepare students directly for working life as a highly qualified worker or technician. It can also be prepared in two years after a CAP. Progression to a BTS [*brevet de technicien supérieur* – advanced vocational certificate] is possible.
Note: The BEP [*brevet d’études professionnelles* – certificate of vocational studies] is included in the course as an interim qualification for those studying in school.

Bac pro Fitting out and finishing techniques
Bac pro Electrical engineering, energy and communications equipment
Bac pro Working with built heritage
Bac pro Timber construction techniques
Bac pro Building components: aluminium, glass and synthetic materials
Bac pro Building components: metalwork
Bac pro Joinery and fitting techniques
Bac pro Layout of architectural space
Bac pro Energy and climatic systems
maintenance technician
Bac pro Building design technician (option A: design and economics, option B architectural assistant)
Bac pro Building technician: organisation and construction of structural works
Bac pro Cooling and air conditioning technician
Bac pro Energy and climatic systems installation technician

BAC TECHNO

Study for the Bac techno [*baccalauréat technologique* – technological baccalaureate] begins after the fourth year of secondary school and combines general and technological subjects (theoretical studies and practical applications). It is particularly recommended for pupils who wish to progress to a BTS - DUT [*diplôme universitaire de technologie* – university diploma in technology].
Bac techno STI DD (science and technology for industry and sustainable development)

MC

Students who have completed certain BP or Bac pro courses can take an MC in one year through school or an apprenticeship.
MC Painting and decorating

- LEVEL III (equates to “5” in the European Qualifications Framework)

BTS/ DUT

These diplomas train specialists in a specific sub-sector, equipping them to take up jobs as an assistant engineer, site (deputy) manager or works (deputy) supervisor. It is prepared in two years after a general or technological baccalaureate. Places are awarded on the basis of the student’s application. Automatic entitlement for holders of a Bac techno (who are given priority, particularly for the BTS) or a Bac pro in the same specialisation with a merit or distinction. Students can work towards their BTS in school or through an apprenticeship. Progress to further study possible, particularly vocational degrees.

BTS Layout of architectural environments
BTS Fitting and finishing
BTS Building
BTS Carpentry and roofing
BTS Metal structures
BTS Home automation
BTS Electrical engineering
BTS Building shell: facades and waterproofing
BTS Building design and economics of construction
BTS Fluids, energy and environments (option A sanitary and thermal engineering, option B climatic engineering, option C refrigeration engineering, option D maintenance and management of fluid and energy systems)
BTS Timber construction systems and housing
DUT Civil engineering
DUT Thermal and energy engineering

- LEVEL II (equates to “6” in the European Qualifications Framework)

VOCATIONAL DEGREES in the building sector

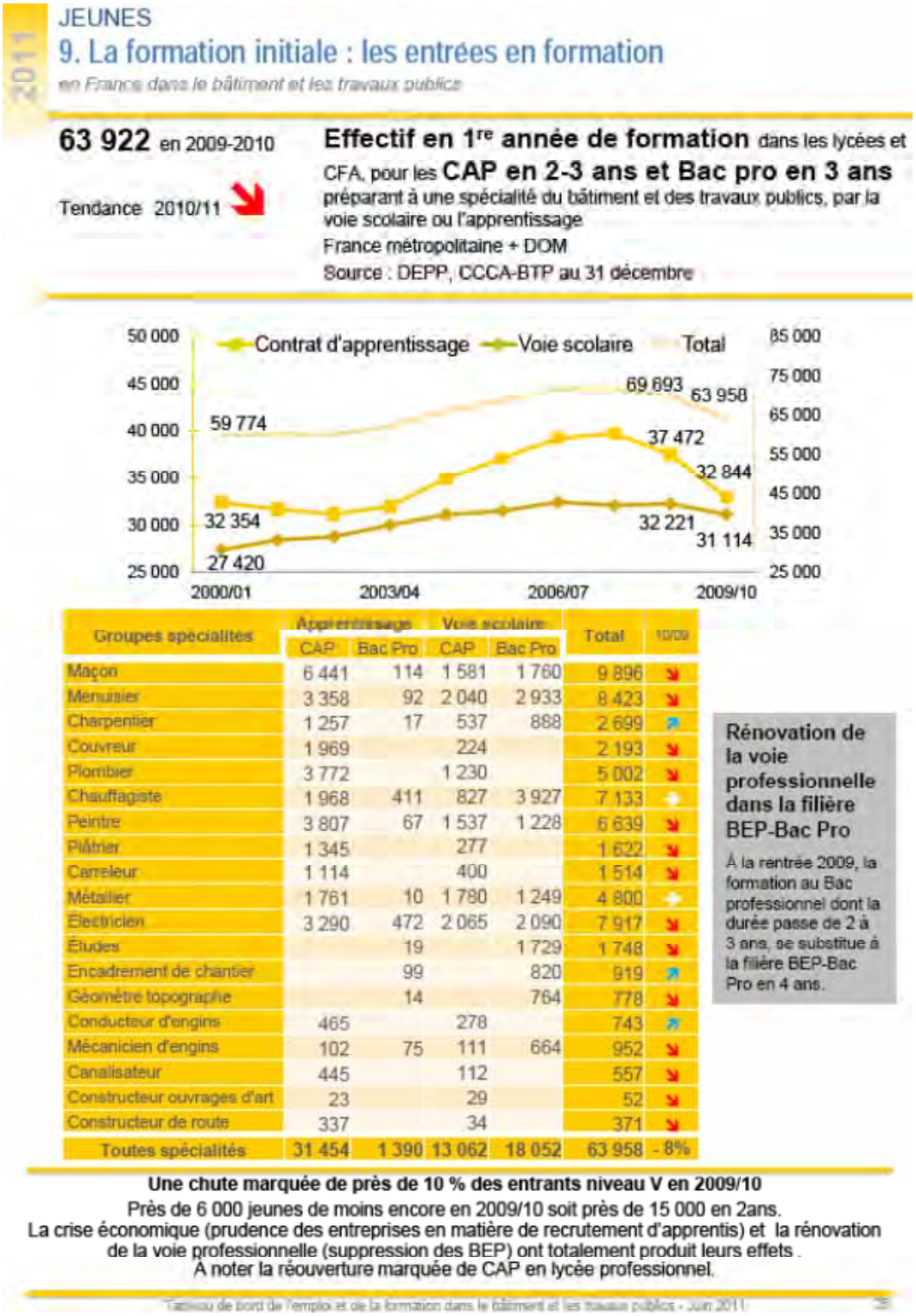
There are around 30 vocational degrees dedicated to the building and public works/civil engineering sector; places are awarded on the basis of an application and interview subject to two years’ secondary education. Most courses focus on site supervision and project management and implementation in the building and public works sector.

- LEVEL I (equates to “7” in the European Qualifications Framework)

ENGINEERING DIPLOMA specialism or option in Building/Civil engineering and VOCATIONAL MASTER’S option in civil engineering and construction

Award-bearing initial training and apprenticeships: number of people in training in 2009 – 2010: 58,000 people (*)

(*) Calculated based on the totals for 11 specialist groups from mason to electrician in the table below.



JEUNES

9. La formation initiale : les entrées en formation

en France dans le bâtiment et les travaux publics

63 922 en 2009-2010

Tendance 2010/11

Effectif en 1re année de formation dans les lycées et CFA, pour les **CAP en 2-3 ans et Bac pro en 3 ans** préparant à une spécialité du bâtiment et des travaux publics, par la voie scolaire ou l'apprentissage

France métropolitaine + DOM

Source : DEPP, CCCA-BTP au 31 décembre

Groupes spécialités	Apprentissage		Voie scolaire		Total	10/09
	CAP	Bac Pro	CAP	Bac Pro		
Maçon	6 441	114	1 581	1 760	9 896	↘
Menuisier	3 358	92	2 040	2 933	8 423	↘
Charpentier	1 257	17	537	888	2 699	↗
Couvreur	1 969		224		2 193	↘
Plombier	3 772		1 230		5 002	↘
Chauffagiste	1 968	411	827	3 927	7 133	→
Peintre	3 807	67	1 537	1 228	6 639	↘
Plâtrier	1 345		277		1 622	↘
Carreleur	1 114		400		1 514	↘
Métallier	1 761	10	1 780	1 249	4 800	→
Électricien	3 290	472	2 065	2 090	7 917	↘
Études		19		1 729	1 748	↘
Encadrement de chantier		99		820	919	↗
Géomètre topographe		14		764	778	↘
Conducteur d'engins	465		278		743	↗
Mécanicien d'engins	102	75	111	664	952	↘
Canalisateur	445		112		557	↘
Constructeur ouvrages d'art	23		29		52	↘
Constructeur de route	337		34		371	↘
Toutes spécialités	31 454	1 390	13 062	18 052	63 958	- 8%

Rénovation de la voie professionnelle dans la filière BEP-Bac Pro

À la rentrée 2009, la formation au Bac professionnel dont la durée passe de 2 à 3 ans, se substitue à la filière BEP-Bac Pro en 4 ans.

Une chute marquée de près de 10 % des entrants niveau V en 2009/10

Près de 6 000 jeunes de moins encore en 2009/10 soit près de 15 000 en 2ans.
La crise économique (prudence des entreprises en matière de recrutement d'apprentis) et la rénovation de la voie professionnelle (suppression des BEP) ont totalement produit leurs effets .
A noter la réouverture marquée de CAP en lycée professionnel.

Tableau de bord de l'emploi et de la formation dans le bâtiment et les travaux publics - Juin 2011

(Source: CCCA-BTP 2011 – National scorecard for employment and training in the building and public works sector)

7.4.2 Professional accreditations issued by the French Ministry of Employment

A professional accreditation is a professional certification issued by the Ministry of Employment, indicating that its holder has the necessary skills, abilities and knowledge to carry out specific professional activities.
Preparatory courses for professional accreditation are offered in AFPA [*Association nationale pour la formation professionnelle des adultes* – National Centre for Adult Vocational Training] and other accredited centres throughout France. These offer modular training courses of varying length, depending on the level of training required.

List of professional accreditations in the building sector[9]

Specialism	Level
Heating maintenance technician	V
Air conditioning maintenance and operation technician	V
Building maintenance technician	V
Assistant site manager: structural works	IV
Assistant project manager: electrical works	IV
Tiler	V
Building project manager	III
Carpenter	V
Site manager: structural works	III
Team leader: fittings and finishing	IV
Team leader: structural works	IV
Shutter hand: building option	V
Tower crane operator	V
Works supervisor: fittings and finishing	III
Works supervisor: building	III
Furnishings designer	V
Roofer and Zincworker	V
Metal structures designer	IV
Reinforced concrete designer and design technician	III
Equipment electrician	V
Facade specialist and painter	V
Ironworker	V
Antenna installer	V
Cable communications network installer	V
Heating, air conditioning, sanitation and renewable energy installer	V
Thermal and solar installer	V
Thermal and solar installer	CCS

[9] **Observatoire Prospectif des Métiers et des Qualifications.** www.metiers-btp.fr

Masonry worker	V
Masonry worker: old buildings	V
Aluminium joiner	V
Fittings joiner	V
Joiner: building and furnishing construction	V
Metalworker	V
Quantity surveyor	V
Air conditioning installer and repair technician	V
Refrigeration installer and repair technician	V
Timber construction installer	V
Structural metal erector	V
Building painter	V
Decorator	V
Plasterboard technician	V
Plasterer	V
Joinery and internal fittings installer	V
Joinery, fastenings and equipment installer	V
Fine furniture restorer	IV
Flooring and carpet layer	V
Stone-cutter	V
Decorator, upholsterer	V
Surveillance-intrusion and video projection systems technician	IV
Electrical systems design office technician	IV
Site technician: fittings and finishing	IV
Swimming pool construction and maintenance technician	IV
Thermal equipment maintenance technician	IV
Heating and air conditioning maintenance technician	IV
Electrical equipment technician	IV
Cable communications network technician	IV
Building design technician – project design option	IV
Building design technician – economics of construction option	IV
Building design technician – pricing option	IV
Commercial cooling and air conditioning technician	IV
Professional cooling and catering equipment technician	IV
Industrial cooling technician	IV
Air conditioning and energy maintenance technician	IV
Building automation and electricity technician	IV
Fire safety systems technician	IV

Timber construction design technician	IV
Internal fittings and joinery technician	IV
Housing renovation quantity surveyor and technician	IV
Advanced technician: climatic equipment operation and maintenance	III
Advanced technician: metal construction design	III
Advanced technician: climatic engineering design	III
Advanced building technician: economics of construction	III

(Source: http://www.metiers-btp.fr/reperes/diplomes-titres-et-certificats/Pages/diplomes-batiment.aspx), building and public works observation and 2012 updates)

Level V is equivalent to a BEP
Level IV is equivalent to a baccalaureate
Level III is equivalent to 2 years' post-baccalaureate
CCS = Certificat Complémentaire de Spécialisation [Supplementary Certificate of Specialisation]

Number of professional accreditations awarded annually in the building sector

Niveau	Libellé	Admis au titre professionnel 2009	Admis au titre professionnel 2010
Maçonnerie gros œuvre			
Niveau V	Maçon	1 943	1 710
Niveau V	Maçon du bâti ancien	213	216
Niveau V	Tailleur de pierre	106	109
Niveau V	Coffreur bancheur option bâtiment	413	379
Niveau V	Conducteur de grue à tour	180	139
Niveau V	Conducteur d'engins (toutes options)	595	601
Niveau V	Installateur antenniste	55	61
Niveau IV	Adjoint technique études et chantiers	86	85
Niveau IV	Aide appareilleur	6	
Niveau IV	Assistant chef de chantier gros œuvre	52	29
Niveau IV	Chef d'équipe gros œuvre	152	138
Niveau III	Chef de chantier gros œuvre	41	50
Niveau III	Dessinateur projeteur en béton armé		42
	Sous-total	**3 842**	**3 559**
Couverture			
Niveau V	Couvreur-zingueur	207	307
	Sous-total	**207**	**307**
Bois bâtiment			
Niveau V	Charpentier bois	304	399
Niveau V	Menuisier de fabrication bâtiment	75	88
Niveau V	Menuisier d'agencement	530	482
Niveau V	Finisseur, vernisseur bois	38	36
Niveau V	Poseur de menuiserie et d'aménagements intérieurs	284	288
Niveau V	Poseur-installateur de menuiseries, fermetures et équipements	148	175
Niveau IV	Agent de maîtrise fabrication bois bâtiment ameublement	5	
Niveau IV	Chef d'équipe pose menuiseries aménagements	2	
Niveau IV	Chef d'équipe montage de maison ossature bois et pose de charpente	1	
Niveau IV	Technicien d'études en construction bois		22
Niveau IV	Technicien métreur en agencement et aménagements intérieurs	47	34
Niveau IV	Technicien métreur en charpente bois et couvert	20	
	Sous-total	**1 455**	**1 524**
Métallerie et construction métallique			
Niveau V	Ferronnier	48	21
Niveau V	Métallier-serrurier	119	170
Niveau V	Monteur-levageur	34	41
Niveau V	Menuisier aluminium	113	101
Niveau IV	Dessinateur en constructions métalliques	23	36
Niveau IV	Technicien métreur dessinateur en métal	7	
Niveau III	Technicien supérieur d'études en construction métallique	38	43
	Sous-total	**382**	**412**

S(Source: Social indicators from the FFB 2012)

Niveau	Libellé	Admis au titre professionnel 2009	Admis au titre professionnel 2010
Électricité			
Niveau V	Électricien d'équipement	2 186	2 324
Niveau IV	Assistant de chargé d'affaires en électricité	13	3
Niveau IV	Technicien en systèmes de sécurité incendie	30	21
Niveau IV	Technicien de bureau d'études en électricité	78	46
Niveau IV	Technicien d'équipement en électricité	150	128
Niveau IV	Technicien en automatismes du bâtiment	111	116
Niveau IV	Technicien en installation de surveillance intrusion	54	62
	Sous-total	**2 622**	**2 700**
Équipement technique			
Niveau V	Installateur d'équipement sanitaire	34	17
Niveau V	Installateur en thermique et sanitaire	1 599	1 935
Niveau V	Agent de maintenance en chauffage	312	445
Niveau V	Monteur-dépanneur en climatisation	91	135
Niveau V	Monteur-dépanneur frigoriste	261	270
Niveau IV	Technicien de construction et de maintenance de piscine	38	26
Niveau IV	Technicien de maintenance en chauffage et climatisation	109	121
Niveau IV	Technicien de maintenance en génie climatique	160	169
Niveau III	Technicien supérieur d'études en génie climatique	35	66
Niveau III	Technicien supérieur de maintenance et d'exploitation en climatisation	42	38
	Sous-total	**2 681**	**3 222**
Aménagement finitions			
Niveau V	Carreleur	771	766
Niveau V	Façadier-peintre	72	76
Niveau V	Peintre en bâtiment	1 272	1 101
Niveau V	Peintre en décors	109	50
Niveau V	Plaquiste	893	970
Niveau V	Plâtrier	83	71
Niveau V	Solier-moquettiste	99	87
Niveau IV	Chef d'équipe aménagement finitions	30	25
Niveau IV	Technicien de chantier aménagement finitions	43	30
Niveau III	Conducteur de travaux aménagement finitions	47	26
	Sous-total	**3 419**	**3 202**
Technicien et conduite de travaux			
Niveau IV	Technicien d'études du bâtiment (toutes options)	501	406
Niveau IV	Technicien métreur en réhabilitation de l'habitat	39	26
Niveau III	Conducteur de travaux du bâtiment	59	90
Niveau III	Technicien supérieur d'études en béton armé	46	
Niveau III	Technicien supérieur du bâtiment en économie de la construction	66	62
	Sous-total	**711**	**584**
	Total général	**15 319**	**15 510**

(Source: Social indicators from the FFB 2012)

7.4.3 Certificates of Professional Qualification[10]

- The *Certificat de Qualification Professionnelle* (**CQP** – certificate of professional qualification) is a certificate that confirms an individual is qualified to take a clearly identified job in a specific activity.

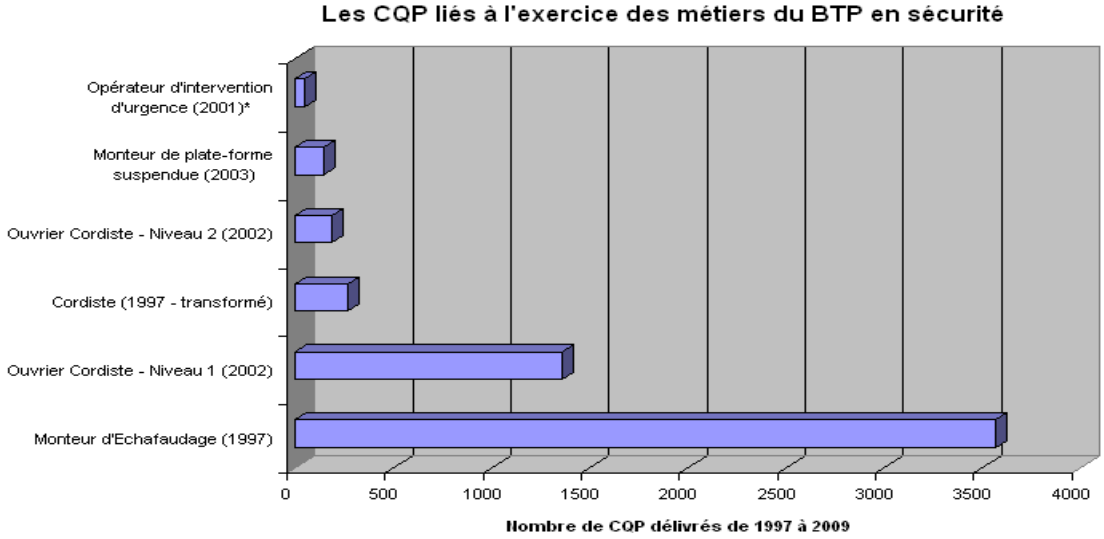
It is issued by the *Commissions Paritaires Nationales de l'Emploi* (CPNE – National Joint Consultative Committees on Employment) for building and public works, which are recognised by the state and social partners for their competencies in employment and professional qualifications.

Focus on: additional qualifications

Jobs in the building and public works sector are often technical, skilled trades, as evidenced by the wide range of certifications in the sector. In addition to the numerous diplomas awarded by the French Ministry of Education and professional accreditations from the Ministry of Employment, social partners have created CQPs for certain professional qualifications that are specific to this sector.

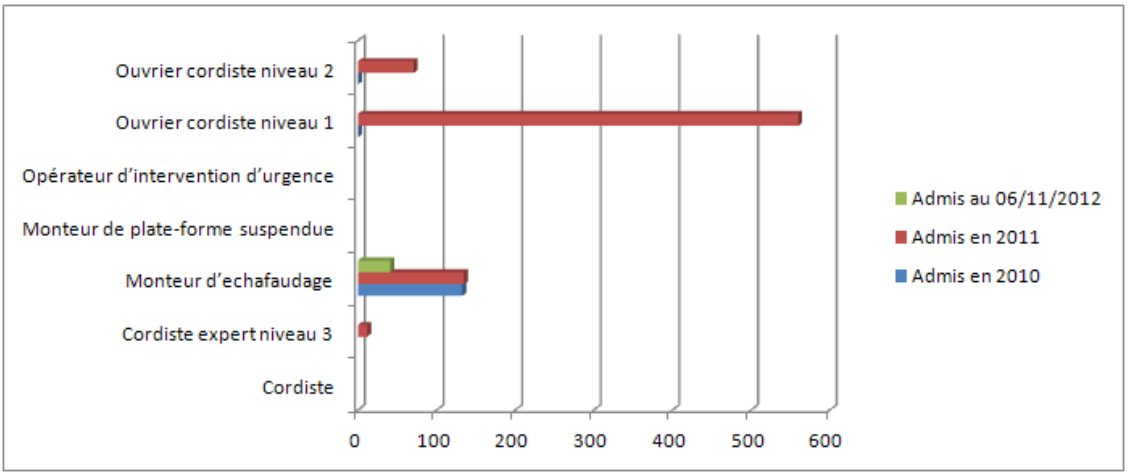
Between 1997 and the end of 2009, no fewer than 8,105 candidates were awarded a certificate of professional qualification recognised by the French National Collective Agreements on building and public works.

A high proportion of those awarded certificates had achieved a qualification related to site safety (graphs 1 and 2). The remainder had earned a qualification in a specific trade in building and public works (graphs 3 and 4).



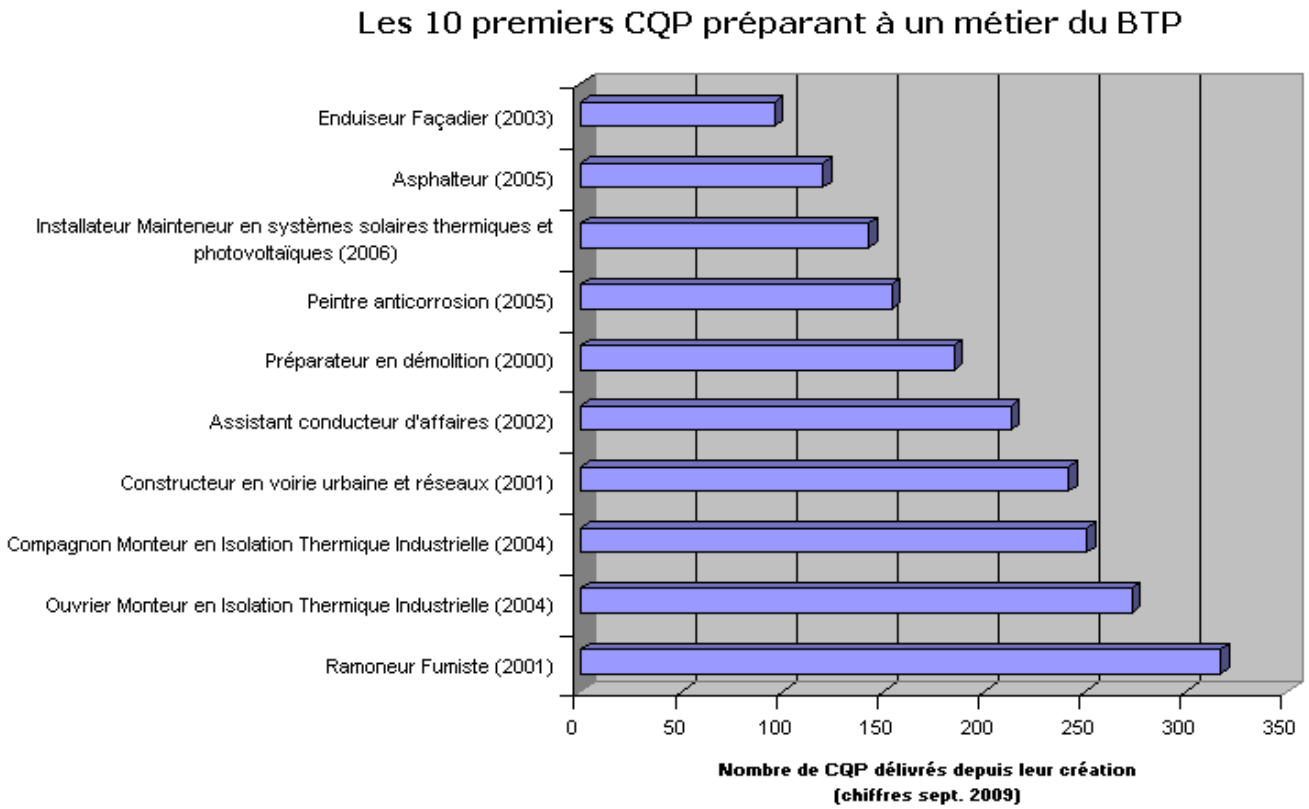
Source: http://www.metiers-btp.fr/actualites/publications-nationales-et-regionales/Pages/actualites-cqp-2008.aspx

CQP awards in safety-related areas in building and public works 2010 – 2011 – 2012 (as at 6/11)



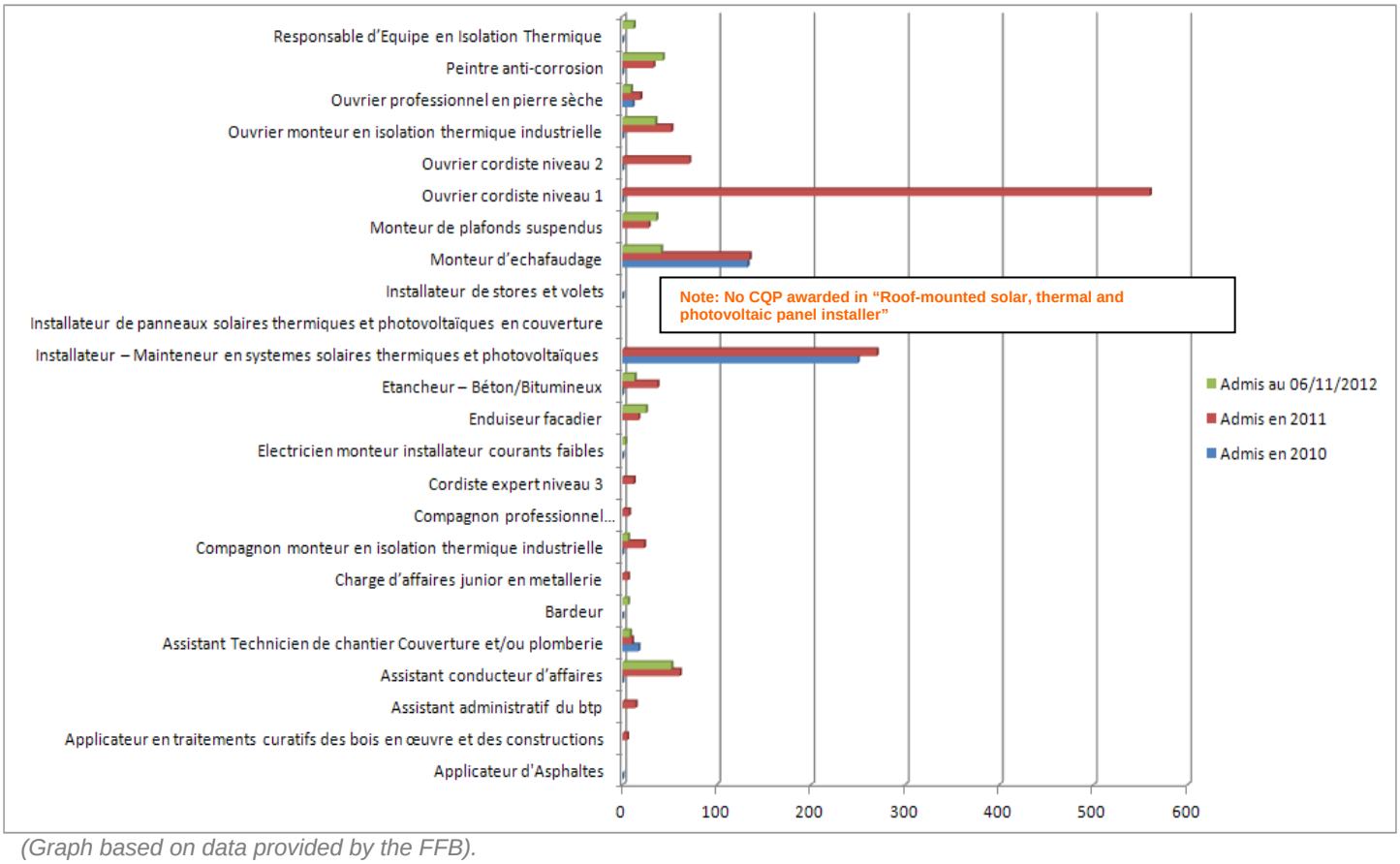
(Graph based on data provided by the FFB).

[10] **Observatoire Prospectif des Métiers et des Qualifications.** www.metiers-btp.fr



Source: http://www.metiers-btp.fr/actualites/publications-nationales-et-regionales/Pages/actualites-cqp-2008.aspx

CQP awards in 2010 – 2011 – 2012 (as at 6 November)



(Graph based on data provided by the FFB).

- The *Certificat de Maitrise Professionnelle* (**CMP** – certificate of professional skills) is also issued by professionals in the building and public works sector and confirms an employee's know-how and skills in their trade: their detailed understanding of the job and ability to carry out complex tasks, work independently, take the initiative, etc. It provides access to level IV of the National Collective Agreement for Building Workers.

7.4.4 The title of Maître d'Apprentissage Confirmé[11]

The title of *Maître d'apprentissage confirmé* (**TMAC –** certified apprenticeship supervisor) confirms an individual's ability to welcome an apprentice into the business, ensure they integrate well and train them. The title can be earned through training or accreditation of prior learning, depending on the individual's previous experience as an apprenticeship supervisor.
An agreement was signed by the social partners in the building and public works sector in July 2004, in order to increase the quality of training provided by apprenticeships. As a result, if a business uses a salaried employee to train an apprentice, they must hold the title of certified apprenticeship supervisor. It is issued by the *Commission Paritaire Régionale de l'Emploi et de la Formation* (CPREF – Regional Joint Consultative Committee on Employment and Training) for building and public works.

These requirements are now compulsory for all apprenticeship contracts, including those underway as at the following dates:

- From 28 January 2011 for apprenticeship supervisors for BP/Bac pro qualifications.
- From 28 January 2013 for all other apprenticeship supervisors.

Certified apprenticeship supervisor qualifications awarded by region

	2008	2009	2010	2011	2012 (données partielles)
Alsace					
Aquitaine	28	19	50	29	
Auvergne	0	0	0	0	
Bourgogne	13	17	7	22	68
Bretagne	107	53	7	26	20
Centre	4	1	7	14	
Champagne Ardenne	0	0	2	18	
Franche comté	0	0	0	0	
IDF	22	42	52	44	
Languedoc Roussillon	3	3	0	0	
Limousin	10	17			5
Lorraine	0	0	0	95	
Midi Pyrénées	0	8	0	0	
Nord- Pas de Calais	9	17	14	12	
Basse Normandie	102	100	45	20	
Haute Normandie	0	0	0	0	1
Pays de la Loire	622	298	190	183	
Picardie	0	37	58	33	0
Poitou Charente	87	33	3	13	
PACA	111	293	9	0	
Rhône Alpes	0	0	0	14	47
Total	**1 118**	**938**	**465**	**535**	

(Data provided by the FFB).

[11] **Observatoire Prospectif des Métiers et des Qualifications.** www.metiers-btp.fr

C.P.N.E

DU BÂTIMENT ET DES TRAVAUX PUBLICS

CQP

LISTE

MISE À JOUR LE 28/11/2011

LISTE DES CERTIFICATS DE QUALIFICATION PROFESSIONNELLE DU BÂTIMENT ET DES TRAVAUX PUBLICS

NUMERO	TITRE	SECTEUR	CLASSEMENT	ECHEANCE	RNCP
001 – 1997 03 18	CORDISTE	BTP	N. II CCN OUVRIERS DU BÂTIMENT N. II – P. 1 CCN OUVRIERS DES TP	TRANSFORMÉ VOIR N°35 ET 36	
002 – 1997 11 25	MONTEUR D'ECHAFAUDAGE	BTP	N. II CCN OUVRIERS DU BÂTIMENT N. II – P. 1 CCN OUVRIERS DES TP	DECEMBRE 2012	
004 – 1998 09 29	MONTEUR VOIES POUR ROULEMENT PNEUS	TRAVAUX PUBLICS	N. II – P. 1 CCN	DÉCEMBRE 2002 NON RENOUVELE	
005 – 1999 09 30	TECHNICIEN COMMERCIAL DES RESEAUX VDI – GTB – SECURITE/SÛRETÉ	BÂTIMENT	P. 5 CCN ETAM	DÉCEMBRE 2007 NON RENOUVELE	
006 – 1999 09 30	TECHNICIEN DE BUREAU D'ETUDES DES RESEAUX VDI – GTB – SECURITE/SÛRETÉ	BÂTIMENT	P. 5 CCN ETAM	DÉCEMBRE2007 NON RENOUVELE	
007 – 1999 09 30	TECHNICIEN INSTALLATEUR DES RESEAUX VDI – GTB – SECURITE/SÛRETÉ	BÂTIMENT	P. 5 CCN ETAM	DÉCEMBRE2007 NON RENOUVELE	
008 – 1999 09 30	TECHNICIEN DE MAINTENANCE RESEAUX VDI – GTB – SECURITE/SÛRETÉ	BÂTIMENT	P. 5 CCN ETAM	DÉCEMBRE2007 NON RENOUVELE	
009 - 2000 09 30	PRÉPARATEUR EN DÉMOLITION	BTP	N. II CCN OUVRIER DU BÂTIMENT ET CCN TP	DÉCEMBRE 2016	
016 - 2001 04 04	RAMONEUR – FUMISTE	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2012	
017 - 2001 04 04	MONTEUR LEVAGEUR	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2010 NON RENOUVELÉ	
018 - 2001 04 04	TECHNICIEN DE CHANTIER - OPERATEUR JURIDIQUE DES MARCHÉS	BÂTIMENT	830 ETAM	EN ATTENTE SESSION	
019 - 2001 04 04	SCAPHANDRIER – AGENT D'INSPECTION	TRAVAUX PUBLICS	N. II – P. 2 CCN	DÉCEMBRE 2012	
020 – 2001 04 04	SCAPHANDRIER – INSPECTEUR	TRAVAUX PUBLICS	N. III CCN OUVRIERS	DÉCEMBRE 2012	
023 - 2001 10 15	CONSTRUCTEUR EN VOIRIE URBAINE ET RESEAUX	TRAVAUX PUBLICS	N. II – P. 2 CCN OUVRIERS	DÉCEMBRE 2012	JANVIER 2016
024 - 2001 10 15	TECHNICIEN D'ETUDES ET DE CHANTIER EN COUVERTURE ET/OU PLOMBERIE	BÂTIMENT	P. 5 655 CCN ETAM	DÉCEMBRE 2012	
025 - 2001 10 15	OPERATEUR D'INTERVENTION D'URGENCE	BÂTIMENT	N. IV – P. 1 CCN OUVRIERS	NON RENOUVELE	
026 – 2002 09 24	INSTALLATEUR-MAINTENEUR DE SYSTEME DE DESENFUMAGE	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2012	
027 – 2002 12 17	ASSISTANT CONDUCTEUR D'AFFAIRES	BÂTIMENT	P. 5 – COEF 700 CCN ETAM	DÉCEMBRE 2013	
028 – 2002 12 17	ELECTRICIEN MONTEUR INSTALLATEUR COURANTS FAIBLES	BÂTIMENT	N. III CCN OUVRIERS	DÉCEMBRE 2014	
029 – 2002 09 24	FOREUR (OPTION FORAGES DESTRUCTIFS)	TRAVAUX PUBLICS	N. II – P. 2 CCN OUVRIERS	DÉCEMBRE 2016	
035 - 2002 09 24	OUVRIER CORDISTE NIVEAU 1	BTP	N. I – P. 2 CCN OUVRIERS DU BÂTIMENT N. I – P. 2 CCN OUVRIERS DES TP	DÉCEMBRE 2013	
036 - 2002 09 24	OUVRIER CORDISTE NIVEAU 2	BTP	N. II – P. 1 CCN OUVRIERS DU BÂTIMENT N. II – P. 1 CCN OUVRIERS DES TP	DÉCEMBRE 2013	
037 - 2002 09 24	CORDISTE EXPERT NIVEAU 3	BTP	N. IV – P. 1 CCN OUVRIERS DU BÂTIMENT N. IV – P. 1 CCN OUVRIERS DES TP	DÉCEMBRE 2014	
038 - 2002 07 07	MONTEUR DE PLATE-FORME SUSPENDUE	BTP	N. II CCN OUVRIERS DU BÂTIMENT N. II P. 1 CCN OUVRIERS DES TP	DÉCEMBRE 2012	
039 – 2003 07 07	ENDUISEUR FACADIER	BATIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2016	
040 – 2003 09 23	CONSTRUCTEUR EN SOLS INDUSTRIELS	BATIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2011 NON RENOUVELE	
041 – 2003 09 23	COMPAGNON CANALISATEUR OPTION ADDUCTION D'EAU POTABLE	TRAVAUX PUBLICS	N. III – P. 1 CCN OUVRIERS	DÉCEMBRE 2016	
042 – 2003 09 23	COMPAGNON CANALISATEUR OPTION ASSAINISSEMENT	TRAVAUX PUBLICS	N. III – P. 1 CCN OUVRIERS	DÉCEMBRE 2016	
043 – 2003 09 23	COMPAGNON CANALISATEUR OPTION MAINTENANCE ET ENTRETIEN DES CANALISATIONS ET BRANCHEMENTS AEP	TRAVAUX PUBLICS	N. III – P. 1 CCN OUVRIERS	DÉCEMBRE 2016	
044 – 2004 03 23	MONTEUR DE LIGNES AÉRIENNES HTB	TRAVAUX PUBLICS	N. II – P. 1 CCN OUVRIERS	DÉCEMBRE 2012	
045 – 2004 09 21	INSTALLATEUR DE STORES ET VOLETS	BATIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2010 NON RENOUVELÉ	

CPNE Conjointes du Bâtiment dt des Travaux Publics
33 avenue Kléber - 75784 PARIS CEDEX Tél. 01 40 69 53 41 Fax : 01 40 69 53 40

NUMERO	TITRE	SECTEUR	CLASSEMENT	ECHEANCE	RNCP
046 – 2004 09 21	OUVRIER MONTEUR EN ISOLATION THERMIQUE INDUSTRIELLE	BATIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2012	
047 – 2004 09 21	COMPAGNON MONTEUR EN ISOLATION THERMIQUE INDUSTRIELLE	BATIMENT	N. III – P. 1 CCN OUVRIERS	DÉCEMBRE 2012	
048 – 2004 11 30	AGENT TECHNIQUE DE MONTAGE EN INSTRUMENTATION	TRAVAUX PUBLICS	N. III - P. 1 CCN OUVRIERS	DÉCEMBRE 2012	
049 – 2005 03 15	PEINTRE ANTI-CORROSION	BATIMENT	N. II – CCN OUVRIERS	DÉCEMBRE 2013	JUILLET 2013
050 – 2005 09 29	COMPAGNON PROFESSIONNEL MAÇON DU PATRIMOINE	BATIMENT	N. III – P. 1 CCN OUVRIERS	DÉCEMBRE 2014	
051 – 2005 12 20	RESPONSABLE D'EQUIPE EN ISOLATION THERMIQUE	BATIMENT	N. IV – P. 1 CCN OUVRIERS	DÉCEMBRE 2013	
0531 - 2005 12 20	APPLICATEUR DE REVÊTEMENTS ROUTIERS OPTION ENROBÉS	TRAVAUX PUBLICS	N. II – P. 1 CCN OUVRIERS	DÉCEMBRE 2013	
0532 - 2005 12 20	APPLICATEUR DE REVÊTEMENTS ROUTIERS OPTION ENDUITS SUPERFICIELS	TRAVAUX PUBLICS	N. II – P. 1 CCN OUVRIERS	DÉCEMBRE 2013	
055 – 2005 12 20	BARDEUR	BÂTIMENT	N. II – CCN OUVRIERS	DÉCEMBRE 2013	
056 – 2005 12 20	APPLICATEUR D'ASPHALTES	BTP	N. II – CCN OUVRIERS	DÉCEMBRE 2013	
0571 – 2005 12 20	ETANCHEUR – BÉTON/BITUMINEUX	BÂTIMENT	N. II – CCN OUVRIERS	DÉCEMBRE 2013	
062 – 2006 03 15	INSTALLATEUR – MAINTENEUR EN SYSTEMES SOLAIRES THERMIQUES ET PHOTOVOLTAÏQUES	BÂTIMENT	N. IV – P. 1 CCN OUVRIERS	DÉCEMBRE 2014	AVRIL 2011
063 – 2006 06 26	SOLIER COMPAGNON HAUTEMENT QUALIFIE	BATIMENT	N. III - P. 2 CCN OUVRIERS	DÉCEMBRE 2012	JANVIER 2014
064 – 2007 04 03	FOREUR D'EAU	TRAVAUX PUBLICS	N. II - P. 2 CCN OUVRIERS	DÉCEMBRE 2015	
065 – 2007 04 03	CHEF FOREUR D'EAU	TRAVAUX PUBLICS	N. F CCN ETAM	DÉCEMBRE 2010 NON RENOUVELE	
066 - 2007 04 03	MONTEUR DE LIGNES CATENAIRES	TRAVAUX PUBLICS	N. II P. 1 COEFF 125 CCN OUVRIERS	DÉCEMBRE 2013	
067-2007 11 29	CHEF D'ÉQUIPE ANTI-CORROSION	BATIMENT	N. IV – P. 1 COEFF 205 CCN OUVRIERS	DÉCEMBRE 2010 NON RENOUVELE	
068-2007 11 29	APPLICATEUR EN PRESTATIONS DE SIGNALISATION ROUTIÈRE HORIZONTALE	TRAVAUX PUBLICS	N. II – P. 1 CCN OUVRIERS	DÉCEMBRE 2015	
069-2007 11 29	CHEF APPLICATEUR EN PRESTATIONS DE SIGNALISATION ROUTIÈRE HORIZONTALE	TRAVAUX PUBLICS	N. III – P. 1 CCN OUVRIERS	DÉCEMBRE 2015	
070-2008 12 05	APPLICATEUR EN TRAITEMENTS CURATIFS DES BOIS EN ŒUVRE ET DES CONSTRUCTIONS	BATIMENT	N. II – CCN OUVRIERS	DÉCEMBRE 2016	
071-2008 12 05	CHARGE D'AFFAIRES JUNIOR EN METALLERIE	BATIMENT	N. E CCN DES ETAM	DÉCEMBRE 2016	
072-2008 12 05	POSEUR DE VOIES FERREES	TRAVAUX PUBLICS	N. II – P. 1 COEEF 125 CCN OUVRIERS	DÉCEMBRE 2016	
073-2010 03 04	MONTEUR DE PLAFONDS SUSPENDUS	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2013	
074-2010 03 04	ASSISTANT TECHNICIEN DE CHANTIER COUVERTURE ET/OU PLOMBERIE	BÂTIMENT	N. D CCN ETAM	DÉCEMBRE 2013	
075-2010 03 04	OUVRIER PROFESSIONNEL EN PIERRE SÈCHE	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2013	
076-2010 06 03	ASSISTANT ADMINISTRATIF DU BTP	BATIMENT ET TRAVAUX PUBLICS	N. E CCN ETAM	DÉCEMBRE 2013	
077 - 2010 12 15	INSTALLATEUR DE PANNEAUX SOLAIRES THERMIQUES ET PHOTOVOLTAÏQUES EN COUVERTURE	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2013	
078- 2010 12 15	BATTEUR DE PROFILÉS MÉTALLIQUES	TRAVAUX PUBLICS	N.II P.1 OUVRIERS	DÉCEMBRE 2013	
079 - 2011 04 28	BOUTEFEU	TRAVAUX PUBLICS	N.II P. 1 CCN OUVRIERS	DÉCEMBRE 2014	
080 - 2011 04 28	MAITRE BOUTEFEU	TRAVAUX PUBLICS	N. E CCN ETAM	DÉCEMBRE 2014	
081 - 2011 04 28	OUVRIER PROFESSIONNEL COUVREUR CHAUMIER	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2014	
082 - 2011 06 28	CONDUCTEUR DE TRAVAUX EN MENUISERIE DE BÂTIMENT ET AGENCEMENT	BÂTIMENT	N. E CCN ETAM	DÉCEMBRE 2014	
083.2011 11 22	FAÇADIER ITEISTE	BÂTIMENT	N. II CCN OUVRIERS	DÉCEMBRE 2014	
084.2011 11 22	POSEUR DE CANALISATIONS OPTION ADDUCTION D'EAU POTABLE	TRAVAUX PUBLICS	N. II – P. 1 COEEF 125 CCN OUVRIERS	DÉCEMBRE 2014	
085.2011 11 22	POSEUR DE CANALISATIONS OPTION ASSAINISSEMENT	TRAVAUX PUBLICS	N. II – P. 1 COEEF 125 CCN OUVRIERS	DÉCEMBRE 2014	
010 – 98 09 25	MAÎTRE D'APPRENTISSAGE CONFIRMÉ	BTP			

CERTIFICAT DE MAÎTRISE PROFESSIONNELLE					
011 - 2000 06 15	CMP MAÇONNERIE – GROS ŒUVRE	BÂTIMENT	N. 4 – P. 1 CCN B		
012 - 2000 06 15	CMP MENUISERIE	BÂTIMENT	N. 4 – P. 1 CCN B		
013 - 2000 06 15	CMP GÉNIE CLIMATIQUE	BÂTIMENT	N. 4 – P. 1 CCN B		
014 - 2000 06 15	CMP CHARPENTE	BÂTIMENT	N. 4 – P. 1 CCN B		
015 - 2000 06 15	CMP PEINTURE FINITION	BÂTIMENT	N. 4 – P. 1 CCN B		
021 - 2001 04 04	CMP CARRELAGE – REVÊTEMENT MOSAÏQUE	BÂTIMENT	N. 4 – P. 1 CCN B		
022 - 200	CNE Conseil du Bâtiment et des Travaux Publics 33 avenue Kléber - 75784 PARIS CEDEX Tél. 01 40 69 52 44 Fax : 01 40 69 52 40	TRAVAUX PUBLICS	N. 4 – CCN TP		

Source: http://www.metiers-btp.fr/reperes/diplomes-titres-et-certificats/certificats/Documents/liste-cqp.pdf

7.5 ONGOING TRAINING PROVISION BY PROFESSIONAL GROUP

7.5.1 Training provision for craftsmen and businesses

Based on the ADEME/CAFOC Nantes[12] study below:

L'offre de formation pour les artisans et entreprises

Le professionnel, artisan ou salarié, se doit de respecter de plus en plus de normes et de disposer d'habilitations pour délivrer un service de qualité. L'offre de formation continue est en très forte croissance avec des actions courtes centrées sur l'acquisition de gestes professionnels ou de techniques spécifiques et des formations longues certifiantes en émergence.

Nombre d'actions	Publics	Thèmes traités	Modalités pédagogiques	Durée	Prix	Lieu	Prestataires
Plusieurs centaines d'offres - voire plus d'un millier d'offres. Cette profusion de l'offre est liée au poids des certifications obligatoires, labels ou « signes de qualité » tels que QUALISOL, QUALIPV, QUALIBAT, MINERGIE et ses déclinaisons, EFFINERGIE, PROMOTELEC, QUALIBOIS, QUALICOMBI…sans compter les diverses normes NF, HQE	Artisans et salariés du bâtiment	Un poids inégal des formations : *Le poste **Chauffage /Energies/Thermique** est le plus fourni avec des actions isolées ou incluses dans des dispositifs, formations certifiantes (CQP, diplômes ou titres), *Le poste **Isolation** arrive en second. *L'**enveloppe** du bâtiment : bois, terre, enduits et matériaux mis en association, En revanche, *Les techniques **d'étanchéité** et **d'infiltrométrie**, ne génèrent pas une offre de formation très importante. *Le **Diagnostic** : deux types de formation apparaissent : celles de longue durée destinées aux diagnostiqueurs certifiés de l'immobilier ; celles de courte durée, destinées à réaliser le DPE	Les trois modalités de formation sont présentes mais avec la dominante des actions courtes. La situation des formations certifiantes est en pleine évolution. Des Certificats de qualification professionnelle (CQP) se développent. Des certifications traditionnelles incluent des contenus liés aux ENR. En matière de cycles ou de dispositifs de formation, une référence domine le marché : FEEBAT Enfin l'offre des actions courtes est très abondante.	Les durées varient de 1 jour, 2 jours, 3 à 5 jours pour des actions isolées ou faisant partie d'un dispositif plus élaboré.	Le prix est de 100€ à 500€ / jour en moyenne.	L'offre, en général, est présente sur tout le territoire. Les organismes nationaux ou locaux offrent souvent la possibilité d'organiser des actions dans d'autres régions. Le Sud et le Sud-Est semblent très actifs sur certaines techniques (murs, toit, solaire…).	De très nombreux prestataires en relation directe avec le secteur bâtiment ou appartenant à des réseaux de formation professionnelle, des organisations représentant les professions, des associations, des organismes privés, des cabinets, des fabricants, des distributeurs… Toutes les tailles d'organismes de formation sont présentes sur ce marché très ouvert, depuis le consultant ou la structure professionnelle issue du métier, en passant par les « militants » ou « experts », jusqu'à l'entreprise multinationale de fabrication telle ISOVER (Saint-Gobain) qui a ouvert un nouveau centre de formation à destination des professionnels.

Si les formations courtes ne sont pas certifiantes au sens du RNCP car elles ne délivrent le plus souvent que des attestations de présence, elles permettent cependant l'accès aux labels et habilitations qui conditionnent l'activité de nombreux professionnels.
Nous observons une sorte d'empilement des certifications qui, si elle contribue sans doute à améliorer la qualité des formations, ajoute une brique de complexité à la lecture de l'offre de formation.

L'explosion de l'offre s'explique également par la prise de conscience des attentes sociétales et de la demande sociale mais également par l'évolution technologique. L'apparition d'outils informatiques conduit à développer des compétences nouvelles. Leur appropriation est un passage obligé qui mobilise les fabricants et distributeurs qui élargissent leur offre de service. Ces fabricants et distributeurs développent en effet une offre importante autant pour leurs salariés que pour leurs clients.

[12] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2010

7.5.2 **Other quantitative data**

Artisans
Année 2010

Source : A2C-FFB/FAFCEA

Coût pédagogique

Nature du stage	Coût pédagogique payé			Coût pédagogique moyen pris en charge			Coût pédagogique horaire par exercice		
	Individuel	Collectif	Total	Individuel	Collectif	Total	Individuel	Collectif	Total
Technique	7 138 258	8 060 139	15 198 397	621	550	581	30	34	32
Gestion et info	373 574	300 706	674 280	470	367	418	30	29	30
Culture générale	300	25 921	26 221	300	471	468	15	28	28
Form. diplômante	253464	208 975	462 439	3 425	3 073	3 527	8	39	11
TOTAL	7 765 596	8 595 741	16 361 337	628	551	585	27	33	30

Durée des actions de formation

Durée des actions de formation	Nombre de stagiaires pour l'année 2010
Moins de 8 heures	4 521
De 8 à 14 heures	12 384
De 15 à 35 heures	8 375
Plus de 35 heures	2 673
TOTAL	27 953

Statut des stagiaires

Statut des stagiaires	Artisans	Conjoints non salariés	Auxiliaires familiaux	Total
Hommes	26 999	143	7	27 149
Femmes	577	223	4	804
TOTAL	27 576	366	11	27 953

Nombre de stagiaires et heures de formation par nature de stage

Nature du stage	Nombre de stagiaires			Nombre d'heures de formation prises en charge par le FAF			Durée moyenne des actions de formation prises en charge par le FAF		
	Individuel	Collectif	Total	Individuel	Collectif	Total	Individuel	Collectif	Total
Technique	11 488	14 053	26 141	236 652	238 819	475 471	21 h	16 h	18 h
Gestion et info	794	820	1 614	12 535	10 220	22 755	16 h	12 h	14 h
Culture générale	1	55	56	20	912	932	20 h	17 h	17 h
Form. diplômante	74	68	142	33 616	7 206	40 822	454 h	106 h	287 h
TOTAL	12 357	15 596	27 953	282 823	257 157	539 980	23 h	16 h	19 h

(Source: Social indicators from the FFB 2012. - Corrected table)

In 2010, 27,953 skilled craftsmen took part in continuing training and 26,141 in technical areas.

Entreprises de moins de 10 salariés

Année 2010

Source: A2C-FFB

Plan de formation

	2009	2010	Variation en %
Montant des dépenses engagées*	83 673	98 760	+ 18,03
dont ouvriers	66 638	79 008	+ 18,56
dont Etam/cadres	17 035	19 752	+ 15,94
Nombre de stagiaires	51 681	58 673	+ 13,52
dont ouvriers	38 071	43 509	+ 14,28
dont Etam/cadres	13 610	15 164	+ 11,41
Nombre d'heures de formation	3 055 216	3 241 952	+ 6,11
dont ouvriers	2 363 870	2 074 850	- 12,22
dont Etam/cadres	691 346	1 167 102	+ 68,88

Entreprises de 10 salariés et plus

Année 2010

Source : OPCA Bâtiment

Plan de formation

	2009	2010	Variation en %
Montant des dépenses engagées*	48 012	43 673	- 9,03
dont ouvriers	19 087	16 728	- 12,36
dont Etam/IAC	28 925	26 945	- 6,84
Nombre de stagiaires	61 550	52 929	- 14
dont ouvriers	29 644	25 041	- 15,52
dont Etam/IAC	31 906	27 886	- 12,59
Nombre d'heures de formation	1 100 000	921 000	- 16,27
dont ouvriers	554 000	457 000	- 17,50
dont Etam/IAC	546 000	464 000	- 15

Fonds mutualisés et financements extérieurs

	2009	2010	Variation en %
Montant des dépenses engagées*	64 538	58 969	- 8,64
dont ouvriers	35 703	30 957	- 13,29
dont Etam/IAC	28 835	28 012	- 2,85
Nombre de stagiaires	78 687	75 922	- 3,5
dont ouvriers	47 594	45 892	- 0,5
dont Etam/IAC	31 093	30 030	- 3,4
Nombre d'heures de formation	1 991 000	1 676 000	- 15,82
dont ouvriers	1 203 000	992 000	- 17,52
dont Etam/IAC	788 000	684 000	- 13,59

Total

	2009	2010	Variation en %
Montant des dépenses engagées*	112 550	102 642	- 8,80
dont ouvriers	54 790	47 685	- 12,96
dont Etam/IAC	57 760	54 957	- 4,85
Nombre de stagiaires	140 237	128 851	- 8,11
dont ouvriers	77 238	70 933	- 8,16
dont Etam/IAC	62 999	57 916	- 8,06
Nombre d'heures de formation	3 091 000	2 597 000	- 15,98
dont ouvriers	1 757 000	1 449 000	- 17,52
dont Etam/IAC	1 334 000	1 148 000	- 13,94

* K d'euros

(Source: Social indicators from the FFB 2012. - Corrected table)

In 2010, 114,442 “salaried workers” took part in continuing training.

7.6 CURRENT QUALITY RECOGNITION SCHEMES

Quality recognition schemes (certification and qualification emblems, designations, labels, etc.) act as signposts to indicate the ability of **key actors in the construction sector** to provide a specific service, along with the quality of their management system or services.
They also drive training initiatives.
There are a number of different types of scheme to recognise quality, focusing in particular:

- On the skills of firms or the skills of individuals, to confirm the proficiency of a service provider in a particular activity or specialism, on the basis of a qualifications framework, certifications framework or commitment to a charter.

7.6.1 Quality recognition emblems for firms

Quality recognition emblems in relation to skills[13] are signposts that are used to confirm the ability of the firms to which they are awarded, to provide specific services and the resources they have available, based on predefined criteria.
There are **three types of quality emblem** used to acknowledge a firm's skills in the field of energy efficiency:

1. Designation/label confirming the firm's skills.
2. Qualification confirming the firm's skills.
3. Certification confirming the firm's skills.

- Designations/labels relating to a firm's skills – (see Appendix 1)

The designation or quality label is a distinctive sign of quality, issued to a **firm**, relating to its skills in a particular area of activity.

Professional labels and designations are generally created at the instigation of **branches of professional activity**, which also manage them. Some of them delegate the management of their schemes to **third-party organisations.**

The requirements for displaying a designation or label are less stringent than for a qualification and a fortiori a certification, and are not systematically checked. On the other hand, a designation or label can be the first step towards professional commitment.

[13] **Agence Qualité Construction.** www.qualiteconstruction.com

Access and award conditions

The organisation that issues the label or designation must check the firm's ability to satisfy the requirements set out in a charter of commitment.

The awarding of a label or designation must be based on clearly defined procedures, including a specific set of rules including entry, renewal and exclusion criteria and in some cases, more stringent procedures such as audits (either systematic or random with notice) and/or self-assessment tools.

To be awarded a designation or label, a firm must fulfil some or all of the following criteria, depending on the particular scheme:

- Legal criteria (existence as a legal entity, insurance, etc.).
- Technical criteria related to resources (human and material) and the company's references. A designation or label is awarded on the basis of an application.

To be awarded a designation or label, a firm must follow all or part of the following procedure, depending on the particular scheme:

- File a membership application.
- Sign a charter of commitment.
- Take a knowledge-based test or obtain a QCM.
- Possible audits.

In general, designations remain valid for three years and must be renewed.

As part of the renewal process, the organisation must check that the criteria defined in the guidelines are still being met.

➨ Qualification confirming the firm's skills **– (cf Appendix 2)**

A qualification is awarded by a third-party **qualification organisation**, including representatives of clients, professionals, institutions and the public authorities, with no one set of interests dominating.
The organisation may be accredited by the COFRAC (*Comité Français d'Accréditation* – French Accreditation Committee) on the basis of French standard NF X50-091, confirming the independence, transparency and impartiality of its qualification process.
According to standard NF X50-091, in order to award qualifications a qualification organisation must rely on:

- A list of activities defining the technical content of the services covered by the various qualifications.
- A framework setting out the criteria and requirements candidates must meet to achieve the qualification.
- Objective and rigorous awarding, monitoring and renewal procedures for qualifications.

Access and award conditions

To obtain a qualification, a firm must satisfy the following criteria:

- Legal and administrative criteria (existence as a legal entity, compliance with administrative requirements, insurance, etc.).
- Financial criteria.
- Technical criteria related to resources (human, material and methodological) and the company's references. A qualification is awarded on the basis of an application following a documentation check.

The qualification procedure must include the following steps:

- Submission of an application.
- Examination of the acceptability of the application.
- Examination of the application (by one or more competent examiners).
- Possible audits.
- Decision to award (by an examination committee or board).
- Issue of a dated certificate of qualification (or notification of refusal).

It is valid for a maximum of four years.

The qualification organisation carries out an annual inspection (based on documentation) to ensure that the qualification criteria are still being met (legal criteria and maintenance of human resources).

If the inspection is satisfactory, an updated certificate of qualification is sent to the business.

Once it reaches the end of its period of validity, the qualification must be renewed on the same terms as an application for an initial award.

Note that a provisional qualification may be awarded to a firm that does not yet have any references, or does not have enough (such as newly created firms or businesses that are trying to diversify) but which satisfies the other qualification criteria.

➨ Certification confirming the firm's skills – **(cf Appendix 3)**

A certificate of skills is awarded to a firm by a third-party **certification organisation**, including representatives of clients, professionals, institutions and the public authorities, with no one set of interests dominating.

The organisation may be accredited by the COFRAC (Comité Français d'Accréditation – French Accreditation Committee) on the basis of French or international standards, confirming the independence, transparency and impartiality of its certification process.

To award certificates, a certification organisation must rely on:

- A framework setting out the criteria and requirements candidates must meet to achieve the qualification.
- Objective and rigorous awarding, monitoring and renewal procedures for certifications.

Access and award conditions

To obtain a certificate of skills, a firm must satisfy the following criteria:

- Legal and administrative criteria (existence as a legal entity, compliance with administrative requirements, insurance, etc.).
- Financial criteria.
- Technical criteria related to resources (human, material and methodological) and the company's references.

A certificate is awarded on the basis of an application following a documentation check and an on-site audit (at the firm's premises and/or at the work site).

The certification procedure must include the following steps:

- Submission of an application,
- Examination of the acceptability of the application,
- Examination of the application (by one or more competent examiners),
- Systematic audits,
- Decision to award (by an examination committee or board),
- Issue of a dated certificate of qualification (or notification of refusal).

It is valid for a maximum of four years.
The certification organisation carries out an annual inspection (based on documentation) to ensure that the certification criteria are still being met (legal criteria and maintenance of human resources).
If the inspection is satisfactory, an updated certificate of qualification is sent to the business.
Once it reaches the end of its period of validity, the certification must be renewed on the same terms as an application for an initial award.

7.6.2 Quality recognition emblems for individuals

Quality recognition emblems in relation to individual skills[14] are signposts that are used to confirm the ability of an **individual** to provide specific services, based on predefined criteria.
In terms of recognising the skills of individuals in the field of energy efficiency, there is a certificate of individual skills.

- Individual certificates of skills – **(cf Appendix 4)**

Many individual certificates of skills are regulatory in nature.
This certificate of skills is awarded to an individual by a third-party certification organisation, including representatives of clients, professionals, institutions and the public authorities, with no one set of interests dominating.

[14] **Agence Qualité Construction.** www.qualiteconstruction.com

The organisation may be accredited by the COFRAC (Comité Français d'Accréditation – French Accreditation Committee) on the basis of French standard NF EN ISO/CEI 17024, confirming the independence, transparency and impartiality of its certification process.
Applicants for individual certificates of skills must satisfy requirements in relation to training and experience.
Their skills are verified by oral and/or written examinations.

Access and award conditions

To be awarded a certificate, an individual must satisfy technical criteria based on their training (qualifications) experience and personal references.
An individual certificate is awarded after verification based on written and/or oral examinations.

The certification procedure includes the following steps:

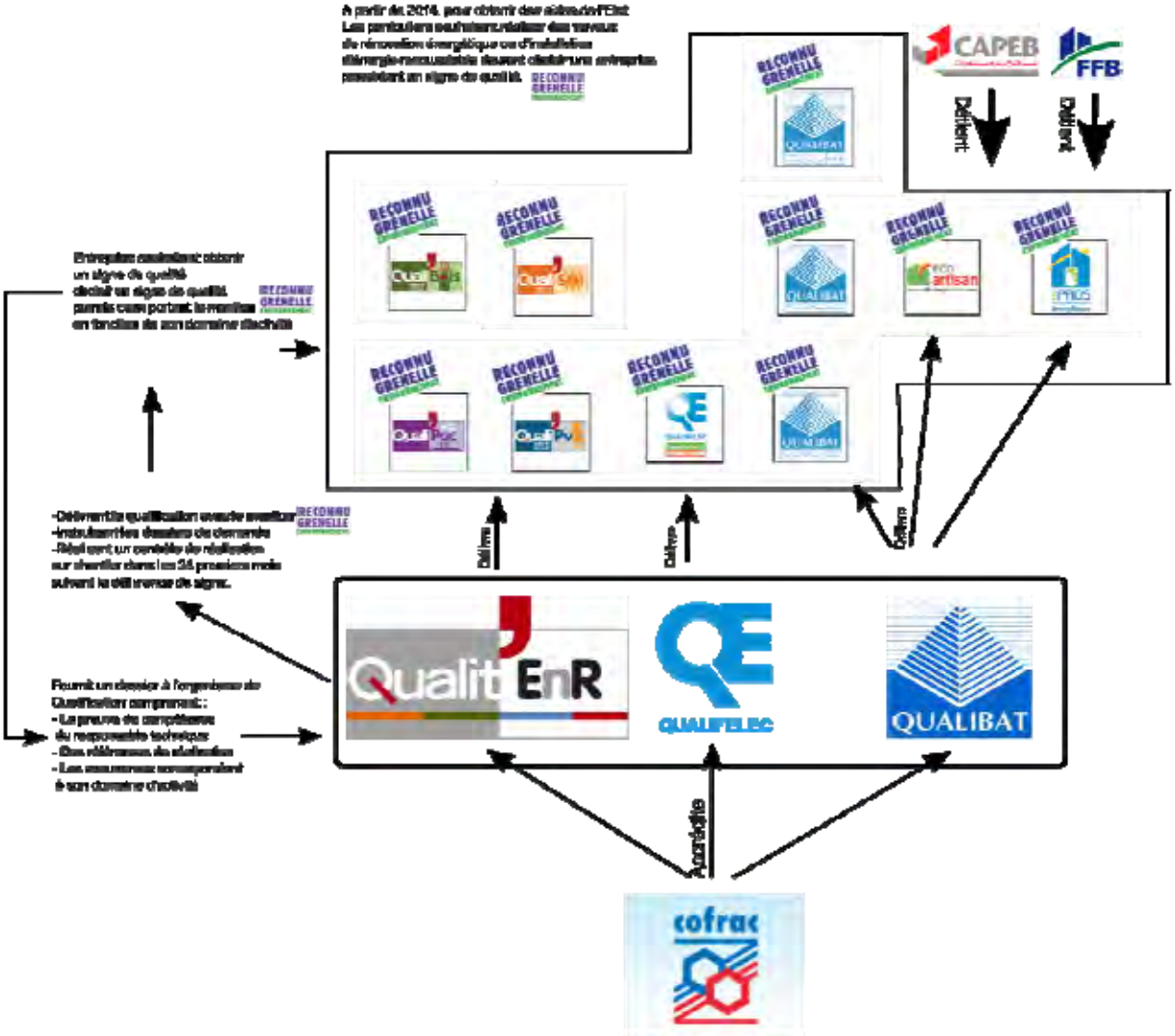
- Submission of an application,
- Examination of the acceptability of the application,
- Examination of the applicant,
- Examination (by an examination committee or board),
- Decision to award (by an examination committee or board),
- Issue of a dated certificate (or notification of refusal).

Its period of validity is limited: generally from four to a maximum of five years.
During the period of validity of the certificate, the holder undertakes to notify the certifying organisation of any change in their professional practice.
The certification organisation carries out an inspection (generally based on documentation) to ensure that the certification criteria are met during the certificate's period of validity.
Once it reaches the end of the period of validity, the certification must be renewed. Renewals are generally based on the same terms as an application for an initial award.

7.6.3 **The “Reconnu Grenelle Environnement” label**

(cf Appendix 5)

- The principle



Introduced in November 2011, the RGE label is designed to distinguish existing quality emblems that satisfy all the requirements laid down in the charter as a minimum. Its primary aim is to provide a harmonised scheme for individuals, to identify the quality emblems that meet the requirements set by the public authorities.

It is not awarded directly to firms but to the qualifications and quality emblems awarded to firms carrying out work to improve the energy performance of buildings or installing renewable energy systems.
A company that wishes to apply for a quality emblem including the RGE label can contact one of the qualification organisations that has currently signed up to the scheme (namely QUALIBAT, QUALIFELEC and Qualit’EnR) to request an application pack. The qualification organisation then monitors the firm as it moves through the process of obtaining the quality emblem for the activity concerned. It is not the role of the public authorities to take on the responsibilities of the qualification organisations.

The French Ministry for Ecology, Sustainable Development, Transport and Housing and ADEME are responsible for checking that the requirements of the charter have been implemented.

A committee consisting of a representative of each of the signatory organisations meets at least once a year to monitor the implementation of the charter, make any changes required and check the economic impact of its commitments.
An annual review of the implementation of the requirements of the charter and the number of firms with quality emblems including the RGE label will be carried out by a monitoring committee, primarily on the basis of feedback provided by the qualification organisations and the professional organisations that have signed up to the charter.

Accreditation by COFRAC

For a transitional period, all the quality emblems listed in the charter of 9 November 2011 and including the “Reconnu Grenelle Environnement” label from the date on which it was signed, including for firms that have already been awarded the emblems and which will be subject to the new measures as they renew their qualification or quality emblem. Quality emblems that are not qualifications or which do not require a previous qualification (accredited by the COFRAC) will need to change by 1 January 2014. This is the case with the CAPEB and FFB, in particular, which signed the RGE charter for their respective quality emblems *ECO Artisan* and *Pros de la performance énergétique*, which will need to be changed into qualifications or be backed by a qualification accredited by the COFRAC by 1 January 2014.
The aim is to ensure that:
Only qualifications accredited by the COFRAC on the basis of French standard NFX 50-091 and the RGE charter, or quality emblems that require a prior qualification based on the same requirements are entitled to use the “Reconnu Grenelle Environnement” label.
The COFRAC accreditation procedure will provide a verification of the qualification organisation by an independent third party. Since early 2012, the qualification organisations that have signed the charter have been required to request modifications or extensions to their accreditation in accordance with French standard NF X50-091, in order to comply with RGE requirements. The requirements defined for the RGE label supplement or qualify the standard itself.

Recognised quality emblems

QUALIBAT and Qualifelec have both signed the RGE charter. This means that both organisations award qualifications that are entitled to use the RGE label. It does not mean, however, that all qualifications awarded by QUALIBAT or Qualifelec are entitled to use it.
Specifically:

- The QUALIBAT qualifications entitled to use the RGE label are only those related to renewable energy (photovoltaic, thermal solar thermal, heat pumps and wood) and to energy efficiency (packages of work, energy efficiency labels on qualifications for isolated works and comprehensive energy efficiency renovation packages).

- The Qualifelec qualifications entitle to use the RGE label are only those accompanied by the “energy savings” label or “photovoltaic solar” label offered by Qualifelec as an option to accompany a qualification in electrical engineering. This means that the professional concerned will also need to have been awarded one of these options.

To help people understand the scheme, QUALIBAT has created an ad hoc logo to identify its “energy efficiency and renewable energy” qualifications, as has Qualifelec to identify its “new energies – energy savings” qualifications.

!

As Qualit’ENR only awards qualifications in the area of renewable energy all of its qualifications are entitled to use the “Reconnu Grenelle Environnement” label.

Specific requirements

RGE qualifications and quality emblems are awarded for four years. The qualification organisation that awards the emblem carries out an annual check on compliance with legal, financial and administrative criteria (insurance, balance sheet, etc.) and the retention of human resources.

In addition, the qualification organisation must require that the firm carries out a minimum of two installations every two years.

For a quality emblem to be entitled to use the RGE label, the qualification organisation must require that the firm appoint one or more technical managers. The firm must provide evidence of their skills on the basis of several distinct means.

For energy efficiency renovation works:

- Training leading to the award of a qualification and/or diploma including an assessment,
- Or an assessment, which may or may not be preceded by continuing training;
- Or taking continuing training run under the FEE Bat scheme or equivalent.

An accreditation procedure for training and examinations is currently being defined by the public authorities for works to install equipment using a renewable energy source, in order to take account of the provisions of the Directive on the promotion of the use of energy from renewable sources (2009/28/EC).

The firm undertakes to inform the qualification organisation in the event of a technical referee leaving or changing. The firm then has six months to appoint a new technical referee and provide evidence of their skills (training, etc.). Failure to comply with this deadline will mean that the qualification is suspended or withdrawn.

The qualification organisation must require that the firm agree to a performance assessment on a current or completed site. The aim of the assessment is to check that the work carried out complies with current standards in the industry, along with certain aspects of the service provided by the firm to its client, for example: provision of a detailed description, the acceptance report, guarantees, a detailed invoice and any statements required in order to obtain state subsidies. If the work relates to an overall energy efficiency renovation programme, the energy audit carried out must also be provided.

Defining the technical points of the performance assessment is left to the discretion of the qualification organisations.
A performance assessment must be carried out at least once during the period of validity of a quality emblem (which, in accordance with French standard NF X50-091, is a maximum of four years) and within the first 24 months of the emblem being awarded at the latest. If the firm wishes to retain the quality emblem at the end of its period of validity, it must agree to a further performance assessment as part of the renewal procedure, which must be defined by the qualification organisation.
Should a problem arise with an installation, it is possible to submit a complaint to the qualification organisation, which may result in the quality emblem being suspended or withdrawn.

7.6.4 The sole accreditation provider in France: THE COFRAC – Comité français d'accréditation (French accreditation committee)[15]

Introduction

Created in 1994 under the French non-profit associations law of 1st July 1901, the COFRAC was designated as the **only national accreditation body** by the decree of 19 December 2008, thus recognising the public authentication role played by accreditation.

The various parties with an interest in accreditation are represented through the COFRAC's active members, who are split as follows across the three colleges that make up its Board of Directors and General Assembly:

College A	accredited organisations and consortia
College B	professional groupings of firms or people or organisations representing buyers who use or might use the services of the organisations in college A.
College C	representatives of public interests (such as central government, government agencies, national institutes, consumer, user or environmental protection associations) who either play a leadership role or work to defend collective interests

Qualified individuals are admitted as associate members.
The COFRAC has over 100 members.

Four sections manage accreditations:

1. The Laboratories section, which is in turn made up of four divisions: Biology & Biochemistry, Chemistry & Environment, Mechanics and Physics & Electricity
2. Inspection section
3. Certifications section
4. Human health section

[15] **Comité Français d'Accréditation.** www.cofrac.fr

The COFRAC regularly commissions around 200 quality assessors and over 1000 technical assessors.

The COFRAC does not have any affiliated organisations other than the employers of the external assessors it uses.

Purpose

In 1994, when the COFRAC was created, the aim of the public authorities was to create a “Euro-compatible” system in line with European and international practices in relation to the accreditation of compliance-assessment organisations, with a view to encouraging mutual recognition of the services provided by accredited organisations. The COFRAC therefore sits at the top of the pyramid of trust the public authorities aimed to create.

Mission

- Validate the skills and relevance of quality organisations.

  The process that leads to accreditation is a rigorous one. There are multiple steps to go through, from receipt of the application to the final decision, including: a preliminary analysis of the application, defining the assessment programme, setting up the assessment team, carrying out the assessment, drafting and analysing the report and finally, reaching the decision and issuing the accreditation.

- Determine a field of accreditation for a defined period.

  Accreditation is not applied to a firm as a whole nor for an indefinite period. It is granted for a specific field or area of skills, for particular geographical locations and for a renewable defined period, during which monitoring audits will take place.

Distinction between Accreditation and Certification

Accreditation = a statement issued by a third party, related to a compliance-assessment organisation, constituting formal recognition of the organisation’s skills to carry out specific compliance-assessment activities.

Certification = statement made by a third party relating to products, processes, systems or people.

As a consequence, accreditation organisations (the COFRAC in France) is responsible for verifying verification organisations, including organisations that issue certifications. Certifications are designed to establish the compliance in relation to the specified requirements of particular products or services (for example, organic agriculture, Label rouge [poultry] products, NF [French standards], PEFC [forestry management], etc.), management systems (for example, ISO 9001, ISO 14001, ISO 15189, etc.), and individuals (for example, auditors, property assessors, etc.).

Accreditation involves using not only quality assessors but also technical experts. Accreditation is only valid for a specific area of skills.

7.7 CURRENT SCHEMES FOR DEVELOPING SKILLS IN IMPLEMENTING ENERGY EFFICIENCY AND RENEWABLE ENERGY MEASURES IN BUILDINGS

7.7.1 FEE BAT scheme

Launched in early 2008, the FEE Bat scheme “Energy savings training for building firms and craftsmen” aims to give firms and craftsmen in the building sector the cross-disciplinary knowledge and tools needed for:

- A comprehensive analysis of energy performance when constructing or renovating residential or commercial buildings.
- More relevant advice for clients, including trades which the firm does not offer itself.
- Proposal and implementation by the firm or craftsman either alone or in conjunction with other trades, of more comprehensive solutions in terms of energy savings, incorporating building insulation, ventilation, high-performance equipment, renewable energies, maintenance, etc.

The aim of the scheme is to increase and systematise the degree to which energy-related aspects are taken into account in all building renovation work, based on high-performance technologies and innovative solutions.

The initial aim of the scheme was to train 50,000 professionals. An agreement, signed on 14 June 2010 between the Ministry, ADEME, the ATEE, the CAPEB, the FFB, the FNSCOP and EDF increased the target number of trainees to 120,000 in response to the objectives set during the Grenelle de l’environnement (environmental forum).

The principles of this national training scheme are as follows:

- It makes use of existing professional continuing training organisations in the building sector (both training organisations and organisations that provide financing for training).
- Volunteer energy suppliers undertake to give financing organisations ring-fenced funding for energy-savings training in the building sector.
- Organisations providing financing for training use these funds to cover the costs of training carried out in this area.
- Energy-savings certificates are awarded on the basis of evidence of training completed using funding provided on a voluntary basis by energy suppliers.
  (Data provided by the FEE Bat unit)

- Organisation

  - A Steering Committee, made up of representatives of stakeholders in the scheme (public authorities, professional organisations in the building sector and funding partners), organises and monitors the introduction and operation of the scheme.
  - The ATEE is appointed by the members of the Steering Committee to coordinate the scheme.
  - An Operational Unit, managed by the Steering Committee, is responsible for the operational implementation of the scheme. This is made up of the human resources made available by the scheme's partners, namely ADEME, the ATEE, the CAPEB, EDF and the FFB.
    (Data provided by the FEE Bat unit)

- Training provision

FEE Bat consists of a series of training modules, which are updated on an ongoing basis:

For residential buildings

Module 1* *(*a version of the module is available for the French overseas departments)*	Identify the key elements in an overall programme of energy improvements in existing buildings.
Module 2	Understand the tools required to implement a comprehensive improvement in building energy performance.
Module 3	Know, understand and implement the different types of high-performance technologies for improving the energy performance of buildings. Split into four sub-modules: - structural elements, - air treatment, - hot water solutions - implementation of building management systems (BMS)
Module 3 Old buildings	Implementation of solutions to improve the energy performance of old buildings
Module 4	Support services to improve the energy performance of residential buildings Split into two sub-modules: - using the results of thermal assessments to support the provision of energy improvement services - preparing to market and carry out energy-performance improvement work

For small and medium-sized commercial buildings

Module 1	Identify the key elements in an overall programme of energy improvements in existing buildings.
Module 3	Implement energy-performance improvement solutions in commercial buildings

For new buildings

Module 5	Construct low-energy residential buildings: RT2012 and permeability to air. Split into two sub-modules: - manage interfaces on a low-energy residential building site - produce low-energy residential buildings

Funding for training

FEE Bat training courses were 95% funded on a voluntary basis by EDF until 2010. Its contribution decreased to 75% in 2011 and 50% in 2012. Organisations responsible for managing funding for professional training cover all or part of the remainder, depending on the rules for funding professional training applicable within each organisation. *(Data provided by the FEE Bat unit)*

Training organisations

FEE Bat has been running at a steady pace throughout the country since 2008, with over 100 training organisations involved, and very high satisfaction rates amongst both the firms and craftsmen who have attended the courses, and end clients. The courses have triggered momentum for a long-term change in practices amongst firms and craftsmen who have attended them. *(Data provided by the FEE Bat unit)*

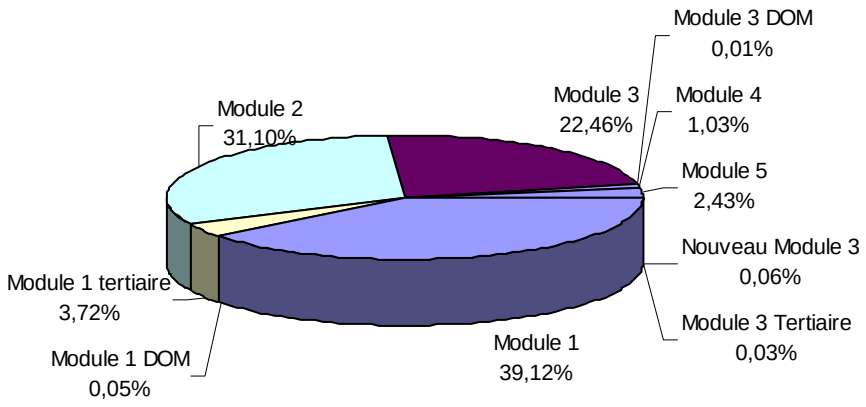
Trainees' assessment of courses.

Firms and craftsmen who have attended FEE Bat training courses indicate a very high level of satisfaction.
Overall, 88% of firms and craftsmen surveyed say they are satisfied with the courses, 42% of whom are very satisfied.
An average of 92% of those surveyed feel that the modules reflect the programmes provided and meet their expectations.
A survey carried with two panels of individuals who had had work carried out (one with a firm or craftsman who had taken an FEE Bat training course and the other with a firm or craftsman who had not taken an FEE Bat training course) corroborates the above results from trainees: professionals who have taken FEE Bat training courses are more likely to promote the potential for energy savings and are more proactive in their discussions with their clients on this topic (81% in the first panel took the initiative in raising the subject, compared with 57% in the second). They are more inclined to highlight their skills in this area and prompt a more enthusiastic response from the client. *(Figures provided by the FEE Bat unit)*

- Change in the name of people trained since the beginning of the scheme, breakdown by module and associated funding.

Based on information fed back to the unit in September 2012, almost 47,750 trainees have taken part in the FEE Bat scheme, broken down as follows:

Répartition globale par module



(Graph based on the FEE Bat ministerial review – 10 September 2012)

The number of professionals trained under the FEE Bat scheme is around 1,000 a month. All trades are covered by the scheme and attend the courses.

Professionals working with technical equipment, particularly in the “heating and plumbing” sector represent the highest proportion of attendees.

EDF has co-financed the scheme since its creation in 2008, providing €18.9 M for 22,000 trainees in 2008 and 2009 as part of the energy-savings certificates (ESC) scheme *(*see box on next page).*
EDF provided additional funding of €16.9 in 2010 and 2011, bringing the total to €35.8 M for the period 2008 to 2011 for almost 42,500 trainees. By the end of July 2012, the figure had increased to €40.1 M and by September 2012, almost 48,000 people had been trained since the beginning of the scheme.
It should be noted that EDF signed an agreement on 14 June 2010 to contribute to the training of a further 98,000 people between 2010 and the end of 2012 (bringing the total to 120,000), up to a maximum level of funding of €53 M.

In addition, the total cost of the FEE Bat scheme for ADEME (excluding salary costs) was €600,000 for communications and €121,000 for studies to evaluate the scheme. *(Figures provided by ADEME)*

Focus on:
(*) **Energy-Savings Certificates as a funding mechanism for training**
ESCs were created in 2005 under the finance act setting out France's long-term plans for energy policy (known as the POPE Act).
The energy suppliers are required to finance a number of energy-savings activities and receive certificates in return. Each supplier must reach its quota of certificates; if it fails to fulfil its obligations, it must pay a penalty for non-compliance.
Activities providing entitlement to certificates have been identified by the Ministry responsible for energy and published in the form of information sheets. Relevant activities mainly relate to building work (insulation, changing doors and windows, etc.) or installing equipment to use renewable energy sources). One activity relating to training craftsmen and building forms is included on the list. This is the FEE Bat training scheme. In effect, the hypothesis has been accepted that professionals trained in a global approach to energy savings were more effective in selling and carrying out work in this area than colleagues who had not been similarly trained, and that training therefore contributed to energy savings.
Note:
"The five themed workshops planned as part of the consultation for implementing the third period of the energy-savings certificate scheme (2014-2016) were held according to the schedule agreed at the launch on 14 May and resulted in many fruitful discussions. The aim of this first cycle of discussions is to come up with a shared definition of the key principles that will lay the foundations for the scheme in its third period. With this in mind, the DGEC now intends to submit a report to the Minister of Ecology, Sustainable Development and Energy, based on all the contributions made by the various stakeholders, covering – amongst other things – the scheme's operating methods, and defining a national energy savings target for the next period.
In view of the decisions to be taken, the first half of 2013 should be devoted to drafting the corresponding regulations: the aim is to publish these several months before the start of the third period to allow the stakeholders concerned to prepare for any changes to the scheme."[16]

7.7.2 Qualit'EnR training courses

A quality organisation has been introduced in France to support the smooth development of the energy revolution: Qualit'EnR[17].

Founded by five national professional bodies, since the beginning of 2006, Qualit'EnR has been the French association for the quality installation of renewable energy systems. Qualit'EnR promotes quality professional services and manages quality-related schemes and regulations related to the "Qualisol", "QualiPV", "Qualibois", and "QualiPAC" labels.

The number of labels awarded doubled between 2006 and 2010, increasing from 10,500 to almost 21,000 per year. A total of 16,564 labels were awarded in 2011. *(Based on data from Qualit'EnR activity reports)*

Creation of Qualit'EnR

Created by ADEME in 1999 as part of the Plan Soleil, the Qualisol brand brought together a national network of over 9,000 installers by the end of 2005. Qualisol has therefore become synonymous with high-quality installation for an increasing number of domestic solar equipment.

In practice, Qualisol has made a significant contribution to the spectacular growth of the solar heating market in mainland France over the last six years, and at the same time supported the emergence of a mature branch of activity that is well placed to respond to demand.

[16] **French Ministry of Ecology, Sustainable Development and Energy.** *"Energy savings certificates" newsletter, October 2012*

[17] **Qualit'EnR.** www.qualit-enr.org

Qualit'EnR was officially created in January 2006 to take over the management and development of the Qualisol label.

The five founders

The five national professional bodies who founded the scheme were:

- CAPEB - *Federation of small construction contractors and craftsmen*
- Enerplan - *Association professionnelle de l'Énergie Solaire* [French association of solar energy professionals]
- UECF-FFB - *Union des Entreprises de génie Climatique et énergétique de France - Fédération Française du Bâtiment* [Union of climate engineering and energy companies in France - French construction federation]
- UNCP-FFB - *Union Nationale de Couverture Plomberie - Fédération Française du Bâtiment* [National metal roofing union - French construction federation]
- SER - Renewable energy union.

Based on its experience with Qualisol for solar heating and in order to address the needs of other branches of activity in the renewable energies sector on the individual consumer market, Qualit'EnR launched the Qualibois brand for wood-fired heating equipment, the QualiPV brand for photovoltaic systems connected to the national grid and the QualiPAC brand for ground-source and air-source heat pumps. Qualit'EnR therefore now managed seven labels under four brands.

Training

Before they are entitled to use the label, firms must undertake training. Qualit'EnR has organised continuing training and introduced a set of measures to ensure the level of skills of installers. It is a system that demands rigorous quality standards, but which is bearing fruit.

Qualit'EnR has produced and updated a series of "generic" training courses for solar water heaters, combined solar systems, standalone devices, wood-fired heating boilers, photovoltaic generators and heat pumps.

Training is provided by nearly 150 training centres that are approved by Qualit'EnR and by manufacturers who have committed to a quality charter managed by Qualit'EnR: EFIQUACE for Qualisol CESI, EFIQUACOMBI for Qualisol SSC, EFIQUABOIS for Qualibois, EFIQUAPV for QualiPV and EFIQUAPAC for QualiPAC.
Thanks to the "generic" frameworks, courses are identical regardless of which training organisation is delivering it, i.e. a traditional training centre or a manufacturer who has signed up to an EFIQUA charter.

The **seven frameworks** produced by Qualit'EnR in 2010:

1- Framework Individual solar water heater (CESI)
Course duration: 3 days (including 1 day of practical work)

2- Framework Combined solar system (SSC)
Course duration: 3 days

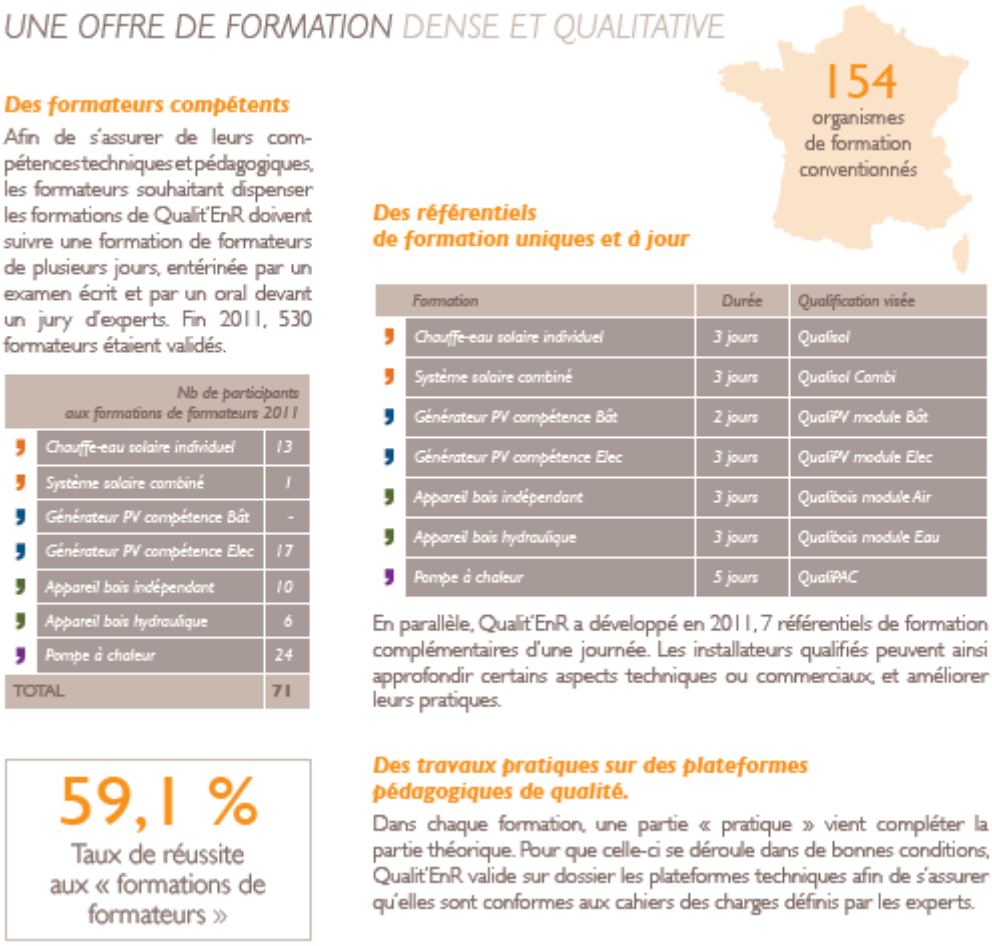
3- Framework Standalone wood-fired appliances
Course duration: 2 days (including ½ day of practical work)

4- Framework Wood-fired appliance connected to the water system
Course duration: 3 days (including ½ day of practical work)

5- Framework Photovoltaic installation connected to the national grid (electrical skills)
Course duration: 3 days (including 1 day of practical work)

6- Framework Photovoltaic installation connected to the national grid (building integration skills)
Course duration: 2 days (including ½ day of practical work)

6- Framework Heat pump installation
Course duration: 5 days (including practical work)



UNE OFFRE DE FORMATION DENSE ET QUALITATIVE

154 organismes de formation conventionnés

Des formateurs compétents

Afin de s'assurer de leurs compétences techniques et pédagogiques, les formateurs souhaitant dispenser les formations de Qualit'EnR doivent suivre une formation de formateurs de plusieurs jours, entérinée par un examen écrit et par un oral devant un jury d'experts. Fin 2011, 530 formateurs étaient validés.

	Nb de participants aux formations de formateurs 2011
Chauffe-eau solaire individuel	13
Système solaire combiné	1
Générateur PV compétence Bât	-
Générateur PV compétence Elec	17
Appareil bois indépendant	10
Appareil bois hydraulique	6
Pompe à chaleur	24
TOTAL	71

59,1 % Taux de réussite aux « formations de formateurs »

Des référentiels de formation uniques et à jour

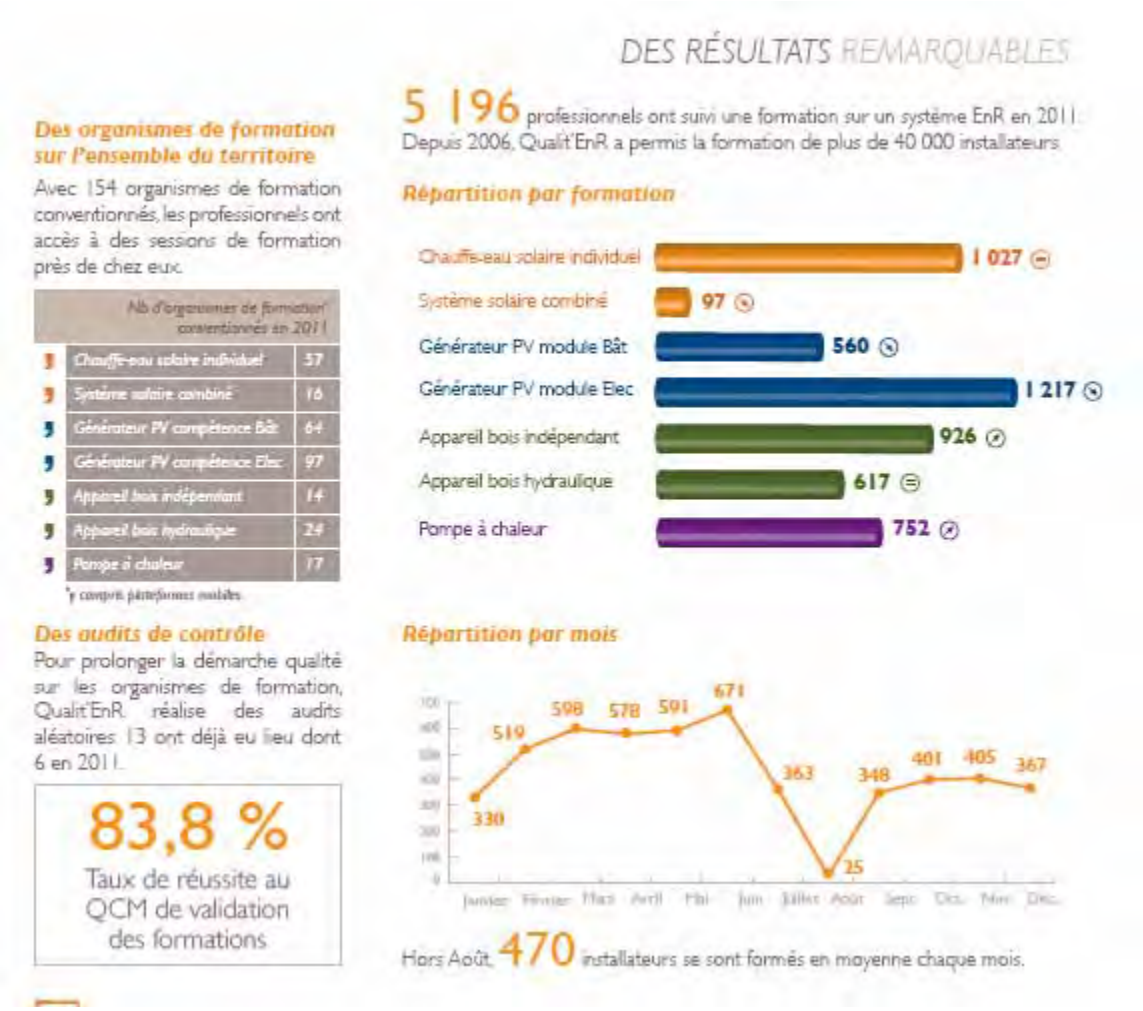
Formation	Durée	Qualification visée
Chauffe-eau solaire individuel	3 jours	Qualisol
Système solaire combiné	3 jours	Qualisol Combi
Générateur PV compétence Bât	2 jours	QualiPV module Bât
Générateur PV compétence Elec	3 jours	QualiPV module Elec
Appareil bois indépendant	3 jours	Qualibois module Air
Appareil bois hydraulique	3 jours	Qualibois module Eau
Pompe à chaleur	5 jours	QualiPAC

En parallèle, Qualit'EnR a développé en 2011, 7 référentiels de formation complémentaires d'une journée. Les installateurs qualifiés peuvent ainsi approfondir certains aspects techniques ou commerciaux, et améliorer leurs pratiques.

Des travaux pratiques sur des plateformes pédagogiques de qualité.

Dans chaque formation, une partie « pratique » vient compléter la partie théorique. Pour que celle-ci se déroule dans de bonnes conditions, Qualit'EnR valide sur dossier les plateformes techniques afin de s'assurer qu'elles sont conformes aux cahiers des charges définis par les experts.

(Source: Qualit'EnR – Activity report 2011)



(Source: Qualit'EnR – Activity report 2011)

- 45,500 people have been trained to date since 2006 (including 5,000 in 2012 as at the time this report was written). *(Data provided by Qualit'EnR)*

7.7.3 The PRAXIBAT® scheme

The national PRAXIBAT® scheme introduced by ADEME is in line with the recommendations of the National Commission on “Mobilising professionals in the building industry” following on from article 6 of the Grenelle Act 1. ADEME produced a final report, dated 31 May 2010, setting out a frame of reference for technical and educational specifications for practical work platforms designed to train professionals in the building sector.
The main aim of the project and its regional components is to provide a structure for an aspect that is often absent from training, namely “learning by doing”. The main actions involve equipping and organising the sites chosen on the grounds of suitability. The scheme is run regionally by funders. The long-term aim is to support the skills development of current and future professional to achieve the targets for 2020 set at the Grenelle de l’environnement (environmental forum) talks.
PRAXIBAT® is designed to make local educational platforms available to learners in the building industry (school pupils, job seekers taking training or retraining, employees or craftsmen seeking continuing training) in the seven following areas of technology:

Energy efficiency

1. Energy performance of opaque walls
2. Renewal of air supply (ventilation)
3. Efficient lighting

Renewable energies

1. Wood energy (standalone appliances and central heating)
2. Solar heating
3. Solar photovoltaic energy
4. Heat pumps

An educational platform is defined as any equipment in a training centre designed for practical activities and workplace simulation.
Learners have access to the materials and equipment they will be installing and maintaining in their working lives.
The places intended to host these platforms are those involved in initial or continuing training and training centres aimed specifically at job seekers offering courses in the building industry, namely technical and vocational schools run by the French Ministry of Education, Apprenticeship Training Centres (CFA) for the building industry, AFPA centres and public and private continuing training organisations.

Figures to date: 60 facilities are available, including 20 in the energy efficiency sector (eight for energy performance of opaque walls, nine for renewal of air supply and three for efficient lighting) and around 40 for renewable energies. Further facilities for 2013 are currently planned only in the area of energy efficiency: 37 for energy performance of opaque walls, 19 for renewal of air supply and eight for efficient lighting. *(Data provided by ADEME)*

Monitoring the scheme

- Work to identify technical facilities that might comply with the requirements of PRAXIBAT® technical specifications is almost complete and any modernisation and/or design work required is underway. The aim is to **create as dense a network as possible across the country.** Both ADEME's Regional Departments and the regional councils are investing in the project.

- PRAXIBAT® modules on Insulating Opaque Walls and Ventilation for Professionals (workers and craftsmen in the building industry) were designed, tested and approved in 2012.
  They are accompanied by "Platform Trainer" education sessions to help trainers to run the modules in the best possible conditions. The target audience for "Platform Trainer" sessions is trainers and teachers in the building sector employed by the French Ministry of Education.
  Modules on efficient lighting (one for professionals and one for "Platform Trainer" sessions) will be available during the course of 2013.

- "Renewable energies" topics will be developed in light of the detailed requirements of European Directive 2009/28/EC.

7.7.4 Training courses delivered by professionals in industry

According to the report of the Comité de filière "Métiers du bâtiment"[18], these represent:
(2008 figures)

- for the Industrial Technical Centres (CTI), 8 million euros [19]in expenditures on training customers and partners.
- for the Centres for Industrial Training, €44 M[20].

The network of industrial technical sales staff (120,000) could be assigned to training activities on an exceptional basis alongside their normal activities, provided they had attended a "train the trainers" course.

Le potentiel de formation dispensée par l'industrie (auprès des artisans et entreprises)

		Nombres de personnes formées par an par l'industrie	
		Aujourd'hui	Demain
Formation actuelle	- Centre de formation, CTI, industriels	28 000	35 000
Surplus de Formation Mobilisable (auprès des artisans et entreprises pour la rénovation)	- 12 000 technico-commerciaux en contact avec entreprises, négoces, prescripteurs : 200J/an = 240 000 journées disponibles - Hypothèse : 1J/10 affecté à la formation Grenelle = 24 000 journées - Nombre moyen de professionnnels visités par jour : 2+2+2 = 6 soit 24 000 journées x 6		145 000
	Total		180 000

Source : AIMCC
Colloque "La formation de la filière du bâtiment face aux enjeux du Grenelle de l'environnement"

[18] **Grenelle building plan.** Report of the Comité de filière "Métiers du bâtiment". 2009
[19] **AIMCC survey and estimate**
[20] **INSEE + BIPE, AIMCC surveys and calculation**

Types of training course delivered by industry to partners and clients:

- Continuing training
  - ✓ Inter- and intra-company courses in training centres
  - ✓ At client sites
  - ✓ Tailor-made

- Initial training (apprenticeship training centres, etc.)
  - ✓ Work-based learning
  - ✓ Integration in the workplace

- Site start-up
  - ✓ Site-based demonstrations

A large number of training courses are available in a wide range of areas and a variety of teaching and learning methods are offered (e-learning, classroom-based courses, etc.).
Numerous catalogues of training courses and teaching materials aimed at professionals (installers and distributors) and teachers are available via the internet on the websites of industrial firms such as Schneider Electric, Siemens, Legrand and Société Hager.

8 SKILLS REQUIREMENTS TO MEET THE GOALS WITH RESPECT TO SUSTAINABLE DEVELOPMENT AND ENERGY EFFICIENCY UP TO THE YEAR 2020

8.1 WORKFORCE REQUIREMENTS IN LIGHT OF THE ISSUES RAISED DURING THE GRENELLE DE L'ENVIRONNEMENT (ENVIRONMENTAL FORUM) PROCESS

According to the study by CG Conseil[21], professionals in the sector are finding it difficult, in this period of uncertainty, to look ahead and **assess the change in the number of workers required by trade to address the issues raised during the Grenelle de l'environnement (environmental forum) talks.**
Conversely, several studies have been carried out, whose results are outlined below.
It would be wise to take a cautious approach to the views expressed in light of the changes that have taken place since these studies were carried out.

8.1.1 Findings of the so-called "Parent Report"[22]

The work done by the working group chaired by Christian Parent, carried out in the wake of the Grenelle de l'environnement (environmental forum) talks to propose tangible actions that could be implemented in the building sector, in conjunction with the professionals concerned, highlighted the fact that "the additional annual recruitment requirements of firms in the building sector, which are necessary to develop the area of **renovation work to improve the energy performance of buildings** and more building energy performance more generally, are thought to be 15,000 people, split equally between those in initial training on the one hand and those who can be redeployed from other activities in the sector on the other, at a consistent rate over 12 years, for a total increase of 180,000."
In addition, the report states that "with regard to the 7,500 additional recruits coming out of initial training, it is not clear that this means more pupils being enrolled in classes (the demographic prospects for 2020 shown in the scorecard of the CCCABTP for employment and training in the building and public works sector do not show any significant impact on the numbers being trained in schools and apprenticeship training centres, subject to regional variations) but **fewer losses between specific training and actually entering the workplace.** Some 19,000 qualified workers who have been trained in construction techniques look for jobs in radically different sectors every year, or fail to find a job at all and find themselves looking for work." It is also noted that "the drop-out rate at the end of initial training is still over 50% and that the proportion of female employees is extremely low, especially amongst manual workers. It is essential to find explanations for this situation and identify solutions."
It seems that there have been no significant changes in the profiles of young people coming out of initial training in relation to the measures set out in the Grenelle de l'environnement (environmental forum) commitments.
Studies from the *Cellules Économiques Régionales de la Construction* (*CERC* - regional economic centres for the building industry) would appear to corroborate the forecasts in terms of a constant workforce, but with a higher proportion in the area of renewable energies.

[21] **French Ministry of Education, CG Conseil.** Sustainable development, energy management. Changes and impact on training programmes. 2010
[22] **French Ministry of Ecology, Sustainable Development and Energy.** Parent Report: Follow-up to the Grenelle de l'environnement (environmental forum). Mobilising construction industry professionals. 2011

8.2 NEEDS FOR CRAFTSMEN AND "BLUE COLLAR" SKILLS

8.2.1 Estimate of annual training needs in the building industry based on the current number of practitioners and annual changes (excluding main contracting and associated trades)

According to the report of the Comité de filière "Métiers du bâtiment"[23], from which the table below has been taken:

	Estimation du nombre d'intervenants dans la filière	Rythme de la formation	Besoin annuel de formation en nombre d'intervenants à former par an
Formation continue			
Entrepreneurs, salariés et artisans dans la filière	1 300 000	10 ans	130 000
Architectes, ingénieurs / techniciens de la maîtrise d'œuvre dans la filière Autres acteurs de la maîtrise d'œuvre	30 000 100 000 20 000	3 ans	50 000
Industriels, professionnels du négoce dans la filière	450 000 150 000	10 ans	60 000
Entrants dans la filière annuellement suite à reconversion	100 000	annuellement	100 000
Total du besoin annuel en formation continue			**360 000 intervenants**
Formation initiale			
Jeunes arrivants dans la filière chaque année	50 000 jeunes arrivants	annuellement	50 000
Sortants de la filière annuellement	130 000		
Flux annuel lié au supplément d'activité Grenelle parmi les entrepreneurs, salariés et artisans	20 000	annuellement	20 000
Idem pour l'ingénierie et les architectes	p.m.		
Total du besoin annuel en formation initiale			**70 000 jeunes**

(Source: Grenelle building plan – Comité de filière "Métiers du Bâtiment")

- Training for employees and craftsmen currently in work
  - There are thought to be 1,300,000 employees and craftsmen with training needs. Including those who have already been trained through the FEE Bat scheme (which is funded in part by Energy Savings Certificates) and spreading the work evenly over 10 years, between 125,000 and 126,000 people need to be trained every year until 2020.[(1,300,000 – 50,000)/10]

[23] **Grenelle building plan.** Report of the Comité de filière "Métiers du bâtiment". 2009

- Training for new recruits
  - Based on an estimated total number of 100,000 new recruits per year, of whom 50,000 have come through initial training and therefore have adequate skills, the number of new recruits to train is calculated at 50,000 a year until 2020.

Thus, in order to meet the Grenelle de l'environnement (environmental forum) targets and give employees and craftsmen in the building sector the means to drive an overall improvement in building energy performance, 125,000 + 50,000 i.e. 175,000 will need to be trained every year (excluding initial training) until 2020.

8.2.2 According to the French Ministry of Education and OPCA Bâtiment, there are currently very few jobs based purely on new skills such as renewable energies

The studies carried out by CG Conseil[24] and OPCA Bâtiment[25] show that the **volume of skills to be acquired is relatively high but few of them are new.**
It is more a question of which existing skills will become more important in the future, and adapting existing skills to new technologies and building systems.
In future, getting things "about right" will no longer be good enough: more rigorous quality standards will apply at every level.
This is a very marked shift. The need for good professional practices that take account of new building systems, new technologies and the standards and regulations associated with them are being felt across al parts of the industry.
The specific area of activity has a significant influence on the skills of employees in the building sector.
New approaches are coming to the fore. These are mainly associated with building renovations and are broken down as follows:

- Global approach to energy equipment.
- Global approach to structural techniques.
- Global approach to renovation to improve energy performance.
- Global approach to fire safety and maintenance.

Some skills for these new approaches need to be acquired, some exist already and need to change, and others will have to be designed.

Overall, however, one major factor is having an impact on all businesses: the **requirement for managing the quality of work and the standard to which it is completed.**
This is a direct consequence of changes in the market.
Consumers are increasingly well informed and increasingly litigious; the precautionary principle is therefore making standards more stringent.
Firms have moved from an obligation to use their best endeavours to an obligation to achieve specific results. The volume of work being generated is relatively high, leaving the way open to various forms of competition and requiring a high level of recruitment of personnel and helping existing staff to adapt to new techniques.

[24] **French Ministry of Education, CG Conseil.** Sustainable development, energy management. Changes and impact on training programmes. 2010
[25] **OPCA Bâtiment.** Prospective study on the skills requirements of employees in the building sector. Final report. 2008

8.2.3 According to the French Ministry of Education and OPCA Bâtiment, existing trades will need to adapt

- Cross-disciplinary skills[26][27]

The essentials: a common culture of a global approach to building, being able to work together, the importance of high-quality implementation and rigorous self-assessment!

- A needs analysis of new skills, regardless of whether they are skills common to all trades in the building industry or specific to particular trades, highlights the type of changes that need to be made, both in terms of knowledge and the know-how required by professionals in the sector.

According to the latest research on RAGE [the best practices established by the Grenelle de l'environnement (environmental forum)], **all trades are likely to be impacted by the changes** although some trades will be more affected than others. The most significant change, however, will be the need to develop a **common culture of a global approach to building,** taking account of energy, acoustic, internal air-quality and accessibility-related aspects so that each trade can make an appropriate contribution. This collective aspect means strengthening the relationship between professionals and developing ways of working together. To some extent, it will have an impact on the dominant culture, which is often described as "vertical": skills are often confined to a particular part of the industry with no overall vision of energy performance objectives and the need for coordination between different trades.

There are three aspects to this global approach: managing environmental constraints for the building sector, managing interfaces, and managing waste and nuisances (for example, introducing guidelines to limit the nuisance caused by building sites and sorting and treating waste on-site in accordance with the guidelines).

At an operational level, all professionals should be in a position to:

- ✓ identify issues by understanding the overall operation of the building, taking specific elements into account when carrying out their own work,
- ✓ understand associated parts of the industry (the constraints and changes they are facing),
- ✓ check the quality of their work in accordance with recommendations in their sector and avoiding defects caused by poor workmanship,
- ✓ explain to other trades what precautions should be taken to avoid any damage to the work already done.

[26] **French Ministry of Education, CG Conseil.** Sustainable development, energy management. Changes and impact on training programmes. 2010

[27] **OPCA Bâtiment.** Prospective study on the skills requirements of employees in the building sector. Final report. 2008

These cross-disciplinary skills are expressed differently depending on the level of qualifications concerned.
Going forward, young professionals in the sector will need to be trained in "**knowing how to work together**", whilst their ability to understand their work in context and grasp the consequences of any defects due to poor workmanship on the efficiency of the building as a whole will become decisive.
It also seems necessary, regardless of the trade concerned, to insist very strongly on the **importance of the quality of work carried out and rigour at every step of the self-assessment process.** As part of a global approach, key actors in the building industry need to check systematically that the work carried out is in line with the technical recommendations for the sector, in order to address any defects that could have significant consequences on the environmental quality of buildings.

Self-assessment tools need to become simpler and more modern in order to become instinctive, but above all need to be appropriate to each part of the industry. This will help increase quality and productivity and at the same time will enable self-assessment to be a key element in customer relations. Infiltrometry tests, for example, exist as self-assessment tools.

This is the price that will need to be paid to achieve the performance required by the legislation.

A real strategy for performance
The combination of ever-more stringent regulations and new technical developments is causing significant complications in organisational terms. It has, for example, become more than hazardous to change the order of work without the risk of impacting final performance. Compliance with performance criteria therefore needs a real strategy. Upstream, global design includes the building itself, its amenities and the use to which it is put, but also the constraints associated with its implementation. There are several routes to certification and the range of technical choices is vast. Downstream, building sites of this kind demand flawless organisation, perfect coordination and compliance with implementation deadlines and procedures.
To meet these objectives, professionals in the sector will have to take regular training on standards and techniques but also understand new products.
Finally, they will probably be obliged to redefine the relationship between different parts of the industry in a spirit of cooperation.

In addition to the cross-disciplinary skills described above, which are common to all professionals, craftsmen will have to:

- ✓ define and implement a commercial policy,
- ✓ research and update information relating to their specialism and the services provided by the firm (legislation, standards, technical instructions, techniques and technologies, products, etc.), based on reliable and independent sources of information,
- ✓ sell the company's activities and services and maintain positive customer relationships,
- ✓ deal with purchasing and negotiate with suppliers,
- ✓ manage their team,
- ✓ monitor the building site or workshop,
- ✓ guide and manage the company from an accounting, economic, financial and legal point of view (negotiate contracts with banks, insurance companies and various service providers, such as accountants, lawyers, etc.)

In brief, it represents a real challenge....

Skills by type of trade

"Potential" priority trade-related skills to develop or strengthen depending on profiles[28]

(Some of the sources used for the information set out below may significantly predate this report: it should therefore be treated with caution).

Jobs in **masonry and structural works** (including roofers-façade specialists)

Ongoing or desired developments	Skills to develop or new skills
Requirements in terms of safety, wall and grout pockets, quality of surfacings. New materials and construction techniques. External insulation. Technique of thin joints (alveolar clay brick).	Take account of the phenomena of thermal exchanges in a building. Take account of the principles of the migration of water vapour in walls. Mastering the estimate of take-off quantities and the measurement tools. Master the techniques for laying insulation. Master the management of sealing for air tightness in connection with other trades.

And more specifically for roofers-façade specialists: Techniques associated with the use of renewable energy sources (installation and acceptance of solar sensors or protection, treatment of photovoltaic membranes, roofing or façade work with active elements)

Jobs in **carpentry and timber construction**

Ongoing or desired developments	Skills to develop or new skills
Wooden-framed houses (assembly of frame/structure and lifting into place using timber construction techniques) Quality associated with the construction of low-energy buildings.	Take account of the phenomena of thermal exchanges in a building. Take account of the principles of the migration of water vapour in walls. Treat the interfaces between timber and other materials. Identify risks of claims. Master the techniques for laying insulation. Master the management of sealing for air tightness in connection with other trades.

[28] **OPCA Bâtiment.** Prospective study on the skills requirements of employees in the building sector. Final report. 2008
ADEME, CAFOC Nantes. Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2012
ADEME, Franche-Comté region. Prospective study on employment and training related to energy efficiency in the building industry. Summary and introduction. 2009

Jobs in **joinery**

Ongoing or desired developments	Skills to develop or new skills
Design of high-performance joinery. Recovery of solar energy. Solar protection.	Understand the thermal and energy impact of different materials. Understand the principles of thermal comfort in a building. Taking into account the phenomena of thermal exchanges in a building. Master installation techniques. Master the management of sealing for air tightness in connection with other trades.

Jobs in **plastering and insulation**

Ongoing or desired developments	Skills to develop or new skills
Development of internal insulation (new insulation products) Eliminate “thermal bridges”.	Use wall insulation techniques. Master the techniques of internal insulation for floors and attics. Take account of the constraints associated with previously installed equipment. Master the techniques for laying insulation. Master the management of sealing for air tightness in connection with other trades.

Jobs in **climate and energy engineering**

Ongoing or desired developments	Skills to develop or new skills
Accurate sizing of installations. Combinations of heating methods (heat pump, solar, wood, condensing boiler, etc.). The major role played by ventilation.	Master the techniques of ventilating buildings. Master the installation and maintenance of thermal and climatic equipment. Master the installation and maintenance of ventilation equipment. Taking into account the phenomena of thermal exchanges in a building. Master the operation of thermal and climatic equipment.

Jobs in **electrical engineering**

Ongoing or desired developments	Skills to develop or new skills
A wide range of equipment to understand in terms of installation. Systems for managing thermoregulation devices. Equipment upkeep and maintenance.	Take account of the phenomena of thermal exchanges in a building. Operate and adjust equipment.

And more specifically:
Electricians – Plumbers – Heating engineers:
Techniques associated with the use of different renewable energies or new products (installation of photovoltaic/solar sensors, wood-fired/solar boilers, wood-fired/condensing boilers, solar water-heaters, combined heat and power, heat pumps, double-flow CMV)
Adjustment and maintenance of new products, which are likely to become increasingly complex (communication between different systems, energy-sorting programme for plumbers-engineers, adjustment, home automation and metering for electricians)
Plumbers – Heating engineers:
Skills in advice, assessment and recommendation (evaluation of energy needs, selection of high-performance equipment in line with client needs, constraints of the building, intensity of heating and insulation, thermal assessments, infrared thermographic studies)

Jobs in **building maintenance**

Ongoing or desired developments	Skills to develop or new skills
Upkeep and maintenance of a wide range of equipment. Energy performance contract. Using maintenance logs.	Managing central technical equipment, thermal equipment and aeraulic networks.

Jobs in **layout**

Ongoing or desired developments/Skills to develop or new skills

Master standards for design offices and management (thermal, acoustic, fire, accessibility).
Master good practices in line with the standards concerned.
Define good professional practices, addressing the impact of the standards cited above with concrete examples. The aim of these provisions is to explain standards and current industry practices, using an appropriate teaching method that is accessible to the people carrying out the work.
Professionalisation of purchasing
Incorporate effective purchasing techniques applicable to the specific characteristics of the job of layout specialist.
Incorporation of environmental constraints.
Manage environmental constraints in two areas:
Management of low-nuisance building sites (coordination, waste, organisation, etc.)
Environmental constraints associated with product choices (wood sourcing, branch of activity, traceability, etc.).

Job in **tiling,** **mosaic tilesetting and floor coverings**

Ongoing or desired developments/Skills to develop or new skills

Master installation techniques in accordance with standards and industry practices.
Know whether a material is suitable for acceptance.
Improve knowledge of good installation practices in line with standards.

Make appropriate technical choices for the situation

Understand technical products.
Shower coverings, institutional kitchens, fitted carpets, parquet flooring, etc.

Waste treatment and management.
Product selection, waste conversion, management and traceability procedures

Commercial and interpersonal skills in the business – negotiating the 'client – partner company' relationship – dealing with practical problems with the work carried out.
Conflict management (firms, project manager, main contractor)
Ability to value one's know-how.
Ability to identify and open up new markets.
Sales and negotiation techniques.

Incorporating health and safety in working methods.

Developing the independence of on-site teams.

Jobs in **demolition**

Ongoing or desired developments/Skills to develop or new skills

Incorporation of environmental constraints:
This includes understanding all legislation and procedures governing:
Waste management across the board, sorting, traceability, choice of removal methods, waste conversion, etc.)
Requirements for low-nuisance building sites, behavioural attitudes, site organisation, techniques to use, etc.
There will be two levels of understanding: one relates to the people actually working on the site and the other to its managers and offices.

Product recognition
Identification module for site staff of the products they deal with and the procedures associated with them.

Mechanisation and radio guidance techniques
Assimilate radio guidance techniques and their direct applications to demolition sites.

Management of strenuous activities
Organising a building site in a way reduces the level of strenuous tasks, safety problems and their legal and managerial impact and looks at the economic aspects of these issues.

Additional technical skills in administrative departments
Module designed to give administrative staff in demolition firms a basic understanding of technical subjects such as:
Understanding administrative documents in calls for tenders in relation to HQE-type applications, monitoring traceability procedures in relation to waste management and removal, etc.
These modules could be very short but highly effective.

Jobs in **painting and finishing**

Ongoing or desired developments/Skills to develop or new skills

Knowledge of products based on substrates and effect of environmental constraints on the job

Choice of products and techniques based on use and elemental factors

Design, implement and run facility management

Work organisation in sensitive environments (industrial paints)

Work organisation with mechanised tools

External insulation techniques

The role of decorating consultancy in the firm

The sales function and its extension to people working on the ground

Jobs in **fitting and installation**

Ongoing or desired developments/Skills to develop or new skills

Determine the role of the fitter/installer on the building site, which could be divided into three skills modules:
Structural fitter: responsible for the production of the weatherproof shell.
Equipment installer: deals with the installation of electrical, heating, sanitary equipment, etc.
Fittings and finishings: all work relating to fitting and finishing (plastering, painting, floor coverings, etc.).
These last two modules are currently often sub-contracted; this may be the case in the future.
The first module has a direct connection to the industry and meets a real identified need, which will only increase in the future.

Lifting techniques
The products coming out of manufacturing workshops are increasingly elaborate and technically complex. As a result they have to be installed using lifting equipment.
Understanding lifting techniques will allow the firm to operate independently, which is not always the case when work is subcontracted.

Jobs in **waterproofing**

Ongoing or desired developments/Skills to develop or new skills

Adaptation to new techniques and technologies

Techniques for wooden floors on sealed surfaces
Given the lack of professional regulations in this area, there is a need to define a set of skills required for installation, in partnership with professionals in the timber industry.
Once these have been defined, the next step will be to determine the most appropriate method of skills acquisition.

Understanding of self-assessment and traceability systems

Thermal exchanges in walls
A module designed to provide a comprehensive understanding of thermal rules applicable to walls in buildings and the relevant standards.

Understanding of standards and good professional practice in relation to works and design office management

8.3 QUALIFICATION NEEDS FOR TRAINERS AND TEACHERS AND EDUCATIONAL ENGINEERING NEEDS

8.3.1 Qualification needs for trainers and teachers

According to the study by ADEME/CAFOC[29] Nantes,over 24,000 teachers and trainers need to be trained, including 20,000 permanent and 4,000 temporary trainers (higher education).

En formation initiale :	**15 394**
Education nationale :	13 409
Apprentissage (estimation) :	1 985
En enseignement supérieur :	**3 882**
Ecoles d'architecture (estimation) :	882
Universités et écoles d'ingénieurs (estimation) :	3 000
En formation continue :	**5 047**
Organismes de formation certifiant :	2 047
• AFPA	1 217
• GRETA	223
• FCMB	107
• Autres (estimation)	500
Organismes de formation « non certifiant » (estimation) :	3 000
Total (estimation) :	**24 323**

(Source: ADEME/CAFOC Nantes. Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2011)

For the target audience for BUILD UP SKILLS, it is more appropriate to use the figure of 20,000 trainers and teachers, not including the higher education sector.
Furthermore, the breakdown provided by the French Ministry of Education at the time of the ADEME/CAFOC Nantes study did not provide precise information on teachers focusing on electricity in the building industry; these figures are rolled into industrial electricity and electrical engineering. A reasonable estimate of current figures is 5,000 teachers (rather than 13,409). As a result, the total figure is therefore around **12,000**.

Teachers' and trainers' skills are adapting...

Introduction:
Trainers and teachers belonging to the main networks (as described in 7.3) are trained as part of these networks' training plans. There may also be regional initiatives. The sections below provide a certain amount of non-exhaustive information on the training available through the main networks and at a regional level.

[29] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2011

Initial education in schools

- The CERPET [*Centre d'études et de ressources pour les professeurs de l'enseignement technique* – Research and resource centre for teachers in technical education] is pursuing and developing its "lifelong learning" initiatives for teachers based on three main actions:

1. Short, one-week courses, attended by volunteer teachers.
2. Long courses, lasting an academic year. Access to CERPET courses involves a specific application process. Places are awarded to motivated teachers, selected by education authorities, who are keen to update their knowledge with a view to sharing resources both within the education authority and at a national level.
   Full-time industrial placements are designed to produce tangible pedagogical outputs in line with training guidelines, which are made available via a database made up of information provided by teachers based on in-company placements of a week or year.
3. Training courses for secondary school teachers with a skills-based approach to sectors and trades, lasting two to three days.

The information below comes from the study by ADEME/CAFOC[30] Nantes.
According to the study, the **2011 training modules aimed at teachers focused on:**

- Designing an electrical installation according to French standard NF 15-100 (trainer: Hager)
- Implementing solutions for heating, lighting, comfort and safety management (Hager)
- Calculating electrical installations with XL PRO2 (Legrand)
- Well-being solutions for the home: find out more about Legrand's MY HOME range and configure your comfort solutions
- Implement and maintain fire safety and security lighting systems (Legrand)
- Energy performance: Improve the energy efficiency of new and existing buildings (Legrand)
- Energy efficiency/Renewable energies/Photovoltaics (Schneider Electric)
- Infrared thermography level 1 and 2 – Buildings (Flir) Applied thermography
- RT 2012 in the context of sustainable building – construction solutions (Cerib)
- Renewable energies: Heating and domestic hot water production in the home (De Dietrich)
- Technique and principles of adjusting settings in HVAC installations (Siemens)
- Steam networks (Spirax Sarco)
- Plasterboard and second-fix technical processes (Knauf)
- Untec method and ESTIMA software (Untec)
- Training the trainers in high energy-performance building design (Ines éducation)

[30] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2012

- How to train future craftsmen to work on old buildings (Ministry of Culture and Communications)
- Wind power in energy provision (Plateforme Technologique Rouen)

Most of these courses are aimed at acquiring sector-specific skills. Only the last three listed include studies on how students might best be taught.

- Some *Maisons de l'emploi* [MDE – employment centres] run specific train-the-trainer courses[31].

Examples include the MDE in the urban area of Bayonne and the Basque country, as part of the PRAXIBAT®, the MDE for Western Provence, which focuses its training on the "global approach", the MDE in Saint-Quentin-en-Yvelines, and its counterpart in the Vermandois region, with an initiative targeting key actors in initial training, including in particular, a half-day on-site to demonstrate a blowerdoor test, and the MDE for the Nantes metropolitan area.

As part of initial training through apprenticeships

- Courses offered to its trainers by the CCCA-BTP apprenticeship training institutes

The range of training courses run has gradually increased:

- Training for trainers and facilitators on educational enegineering to include sustainable development in learning strategies and sequencing.
- Awareness-raising day aimed at management teams on taking account of the environmental quality of buildings.
- Training module in eco-construction and renewable energies for technical trainers.
- FEE Bat modules.
- "Developing learning sequences including heat-pump technology" module for trainers in thermal and sanitary installation, cooling and air conditioning and electricity.
- "Solar heating installations in buildings" module for trainers in thermal and sanitary installation, cooling and air conditioning and/or science. Modules on photovoltaic technology for trainers in electricity, energy efficiency and thermal regulation 2012 for "building design" trainers and educational assistants and timber construction for joinery and carpentry trainers were added to the range of courses in 2011. Since 2008, 250 to 350 trainers out of the 1,261 technical trainers concerned have taken at least one training module.

[31] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2012

As part of continuing training

- Courses offered to its trainers by the AFPA (institute for ongoing adult training)[32][33]

A first level of support has been organised in the building sector based on the notion of responsibility through training on the global approach, respect for other people's work and the concepts of thermal bridges and airtightness. The second level consists of training on appropriate techniques, equipment and products.

Trainers from AFPA's Department of Educational Engineering and Innovation lead and provide resources to the "training community", in particular via professional educational communities, whose aim is to offer trainers a digital resource area where they can exchange ideas with senior trainers, share documents, find answers to frequently asked questions, etc. In addition, the 2012/2013 skills development plan described below has been implemented and includes three main development periods. The scheme is open to all trainers in the building sector. Courses will, however, be adapted to reflect regional needs.

AXE 1 – Lancement à partir d'avril 2012

Application du nouveau cadre lié à la performance énergetique (inter métier)

Contours de l'action : Apports et partage de connaissance sur l'éco construction et sur l'impact de ces évolutions sur les métiers.

Modalités pédagogiques : *À distance avec dispositif multimodal en alternance.*
1) Lancement en région lors d'un regroupement (en présentiel, par conférence téléphonique).
2) Travail à distance en autonomie à partir de livrets et de ressources spécifiques (accompagnement spécifique)
3) Évaluation pour validation des acquis.

Durée totale estimée : 1 jour à distance en session de 10 min.

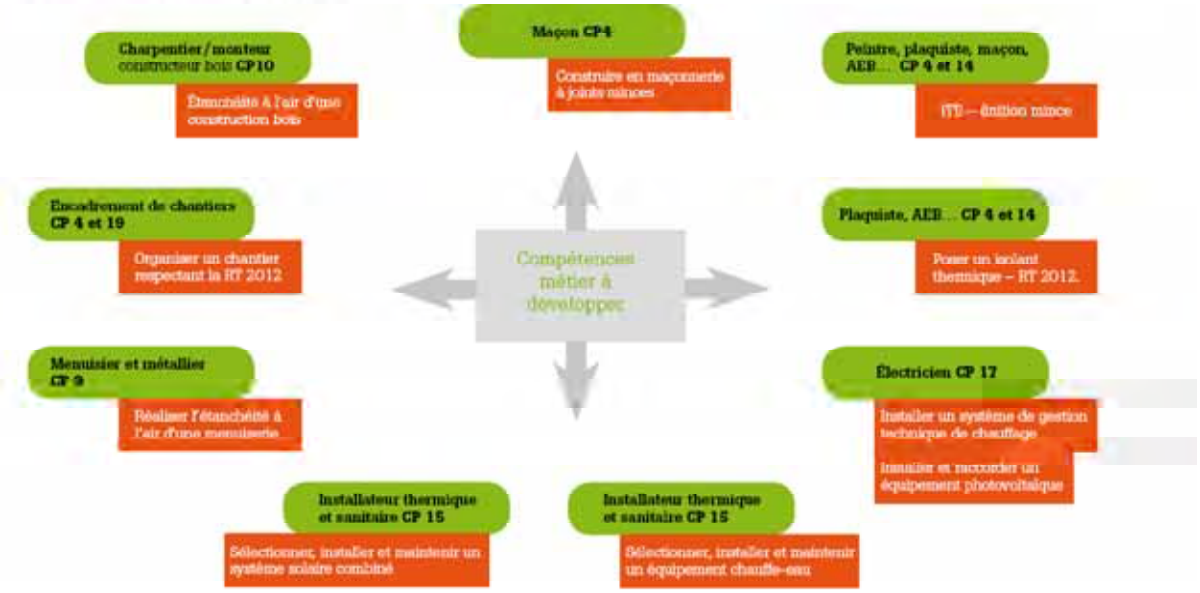
AXE 2 – Lancement à partir d'avril 2012

Développement des compétences métier (modules prioritaires)

Contours de l'action : Approche et maitrise des spécificités métier.

Modalités pédagogiques : 1) Formation en alternance avec lancement à distance par conférence téléphonique
2) Apports théoriques à distance avec accompagnement.
3) Regroupement sur site de proximité pour mise en œuvre.

Durée totale estimée : 1,5 jour.



[32] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2012

[33] AFPA – Note on Energy Performance in the building and public works sector, June 2012.

AXE 3 – Lancement à partir de juin 2012

Posture professionnelle (inter métier)

Contours de l'action : Contribution à la performance énergétique globale des bâtiments (précision du geste, intégrer son action dans un process qualité global…).

Modalités pédagogiques : *Dispositif multimodal en alternance avec un temps d'acquisition à distance et un temps de regroupement.*

1) Lancement en région en conférence téléphonique collective.
2) Travail à distance, en autonomie, à partir de livrets et de ressources spécifiques (accompagnement spécifique).
3) Évaluation pour validation des acquis.

Durée totale estimée : 2 jours (1 à distance et 1 présentiel).

Identification of six main recommendations[34]

Following on from its analysis of training provision and having compared this with the needs and expectations of trainers in the sector, the ADEME/CAFOC Nantes study put forward a proposal for an action plan broken down into six main areas.

In general terms, this involves:

- Providing more information on the Grenelle de l'environnement (environmental forum), particularly in relation to the issues associated with building renovation to improve energy performance.
- Implementing the global approach in operational terms: explaining the changes that a global approach makes to professional practices. Working out the impact of this on teaching methods.
- Developing the technical skills specific to each job.
- Increasing trainers' teaching skills: within the field of pedagogy, trainers are looking for input in areas such as innovation, project management, problem resolution methods, cooperation and working as a team.

According to the study, the **six areas** of recommendations for training in the areas of building and renewable energies are:

Area 1: Provide more information on the Grenelle de l'environnement (environmental forum), the reasoning behind it, its consequences and its impact on behaviour at work

This area is broken down into three main themes:

1. Understanding the issues of the Grenelle de l'environnement (environmental forum) and its priorities for building.
   This will involve presenting the priorities established, in particular regarding building renovation to improve energy performance, explaining the reasons for it and exploring the impact for jobs and training.
2. Understanding the regulations in effect and incorporating the changes involved.
   It will be necessary to emphasise changes in the regulations, their impact on professional practices and introducing the notion of self-assessment.
3. Implementing an environmental approach and eco-construction techniques.

This will mean helping people to grasp a global approach, based on examples, with a particular emphasis on the issues involved, the results expected, the constraints to be taken into account and the methodological aspects to be complied with.

[34] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2012

Area 2: Enable teachers and trainers to find their own positioning

Area 3: Develop teaching managers or intermediate management

Managers must have a detailed understanding of the scheme and the various methods used to allow them to play their part as a guarantor for the scheme within training institutions and organisations. In addition, they will need to further their skills in three areas.

- Organising training to encourage cooperation between trades.
- Addressing improvements in energy performance within their working environment.
- Implementing an approach designed to reduce nuisance levels and optimise waste management

Each of these areas will be tackled from the point of view of project management as a collaborative effort, as the main objective is that these staff should be able to drive projects within the overall framework of the institution's or organisation's broader plans.

Possible methods:

- Design a guide aimed at managers of training schemes to help them to lead projects associated with organising training and support teaching teams in taking account of the global approach.
- Design a training module (or training days) to be run at a regional level to introduce the scheme and help understand and assimilate the guide.

A self-assessment process will need to be organised and arranged at the same time: this will help to develop individual career plans for staff, taking account of their prior learning and experience, areas of work, projects and responsibilities. This would use two tools, namely an annotated presentation of what is on offer and a set of questions on what they know and their professional practices.

Open and distance learning is suggested for this.

Training modules could be designed and put online, using some of the information including in the energieBAT modules. An online self-assessment scheme would enable all individuals to assess their own skills needs. Support for these training modules could be provided by the managers of the training schemes of the organisations concerned.

Area 4: Implement the global approach in operational terms

Although teachers and trainers are aware that they need to change their way of working, they find it more difficult to put the concept of a “global approach” into practice.
This points to a twofold need:

- clarifying the concept by linking it to similar concepts or notions, such as eco-construction, energy performance, HQE approaches, etc. It is essential to contextualise new concepts of this kind, which can either be addressed in isolation or from a chronological point of view.
- explaining the changes that a global approach makes to professional practices, in addition to the principle that going forward, “everyone is responsible for the final result”.

Three skills are at the centre of the global approach:

1. Cooperation with other trades, or “knowing how to work together”. At an operational level, all professionals should be in a position to:
   - identify issues by understanding the overall operation of the building, taking specific elements into account when carrying out their own work,
     understand associated parts of the industry (constraints and changes),
   - check the quality of their work in accordance with recommendations in their sector and avoiding defects caused by poor workmanship,
   - explain to other trades what precautions should be taken to avoid any damage to the work already done.
2. Self-assessment, i.e. systematic checking that the work carried out is in line with the technical recommendations for the sector, in order to address any defects.
3. Updating one’s knowledge on a regular basis by actively seeking out information to take account of the rapid changes in standards, technologies and techniques.

Area 5: Developing the technical skills specific to each job

This involves developing the “job-specific” technical skills of teachers and trainers through a range of more specialised training courses, linked to particular branches of activity:

For jobs in masonry and structural works:

- Taking into account the phenomena of thermal exchanges in a building.
- Taking into account the principles of the migration of water vapour in the walls.
- Mastering the estimate of take-off quantities and the measurement tools.
- Master external insulation techniques.

For jobs in carpentry and timber construction

- Taking into account the phenomena of thermal exchanges in a building.
- Taking into account the principles of the migration of water vapour in the walls.
- Treat the interfaces between timber and other materials.

For jobs in joinery

- Understand the thermal and energy impact of different materials.
- Understand the principles of thermal comfort in a building.
- Taking into account the phenomena of thermal exchanges in a building.
- Master installation techniques.

For jobs in plastering and insulation

- Use wall insulation techniques.
- Master the techniques of internal insulation for floors and attics.
- Take account of the constraints associated with previously installed equipment.

For jobs in climate and energy engineering

- Master the techniques of ventilating buildings.
- Master the installation and maintenance of thermal and climatic equipment.
- Master the installation and maintenance of ventilation equipment.

For jobs in electrical engineering

- Taking into account the phenomena of thermal exchanges in a building.

- Operate and adjust equipment.

For jobs in building maintenance

- Manage central technical equipment, thermal equipment and aeraulic networks.

Area 6: Identify relevant sources of information

Given the rapid pace of change in both technologies and professional practices in this branch of activity, there could be some merit in developing a training course specifically for documentation managers in training institutions and organisations working in *Centres de documentation et d'information* (CDI – Documentation and information centres) or resource centres to help them to identify relevant sources of information, set up an information monitoring system and build cooperation with teachers and trainers in the various technical areas.

8.3.2 Pedagogical and evaluative engineering needs

- According to the CG Conseil study[35], it is important to look at not only the content of certifications, but more generally which **pedagogical methods leave as much scope as possible for learning the right ways of doing things and evaluative methods that allow learners in practical situations to self-assess what they have achieved in practical terms and possible opportunities for increased cooperation between various different training areas.**

Wherever possible, it will be important to use simulations to enable several trades to **work cooperatively on a site** at the same time or to carry out practical work at a training platform, in order to address in as detailed a way as possible the question of the technical interfaces between different trades. This **practice needs to be developed further**, in particular in the context of training young professionals in how projects operate and working on a site in project mode, which is already included in various training programmes leading to building diplomas.

It will also be important to provide case studies, practical examples and work on-site highlighting techniques, technologies and new materials that contribute to energy efficiency in buildings in order to help pupils and students to understand and assimilate them. This approach is already used in numerous institutions and therefore does not require any changes to existing frameworks to be implemented.

The standard of quality of execution required during professional assessment as part of an examination process, particularly in relation to work on insulation and ensuring buildings are airtight, will need to be adjusted to reflect the levels of performance now expected in the sector. It will also be important, as part of professional assessment, to be able to verify the quality of work produced by candidates on new materials and products.

Recommendations on periods of practice in a professional environment could also take these areas into account in great detail.

[35] **French Ministry of Education, CG Conseil.** Sustainable development, energy management. Changes and impact on training programmes. 2010

8.3.3 FOCUS on on-site training

The extract below is taken from the ADEME study[36]:

4.1 La définition d'un projet de formation articulé à un chantier

4.1.1 La finalité de la formation et les cibles

Le repérage des finalités de la formation ainsi que des publics cibles est un préalable nécessaire à toute opération de formation. Les porteurs de projet doivent prendre le temps de se poser la question de l'intérêt que représente l'articulation d'un chantier aux modules de formation envisagés.

Enjeu *: A quoi sert la formation ? A qui la formation doit-elle s'adresser ?*

- Le défi énergétique présent dans chaque opération (Haute Qualité Energétique (HQE), Classe B du Diagnostic de Performance Energétique (DPE), Label Bâtiment Basse Consommation (BBC), etc.) et le recours à des solutions techniques innovantes constituent une bonne opportunité pour mettre en place des modules de formation. La formation *in situ* permet à la fois de faire connaître de nouvelles technologies ou de nouvelles techniques de mise en œuvre et de les appliquer.

  A cet égard, les formations articulées aux chantiers s'avèrent plus pertinentes sur les opérations de rénovation. Contrairement au secteur de la construction de bâtiments neufs, la présence d'un maitre d'œuvre (architecte et/ou bureau d'étude) est beaucoup moins fréquente sur les chantiers de rénovation, ce qui entraine des besoins de coordination beaucoup plus forts. De plus, contrairement au secteur du neuf où les industriels et distributeurs d'énergie ont engagé des efforts pour promouvoir des solutions innovantes, sur le secteur de la rénovation, on constate une insuffisance de l'information et une organisation en corps de métiers encore trop cloisonnée. A cela s'ajoute enfin la difficulté croissante pour les artisans et les petites entreprises du bâtiment intervenant sur des chantiers de rénovation, à répondre aux demandes de clients de mieux en mieux informés.
- Mais la mise en place de modules de formations peut aussi répondre aux besoins immédiats d'un chantier, en particulier quand ce dernier présente un fort degré d'innovation technique et que les entreprises du bâtiment intervenant sur le chantier ont besoin d'une mise à niveau spécifique de leurs compétences pour la réalisation du chantier.

  Il apparaît aussi que le besoin d'accompagnement est plus grand chez les artisans des petites entreprises que chez les grandes entreprises du bâtiment davantage informées sur les questions liées aux enjeux énergétiques. Les ouvriers, les chefs de chantier et dans une moindre mesure les conducteurs de travaux apparaissent comme les destinataires prioritaires d'opérations de formations articulées aux chantiers.

In the absence of work *in situ*, the emphasis must be placed on active teaching, using practice-based learning and assessing performance on the basis of hands-on work.

[36] **ADEME.** Developing the relationship between training and work on-site to improve the energy performance of buildings. 2009

8.3.4 Needs in certification engineering

- According to the CG Conseil study[37], "an analysis of the current certification landscape shows that **training provision** enabling people to specialise in managing energy and renewable energies is **currently particularly good in the areas of energy and electrical engineering**, at various levels of training.
  Courses aimed at holders of a level III diploma are particularly numerous.
  The timber construction area is also gradually attracting more training provision, with specific courses aimed at professionals in the sector or students who hold a traditional diploma in this branch of activity.
  In other sectors of the profession, there only seems to be a limited number of professional certifications available, a situation which argues all the more strongly in favour of **integrating problems related to energy management and sustainable development into so-called "basic" initial training courses.**

The training courses provided by the AFPA to access the professional accreditations awarded by the French Ministry of Employment help to deal with significant numbers in the most popular traditional trades (plasterboarders, thermal and sanitary installers, tilers, masons, painters, etc.) In addition, **significant efforts are being made to comply with the provisions of the Grenelle de l'environnement (environmental forum). This applies, in particular, to joinery installers, façade specialists and painters and timber frame erection specialists, where the frameworks incorporate the new regulations.**

Very few certifications have currently been introduced in response to concerns about energy management in buildings and they are relatively locally based, except for the CQP Solar heating and Photovoltaic Installation and Maintenance, which was introduced in 2006 and has recently been supplemented by the CQP Roof-mounted solar thermal and photovoltaic panel installer, created in early 2011. In addition, following a brief opportunity report in 2011, a working group is currently looking to create a new professional accreditation, which could be called a "Building renovation for energy performance" manager.

[37] **French Ministry of Education, CG Conseil.** Sustainable development, energy management. Changes and impact on training programmes. 2010

8.4 MONITORING EMPLOYMENT AND SKILLS NEEDS

- Systematic forecasts of jobs and skills requirements are fully integrated in economic planning and based on a series of institutions and experts. France has **one of the most comprehensive ranges of tools** in Europe.

The regional and sector-specific monitoring centres, studies on jobs and skills forecasting and prospective studies carried out by different branches of activity contribute to identifying new skills requirements, as well as retraining needs and job changes.

- Research and monitoring centres generally work at a national level, taking a sector-specific or regional approach and combining macroeconomic forecasts with qualitative and quantitative information surveys.
  - ✓ The Act of 4 May 2004, amending article 934-2, made it obligatory for each branch of activity to create a forecasting unit for jobs and qualifications. In the building sector, this is the *Observatoire prospectif des métiers et des qualifications du BTP*, whose website is at: http://www.metiers-btp.fr.
  - ✓ Professional and inter-professional organisations can enter into a contractual arrangement with the state to make commitments on jobs and skills development (EDEC – *engagements de développement de l'emploi et des compétences*) to anticipate and support changes in jobs and qualifications. The aim of these agreements, which can be annual or run for several years, is to anticipate the effects on employment of economic changes, prevent the risk of people in work finding that their skills are outdated and respond to the skills development needs of both employees and firms. Based on social dialogue and partnership, the EDEC approach is based on two complementary elements:
    - the first covering the forecasting aspect
    - the second covering actions in practice

- The legislative framework gives the monitoring of jobs and skills forecasting the force of law, encourages its development and helps to drive its momentum. In fact, to address the changes associated with economic changes and the ageing of the working population, the French government has created a general engineering scheme designed to support firms, particularly SMEs, in managing their human resources. GPEC is defined as an approach to engineering human resources, which consists of designing, implementing and managing policies and practices aimed at anticipating and reducing discrepancies between a firm's resources and its actual needs, in both quantitative (the size of the workforce) and qualitative (skills-related) terms (Gilbert and Parlier, 2000). The French Social Cohesion Act of 18 January 2005, known as the Borloo Act, introduced a three-yearly negotiation obligation for all establishments of 150 people and all groups of over 300 people. However, as 94% of the building sector is made up of firms with fewer than 10 employees *(source: OPMQ)*, it is relatively unconcerned by the GPEC scheme.

9 DIFFICULTIES AND CONSTRAINTS TO BE TAKEN INTO ACCOUNT TO MEET THE 2020 GOALS

9.1 HUMAN RESOURCE PROBLEMS ENCOUNTERED

9.1.1 Training and teaching staff

- According to a study by the European Centre for the Development of Vocational Training, CEDEFOP[38], there is a **clear shortage** of **trainers and teachers** able to teach new techniques. There is a drive to cut costs in the public sector, particularly the education sector, and a number of posts vacated due to retirement are not currently being filled. The study also emphasised that "it would be a **major obstacle to the development of skills in the transition towards a green economy"**.

9.1.2 Staff recruitment: shortage of qualified labour

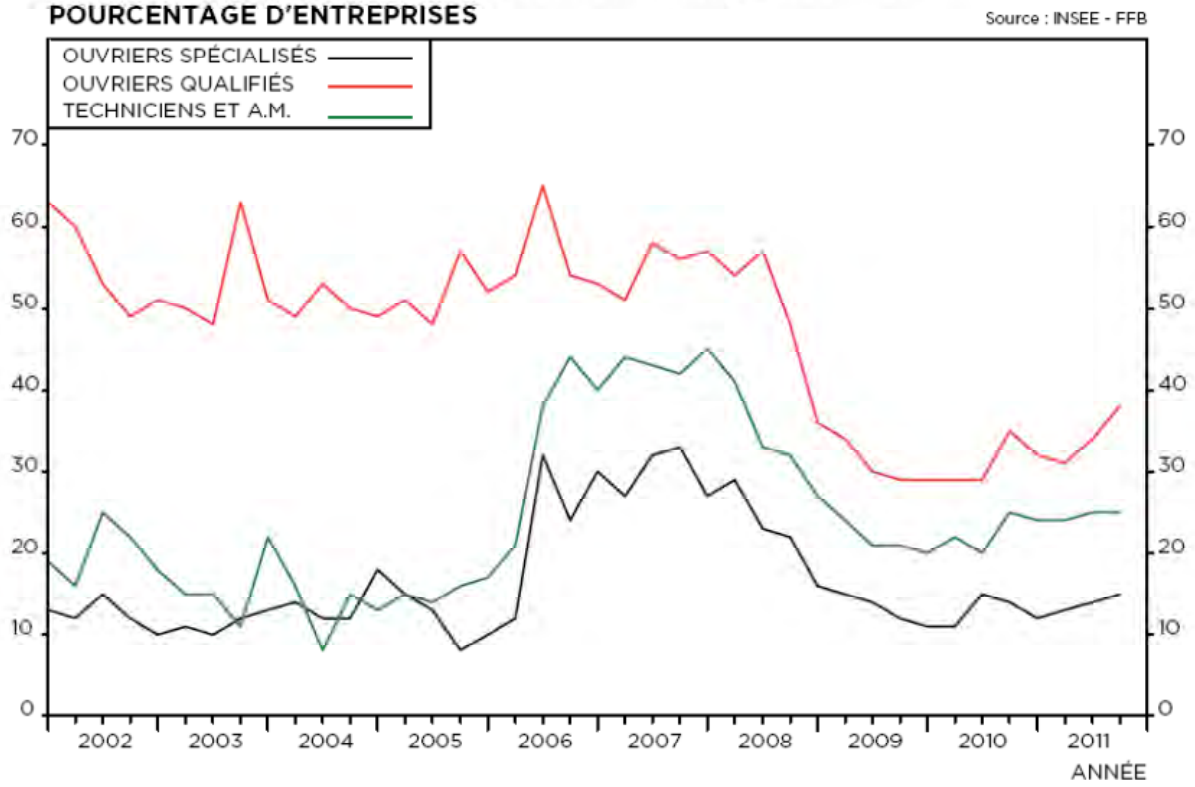
- The sector is still experiencing a shortage of qualified labour and a lack of appealing trades. This problem is especially serious given that professionals need to perform to an extremely high level to meet the requirements of the Grenelle de l'environnement (environmental forum). According to the report of the Comité de filière "Métiers du bâtiment", [39]a study shows that out of 150,000 people entering the building labour force (all staff combined, blue collar and other employees), only 48,000 have received training specific to the building trade.

Particularly aware of environmental issues, young people, along with their teachers and careers advisors, should be alerted to the key role played by the building sector in addressing environmental issues.

[38] **CEDEFOP.** Skills for green jobs, European synthesis report. 2010

[39] **Grenelle de l'environnement (environmental forum) building plan.** Report of the "Comité de filière Métiers du bâtiment". 2009

Sur les difficultés de recrutement de personnel



ENTREPRISES DÉCLARANT ÉPROUVER DES DIFFICULTÉS DE RECRUTEMENT (DONNÉES BRUTES EN %)

CATÉGORIE DE PERSONNEL	2009				2010				2011			
	JANV.	AVRIL	JUIL.	OCT.	JANV.	AVRIL	JUIL.	OCT.	JANV.	AVRIL	JUIL.	OCT.
OUVRIERS SPECIALISÉS	16	15	14	12	11	11	15	14	12	13	14	15
OUVRIERS QUALIFIÉS	36	34	30	29	29	29	29	35	32	31	34	38
TECHNICIENS ET A.M.	27	24	21	21	20	22	20	25	24	24	25	25

(***Source: Social indicators from the FFB 2012)***

9.2 ECONOMIC, LEGAL AND REGULATORY OBSTACLES

9.2.1 Economic factors

- Recent developments in the economic situation (the financial crisis and the recession in the construction industry) could affect the short-term demand for energy efficiency.
- The reorganisation of the market due to economic and technological factors following the introduction of “innovative” techniques and materials complicates matters further.
  - **A range of “innovative” techniques and materials**: an ample and diverse range for new builds and renovations, targeted at the building trade as a whole.

    According to a study by **ADEME**[40]**,** despite the interest shown by a majority of craftsmen and business managers, some managers already have an in-depth knowledge of existing materials and equipment and already use them, while others (the largest group) are interested and curious but have adopted a more cautious wait-and-see approach.
    Due to this climate of risk and uncertainty, craftsmen in the building industry remain cautious and reluctant to commit themselves. Aware of the need to modernise their trades and working practices, craftsmen involved in pilot projects - and sustainable development activities more generally - are not concerned solely with minimising risk and uncertainty or sharing their burden with other companies. Faced with the “majors” - the industry’s leading building companies and groups - which possess advanced human, logistical, technical and economic resources, **according to the same study** tradespeople are aware that their future partly depends on their ability to extricate themselves from unequal partnerships that pose a potential threat to the small crafts business model. These partnerships relate as much to the internal reorganisation of the building sector as those also formed with suppliers and customers.

  - According to the study issued by **ADEME**[41]**, the reliability of the information available represents a key challenge:** contradictory figures, doubts about the bodies performing these studies and the intentions of those commissioning them mean that most business managers find it difficult to use this information or to choose between materials. This wealth of information is counterproductive; it encourages businesses to take a more cautious approach by limiting changes to material supplies.

    According to the same study, a certain reluctance to make the leap or to fully commit to an environmental strategy indicate that risk remains a major factor. Most craftsmen are more than reluctant to take this risk. The role of the customer is systematically highlighted. The redefinition of the entrepreneur/customer relationship has increased risk aversion. Paradoxically, closer customer involvement reinforces the idea that risks are taken by the professional alone.

[40] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009
[41] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

- According to a study by **COSTIC**[42], the complexities behind the decision to invest in more efficient equipment or works designed to increase energy efficiency are **poorly understood by customers, leading to inaction**. This limits demand and leads to budgetary restrictions.

  - According to the study by the **CLUB DE L'AMELIORATION DE L'HABITAT**[43]**, s**everal factors may slow the annual increase in the number of households making energy-saving improvements. According to a study by TCC (Thierry CHANCHORLE CONSEIL)[44], homeowners with the greatest capital, both financially (wealth + ability to use grants) and culturally (technical education, experience, advanced ability to understand the issues at stake) have the most efficient works performed. Most homeowners do not have sufficient capital to make these improvements. The sharp drop in the use of loans between 2008 and 2010, according to OPEN (Observatoire Permanent de l'amélioration ENergétique du logement), and TCC, reveals that, for many households, loans are reserved for a limited number of expenses judged to be essential or particularly desirable, or for unforeseen problems. Moreover, the current range of support services (consulting, reports and energy assessments) lacks transparency for homeowners.

  - The**lack of transparency** over the mid-term regarding these schemes and frequent changes to grant allocation rules are sources of concern for homeowners and professionals *(survey by the ONTSBTP - l'Observatoire National des Travaux et Services liés au Bâtiment et aux Travaux Publics and TCC report)*. The same applies to the French 2012 budget reconciliation act, which increases VAT from 7% to 10% on 1 January 2014 for home improvement works (excluding social housing).

  - The **lack of market visibility**: energy savings are rarely considered to be sufficient grounds for improvement works. It is easier to perform works on buildings which are already scheduled for renovation. As a result, energy savings are not a priority for craftsmen. (*According to FLAME - Fédération des Agences Locales de la Maîtrise de l'Energie et du climat*)

[42] **COSTIC.** Conditions sociotechniques au développement d'une approche multimétiers. 2010
[43] **Club de l'Amélioration de l'habitat.** Le point sur le marché de l'amélioration énergétique des logements 2010-2012. 2012
[44] **Club de l'Amélioration de l'habitat.** OPEN 2011 campaign: 2012 results

9.2.2 Regulatory factors

- The complexity of the legislation in this field and, to an even greater extent, the increasing number of directives and targets to achieve within a short timeframe, added to the time and money required, make it difficult to put a positive light on this issue.

  - **Regulatory factors arising from greater pressure to comply with norms and binding rules.**

According to the study by ADEME[45], the craftsmen interviewed do not reject the idea of change and can see the advantages of current developments for their businesses. However, the timeframe within which the regulations need to be applied is unsuited to the working practices of small crafts businesses (centralised decision-making, multi-tasking managers, absence of a dedicated staff member, and a high level of technical specialisation). Craftsmen lack the transparent information which would enable them to perform self-assessments, making them less open to this approach.
Building managers often see the advantage of regulatory requirements and want to comply with them. However, this is easier said than done. Regulatory requirements disrupt the time schedules and organisational structures specific to small crafts businesses. **The large number of laws** and **standards,** their **complexity** and **the absence of assessment criteria make them less likely to voluntarily commit themselves to this approach.** Managers of very small companies lack the organisational resources and skilled staff to comply with these requirements and to take ownership of them.

According to the same study, "the craftsmen interviewed differ in terms of their level of maturity and investment with regard to waste management, ranging from a heightened awareness of environmental challenges and corporate responsibility, often related to a personal experience and family influences, to straightforward compliance with the regulations.
Due to the absence of appropriate awareness-raising activities, employees of building companies comply with the requirements made by managers, but often fail to take ownership of the approach. Information and training, targeted in particular at young professionals, are central to ensuring the implementation of the measures set out during the Grenelle de l'environnement (environmental forum).

- Unclear "insurance" and financing rules hamper progress

  - **According to the study by COSTIC**[46], **"t**he development of a global approach to energy management is hampered by two legal and regulatory obstacles. The first is compulsory contractors' guarantee insurance, which covers business activities, generally structured around a basic trade... On another level, the grouping of businesses around a common offering still lacks a legal framework" due to joint and several liability.

[45] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

[46] **COSTIC.** Conditions sociotechniques au développement d'une approche multimétiers. 2010

In theory, the comprehensive package offered to customers could include a results-based or a resources-based commitment. This is a particularly sensitive issue for construction professionals. Unable to control the actual behaviour of a building's occupants (lifestyle, heating guidelines, etc.), no one wants to provide a written guarantee of results. Moreover, a guarantee based on actual performance would require the professional to guarantee a specific level of energy consumption over a period of several years after the works are completed. A fortiori, this would require the professional to offer, in addition, an operating contract.
The insurance necessary to cover this commitment also needs to be take into consideration.
It is worth noting that the SMABTP (Société Mutuelle Assurance du BTP) does not wish to commit itself to guaranteeing actual results.
In the light of these arguments, it is clear that a commitment to actual performance is not on the agenda, either for professionals or insurance companies. On the other hand, a commitment to changing a building's energy efficiency class (changing the energy label) is perfectly feasible. This commitment is based on conventional performance standards and does not require any specific measurements to be taken. The SMABTP provides a "thermal error" guarantee for this purpose.

This guarantee is targeted at professionals offering a comprehensive works package. It covers professionals if the building's thermal performance does not reach an agreed level. It is generally up to the professional who wishes to offer this type of guarantee to approach their insurance company.

- **Slowdown in the photovoltaic** market. According to a report by BIPE /ADEME[47], this slow down is due to:
  - ✓ **a lack of clear and precise regulations on the shared responsibilities** of the parties involved, production guarantees and accident/disaster insurance;
  - ✓ **businesses that may restrict their involvement** or avoid entering the market altogether, due to the potentially high level of risk involved and the fact that it is not considered by some to be a real renewable energy market, the **sustainability of which is too dependent on pricing factors alone**.

In fact, regulatory instability and a constant and quarterly drop in purchase prices have had an impact on all markets. The "mid-sized roof" market has been hit harder by the scissor effect: a fall in purchase price of 70% since January 2010 and by 53% since the moratorium.
The residential market, where prices have fallen 39% since the moratorium, was hit particularly hard by negative coverage of photovoltaic energy at the time of the moratorium.
The size of the French PV base will struggle to rise above 3 GW at the end of 2012, after hitting 2.3 GW at the end of 2011[48].

[47] **BIPE, ADEME.** Impact économique du Grenelle de l'environnement sur trois bassins d'emplois. 2009
[48] **L'écho du solaire.** www.lechodusolaire.fr

- The study by ADEME[49], reveals that **site-centred training remains relatively rare.** Before organising training sessions, it is necessary to learn more about:
  - ✓ "**Insurance and professional responsibility rules**. Because workers are being trained on-site, it is particularly important to ensure compliance with the insurance and responsibility rules in force.
  - ✓ The **framework set by the French Law (Amendment) of 4 May 2004 on professional training**, which significantly amends the organisation of training as set out under the Law of 16 July 1971. The French Law of 4 May 2004 provides a comprehensive list of funding organisations, as well as the **training course eligibility criteria for various sources of funding.**
  - ✓ **The rules governing the financing of site-based training.** Before requesting funding, it is important to familiarise yourself with the rules on financing on-the-job occupational training under the Individual Training Entitlement (DIF) law, the role of accredited joint collection funds (OPCA), public grants, etc.
  - ✓ **Identifying training managers.** You should allocate clear roles and tasks to each member of the training project, including a training manager who is a recognised authority and expert in the field."

[49] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

9.3 TECHNICAL OBSTACLES TO IMPLEMENTATION, ADAPTATION AND TRAINING…

9.3.1 The first observation to make is that only a small number of companies have already included or plan to include this comprehensive offering as part of their activities

- According to the 2010 report by COSTIC[50], "the building sector is **traditionally organised into trades**, like the businesses themselves. The global approach can be interpreted as a **challenge to professional skills** and to the company's activities".

  "In addition to developing new energy assessment skills, knowledge of related trades, and the coordination of activities and operators, professionals also need to acquire new knowledge on rapidly changing techniques and regulations, with which professionals already find it hard to keep up. **Professional knowledge relates to the technical aspects of the trade, but also the way in which sectors operate, of which professionals need at least a basic knowledge in order to offer a comprehensive set of energy services"**.

- The ADEME study[51] also highlights the "**cultural and identity-based obstacles** which are harder to identify and overcome. However, we should not interpret the caution exercised by the craftsmen interviewed as an attachment to tradition or a simple resistance to change. The results allow us to dismiss the idea that the small-business model is poorly adapted and focus instead on the idea that **it needs time to adapt** to changes affecting the very essence of these trades and the way their operate".

- According to the same report by COSTIC, "since the building sector is organised into trades, it is also divided into a **very large number of small or very small businesses**. As a result, "the building sector is Taylorised to a certain extent". Construction professionals know each other, meet and work on the same building projects. But **opportunities for actual cooperation appear to be few and far between"** .
  According to the **FEE BAT operations cell,**[52]**",** even though craftsmen "are aware of the advantage of performing several types of work at the same time, and are keen to encourage a global approach, companies and craftsmen very rarely offer it as part of their services: they (the craftsmen) still find it **difficult to work as part of a network".**

[50] **COSTIC.** Conditions sociotechniques au développement d'une approche multimétiers. 2010

[51] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

[52] **CELLULE FEE BAT.** Dispositif de formation FEE Bat. Formation aux économies d'énergie des entreprises et artisans du Bâtiment. Etude d'impact – 2ème phase - résultats de l'enquête auprès des particuliers. 2010

- The services offered by companies appear to be **quantitatively and qualitatively inferior to those necessary to meet current challenges.** The report by ADEME[53] refers to the Observatoire OPEN's report that "notes that only a very small minority of improvements could be considered to be exemplary in terms of their level of thermal performance. Although the report highlights the obstacles generated by the customers themselves (household priorities, difficulties arranging and paying for energy-saving improvements), **the absence of compulsion, the lack of training of professionals in new technologies and the absence of bridges between the different trades appear to be the main obstacles to achieving their objectives**".

9.3.2 Cross-cutting, "cultural and identity-based" factors, which to a certain extent structure the way in which craftsmen see change and influence their individual and collective responses in a context of rapid change

- According to the study by ADEME[54], "most craftsmen believe that the market is **not mature enough yet** and are taking a "wait and see" approach, which is technically and economically more secure. Reluctant to position themselves, they fail to provide an effective vehicle for thermal improvement solutions" . According to the report by the CLUB DE L'AMELIORATION DE L'HABITAT[55], "Professionals still lack the persuasive powers to recommend appropriate technical solutions and financial grants to customers".
  On the other hand, according to the study by ADEME, a "highly active minority of craftsmen" are offering increasingly innovative services and young entrepreneurs seem to be positioning themselves in this way. "The business opportunities opened up or fostered by the Grenelle de l'environnement (environmental forum) give rise to forms of competition not covered by traditional regulatory measures and destabilise the operation of the small-business sector. Especially since, from their point of view, this market may not be sustainable and which they may lose to the advantage of industrial operators".

9.3.3 Organisational factors arising from the need for trades to work more and more closely together

- According to the ADEME study[56], "if it was simply a matter of changing routines or filling a skills gap, then it would be easy to very quickly bring the sector up the level required to meet these expectations. However, given the scope of current developments, more intensive discussions need to take place within and between the relevant trades.
  The most obvious solution, and certainly the most accessible because already in use in other areas, is the development of a professional network adapted to these new requirements".

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[53] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

[54] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

[55] **Club de l'Amélioration de l'habitat.** Le point sur le marché de l'amélioration énergétique des logements 2010-2012. 2012

[56] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

9.3.4 Lack of training to compensate for a shortage in qualified labour

- According to the Observatoire de la Petite Entreprise[57] "in general, the continuous training of managers decreases with the size of the company (this is also true of training for employees)," i.e. small companies seldom attend training sessions.

  "The first reason given by company heads is often a **lack of time**: in fact, the smaller the company, the more the absence of the manager or employee disrupts - or paralyses - the operation of the company. Set against this background, training is only taken if it is essential to the correct functioning of the business."

  In terms of the sector of the building industry that interests us here, 98% of companies have fewer than 20 employees. The ADEME[58] study confirms this observation and states that "small crafts businesses often have **difficulties accessing continuous training**. Due to the unavailability of the manager and staff, investment is often limited to compulsory training. 'There are compulsory courses on safety but not on SD, we don't have the time, it's a real shame.'

- According to the Observatoire de la Petite Entreprise[59],"The second reason given by managers for their poor commitment to training is the "lack of need" (by which they mean, there is no urgent and clearly identified need). The question of cost does not seem to rate highly."

- According to the same Observatoire, "other researchers highlight cultural reasons and psychological resistance to the training system on the part of certain managers who give priority to 'learn by doing'. The ADEME/Alliance Villes Emploi study[60] also confirms these findings and reveals how "cultural and "technical" (accessibility, costs, etc.) obstacles also have an impact on whether business managers, craftsmen and their employees take training courses or not." It also pointed to "the need to 'support' these business managers and craftsmen, particularly by making it easier for them to access training, to help them anticipate skill developments, and to organise and manage a 'quality approach'."

- According to the same ADEME/Alliance Villes Emploi study, "In mid-2011, a large majority of employees of small businesses have little or no training in skills required to 'work in an alternative way'… "90% of companies with fewer than 10 employees never send staff on training courses (national FAFSAB data)."
  There are also "**problems retraining** people who have worked in the profession for many years and who can no longer perform their trade due to poor health" and "for jobseekers not from the construction sector, who need to acquire basic skills before learning new additional skills".

- It also remains **difficult to engage the interest** of professionals in **eco-construction training**, including new construction techniques and the use of eco-materials.

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[57] **Fédération des Centres de Gestion Agréés, Banque Populaire.** L'Observatoire de la Petite Entreprise N° 45. 2012

[58] **ADEME, Ministère de l'Ecologie et du Développement Durable (French Ministry for Ecology and Sustainable Development)** Les entreprises artisanales du bâtiment face aux enjeux du développement durable. 2009

[59] **Fédération des Centres de Gestion Agréés, Banque Populaire.** L'Observatoire de la Petite Entreprise N° 45. 2012

[60] **ADEME, Alliance Villes Emploi.** Projet Maisons de l'emploi et développement durable : Adapter les contenus de formation et développer la formation des formateurs. 2011

9.3.5 The FEE BAT scheme

- **ATEE notes in its report**[61] **that** "the **geographic distance** between companies and craftsmen from a single training session was also cited as an **obstacle to the formation of participant groups and, as a result, the implementation of a global approach.** This was particularly the case for very small companies and even individual entrepreneurs who had a very limited scope for action. The lack of companies or craftsmen who had benefited from training in their own geographic area was also cited as a reason by some people".

9.3.6 Inadequate or inappropriate training services

- According to the ADEME study[62], trainers say they **do not have an in-depth knowledge of the guidelines contained in the Grenelle de l'environnement (environmental forum) and only a partial knowledge of energy performance.** "However, the information does exist (energieBAT, for example) but teachers and trainers who have access to it rarely consult this information".
  "The documentary sources analysed and the interviews conducted to identify needs in this area reveal the need for a more global results-based approach. **However, as far as existing services are concerned, the impact on the various trades and the need to work together, and to self-assess your work, are lacking"**.

- According to the ADEME/Alliance Villes Emploi study[63], the problems identified in terms of training services are:
  - A lack of transparency in terms of the skills required and the training services available in or from a particular geographic area.
  - Training organisations do not coordinate their efforts and/or pool their resources enough.
  - Funding for training does not match needs, especially since company training budgets are already partly or wholly used for "regulatory" training.
  - Training methods and practices need to be revised to appeal to professionals, including by taking into account the limited time available for training. The increasingly complex thermal expertise required to convince customers is hampered by training and qualifications that take time and lack appeal, despite the fact that they are judged to be satisfactory by the companies that have taken the courses.

[61] **Association Technique Energie Environnement.** Bilan de mise en œuvre du dispositif FEEBAT. 2012

[62] **ADEME, CAFOC Nantes.** Training needs of teachers and trainers in the building and renewable energy sector based on the issues identified during the Grenelle de l'environnement (environmental forum). 2012

[63] **ADEME, Alliance Villes Emploi.** Projet Maisons de l'emploi et développement durable : Adapter les contenus de formation et développer la formation des formateurs. 2011

- According to the French Ministry for Education[64], “developments in standards, where necessary, appear inadequate with regard to the behaviours and practices to develop and the knowledge and expertise to pass on to young professionals. If, in addition to changing these standards, recommendations were made in terms of teaching and assessment practices, it would have a major impact.”

[64] **CPC EDUCATION NATIONALE.** Sustainable development, energy management. Evolution et conséquences sur l'offre de formation. 2010

10CONCLUSIONS OF THE REVIEW

To develop its capacity to achieve the goals set out under the Grenelle de l'environnement (environmental forum) accords, the building sector needs to improve and speed up the rate at which professionals develop their skills (particularly labourers and craftsmen targeted by the Build Up Skills project), and increase the number of qualified people who have received basic training.

This review points to several lines of inquiry which are summarised and organised under six complementary topics, which will provide a framework for future developments and the drawing up of a Build Up Skills road map for France.

Topic 1 – The groups concerned and the skills to acquire

The review highlighted the need to provide 70,000 people with basic training and 230,000 people with continuous training annually.
In addition to technical skills and practices, an emphasis needs to be placed on cross-cutting skills. Courses also need to foster a global approach to construction based on a shared culture. Professional knowledge must not focus on technical skills alone. It should highlight the interfaces between trades and encourage people to "work together" (based on organisational changes, interpersonal skills and self-assessment).

Topic 2 – Educational engineering

In general, it is necessary to:

- Promote educational innovation.
- Develop practice-based training: on-site and platform-centred training.
- Develop inter-trade training and practical simulations, on technical platforms for basic training and building sites for continuous training, to enable several trades to operate in a collaborative manner.

Topic 3 - Eliminating problems and removing obstacles to training

In terms of basic training, it's important to continue the efforts made by the branch to improve the image of construction trades among young people, particularly via careers advisers.
As far as continuous training is concerned, and in order to promote it, there are several priority areas of action:

- Stimulate a demand for training by making the environmental dimension a condition for grants and access to public and private markets.
- Make craftsmen, business managers and their employees aware of the need for training to cope with new energy transition challenges and requirements.
- Explore and include the issue of training accessibility and the time allocated to it (including the issue of compulsory training)

Topic 4 – The training of trainers and a training centre strategy.

With regards to some 12,000 trainers and teachers, the review recommends:

- Providing more information on the obligations and measures recommended by the Grenelle de l'environnement (environmental forum) initiative.
- Enabling trainers to find their own positioning.
- Ensuring intermediate educational supervision of trainers (works managers, training managers, etc.)
- Implementing a global approach based on pedagogical engineering by promoting multi-trade professional practical simulations.
- Developing the technical skills specific to each job.
- Supporting trainers perform technological and educational supervisory tasks.

Topic 5 – Quality-based training

The review underlined the importance of:

- Promoting "symbols of quality" in companies
- Identifying short training courses, diplomas and accreditations that render holders eligible for symbols of quality.
- Enhancing recognition by corporate entities of skills acquired during short training exercises on energy efficiency and renewable energy.

Topic 6 – Funding for training and its financial engineering.

It will be necessary to:

- Provide craftsmen and business managers with support managing the financial engineering dimension of their training plan.
- Enhancing the earmarking of specific funds for recognised training in the fields of Energy Efficiency and Renewable Energies.

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13GLOSSARY

ACFCI	*Association des chambres françaises de commerce et d'industrie (National federation of French chambers of commerce and industry)*
ADEME	*Agence de l'Environnement et de la Maîtrise de l'Energie (French agency for the environment and energy management)*
AFPA	*Association nationale pour la formation professionnelle des adultes (French national association for vocational training)*
ANAH	*Agence nationale de l'habitat (French national housing agency)*
ANIFRMO	*Association nationale interprofessionnelle pour la Formation rationnelle de la Main-d'œuvre (National interprofessional association for the practical training of manpower)*
AOCDTF	*Association Ouvrière des Compagnons du devoir du Tour de France (French national journeymen's trade guild training and apprenticeship organisation)*
AVE	*Alliance Villes Emploi (Alliance of local public service employment centres)*
APCMA	*Assemblée permanente des chambres des métiers (Permanent assembly of job and craftsmen associations)*
APEL	*Amélioration de la Performance Energétique des Logements (Improvement of building energy performance)*
AQC	*Agence Qualité Construction (National association of building organisations to promote construction quality)*
ARF	*Association des Régions de France (Association of the regions of France)*
ATEE	*Association Technique Energie Environnement (Energy environment technical association)*
BATI-MAT-TP-CFTC	*Bâtiment - Matériaux - Travaux Publics - Confédération Française des Travailleurs Chrétiens (Building, materials, public works, French confederation of Christian workers)*
BBC	*Bâtiment de basse consommation (Low consumption building)*
BBC- Effinergie	*The BBC-effinergie® label is awarded to new or partly new buildings whose very low energy requirements contribute to attaining the 2050 goals of achieving a fourfold cut in greenhouse gases emissions.*
BEPOS	*Bâtiments à énergie positive (positive energy buildings)*
BTP	*Bâtiment et Travaux Publics (building and public works). All activities*

	relating to the design and construction of public and private buildings, industrial and otherwise, and infrastructure such as roads and pipelines.
BTS	*Brevet de Technicien Supérieur (BTS). A national vocational training certificate usually awarded following a two-year, post- baccalaureate course.*
BZEE	*The BZEE network, which originated in Germany, develops training programmes related to renewable energy that are practically oriented to meet the industry's qualifications requirements.*
CAFOC	*Centre Académique de Formation Continue (Academic centre for continuing training)*
CAP	*Certificat d'Aptitude Professionnelle (Vocational training certificate).*
CAPEB	*Confédération de l'Artisanat et des Petites Entreprises du Bâtiment (Federation of small construction contractors and craftsmen)*
CCCA-BTP	*Comité de Concertation et de Coordination de l'Apprentissage du Bâtiment et des Travaux Publics (Committee for consultation and coordination of building and public works apprenticeships)*
CCI	*Chambres de commerce et d'industrie (Chamber of commerce and industry)*
CEC	*Cadre européen des certifications (European certifications framework defined by the European Commission)*
CERPET	*Centre d'Études et de Recherches des Professeurs de l'Enseignement Technique (Centre for study and research for technical education teachers)*
CFA	*Centres de formation d'apprentis (Apprentice training centres)*
CFDT	*Confédération française démocratique du travail (French democratic labour confederation)*
CFE-CGC	*Confédération française de l'encadrement - Confédération générale des cadres (French executives and managers confederation)*
CFTC	*Confédération Française des Travailleurs Chrétiens (French confederation of Christian workers)*
CGDD	*Commissariat Général au Développement Durable (General commissariat for sustainable development)*
CGPME	*Confédération générale du patronat des petites et moyennes entreprises (General confederation of small and medium-sized enterprises)*
CGT	*Confédération générale du travail (General labour confederation)*
CGT-FO	*Confédération générale du travail - Force ouvrière (General labour confederation - Force Ouvrière)*

CIF	*Congé individuel de formation (Personal training leave)*
CICF	*Chambre de l'Ingénierie et du Conseil de France (French chamber of engineering and consulting)*
CLER	*Comité de liaison Energies renouvelables (Committee of renewable energy networks)*
CMP	*Certificat de maîtrise professionnelle (Vocational proficiency certificate)*
Cnam	*Conservatoire national des arts et métiers (National school of engineering and technology)*
CNCP	*Commission Nationale de Certification Professionnelle (French professional accreditation commission)*
CNFPT	*Comité Paritaire National pour la Formation Professionnelle (Joint national association for vocational training)*
CNOA	*Conseil National de l'Ordre des Architectes (National council of architects)*
COFRAC	*Comité français d'accréditation (French accreditation committee)*
Constructys	*Accredited joint collection fund (OPCA) for the construction industry. Finances the training of employees in building and public works companies, whatever their size*
COPIRE	*Commissions paritaires interprofessionnelles régionales pour l'emploi (Joint regional interbranch employment committees)*
COPREC	*Confédération des Organismes indépendants tierce partie de Prévention, de Contrôle et d'Inspection (Confederation of independent third party prevention, control and inspection organisations)*
COS	*Coefficient occupation des sols (Land use ratio)*
CPC	*Commissions professionnelles consultatives (Professional consultation committees)*
CPNFP	*Comité Paritaire National pour la Formation Professionnelle (Joint national association for vocational training)*
CPREF	*Commissions Paritaires Régionales de l'Emploi et de la Formation (Regional joint consultative committee on employment and training)*
CQP	*Certificat de Qualification Professionnelle (Certificates of professional qualification)*
CSTB	*Centre Scientifique et Technique du Bâtiment (Scientific and technical building centre)*
DAEU	*Diplôme d'accès aux études universitaires (University entrance diploma)*

DGEC	*Direction Générale de l'Energie et du Climat (Directorate-General for energy and climate)*
DGEFP	*Délégation générale à l'emploi et à la formation professionnelle (General delegation for employment and professional training)*
DHUP	*Direction de l'habitat, de l'urbanisme et des paysages (Department of housing, urbanism and landscapes)*
DIF	*Droit individuel de formation (Personal training entitlement)*
DPE	*Diagnostic de performance énergétique (Energy performance diagnosis)*
DUT	***Diplôme universitaire de technologie. A two-year qualification taken at a technical college. This French higher education university diploma is classed Training Level III.***
Eco Artisan	*A quality label awarded by QUALIBAT to small crafts companies who comply with household energy performance improvement standards.*
EDEC	*Engagements de développement de l'emploi et des compétences. A government-based scheme to include employment and skills development commitments in employment contracts.*
EDF	*Électricité de France*
EFFINERGIE	*An organisation designed to boost the availability of comfortable, energy-efficient buildings on the new-builds and renovated properties market. It has developed a number of initiatives and labels to this end.*
EFFINERGIE +	*Label launched by Effinergie*
Enerplan	*French union of solar energy professionals*
FAF.SAB	*Training insurance fund for employees of small crafts businesses in the building and public works sector*
FEE Bat	*Formation aux Économies d'Énergie dans le Bâtiment (Construction energy savings training)*
FFB	*Fédération Française du Bâtiment (French building federation)*
FFP	*Fédération de la formation professionnelle (Federation of vocational training)*
FGFO	*Fédération Générale Force ouvrière (General labour confederation - Force Ouvrière)*
FNCB-CFDT	*Fédération Nationale de la Construction et du Bois - Confédération française démocratique du travail (French national construction and wood federation - French democratic labour confederation)*
FNCMB	*Fédération nationale compagnonnique des métiers du bâtiment (National construction trade journeymen's guild federation)*

FNSC-CGT	*Fédération Nationale des Salariés de la Construction, Bois et Ameublement - Confédération Générale du Travail (National federation of construction, wood and furnishings employees - General labour federation)*
FNSCOP BTP	*Fédération Nationale des Sociétés Coopératives de Production du Bâtiment et des Travaux Publics (National federation of building and public works cooperatives)*
FNTP	*Fédération Nationale des Travaux Publics (National federation for building and public works)*
Format'eree	*Renewable energies training*
GHG	*Gaz à effet de serre (Greenhouse gases)*
GFC-BTP	*Groupement professionnel paritaire pour la formation continue dans les industries du bâtiment et des travaux publics (Joint trade group for continuous training in the construction and civil engineering sector)*
GPEC	*Gestion prévisionnelle des emplois et compétences (Forward-looking management of jobs and skills)*
GRETA	*Groupement d'établissements de l'Éducation nationale (Grouping of national education establishments)*
HPE	*Labels Haute performance énergétique (High energy efficiency labels)*
HQE	*Haute Qualité Environnementale is a high environmental quality brand and accreditation system*
Loi Grenelle 1	*An act providing an implementation programme for the Grenelle de l'environnement (environmental forum), known as "Grenelle 1", was passed on 3 August 2009. It contains 57 articles covering the energy and building sectors, transport, biodiversity and natural environments, governance and environmental and health risks.*
Loi Grenelle 2	*Adopted on 12 July 2010, the "national environmental protection law", "Grenelle 2", provides for the application of certain commitments contained in the Grenelle de l'environnement (environmental forum) commitments. Consisting of 248 articles, this major law underwent a number of considerable changes in its passage through the French parliament and sets out measures in six main fields: buildings and town planning, transport, energy, biodiversity, risk, health, waste and governance.*
MDE	*Maison de l'Emploi (Public sector employment centre)*
MEDEF	*Mouvement des entreprises de France (French business association)*
ONTSBTP	*Observatoire National des Travaux et Services liés au Bâtiment et aux Travaux Publics (National observatory of works and services related to building and public works)*

Accredited joint collection funds (OPCA)	*Organisme paritaire collecteur agréé (Accredited joint collecting fund)*
OPEN	*Observatoire Permanent de l'amélioration ENergétique du logement (ADEME'S permanent observatory on residential energy improvement)*
PBG	*Plan Bâtiment Grenelle (Grenelle building plan)*
PCS	*Plan de cohésion sociale (Social cohesion plan)*
PIB	*Produit intérieur brut (Gross Domestic Product)*
PCET	*Plan climat-énergie territorial (Territorial climate-energy plan)*
PNA 2012	*Plan national d'action en faveur des énergies renouvelables (National action plan for renewable energies)*
PNAEE	*Plan national d'action en matière d'efficacité énergétique (National energy efficiency action plan)*
PNRU	*Plan national de rénovation urbaine (National urban renewal plan)*
POPE	*Programme d'Orientations de la Politique Energétique (Energy policy framework)*
PRAXIBAT®	*Vocational training in constructing energy efficient and sustainable buildings*
PRÉBAT	*Programme de Recherche et d'expérimentation sur l'Energie dans le Bâtiment (Programme for research and experimentation on energy in buildings, initiated under the Climate 2004 plan and launched in 2006).*
PROMOTELEC	*Organisation for the sustainable use of electricity in residential and small service buildings*
PTZ	*Prêt à taux zéro (0% interest loan)*
PV	*Photovoltaic energy*
QUALIBAT	*Independent third party organisation that checks compliance with corporate commitments, particularly on building sites.*
QualiBOIS	See RGE and Qualit'EnR
QualiPAC	See RGE and Qualit'EnR
QualPV	See RGE and Qualit'EnR
QualiSOL	See RGE and Qualit'EnR
Qualit'EnR	*Founded by five national professional bodies, since the beginning of 2006, Qualit'EnR has been the French association for the quality*

	installation of renewable energy systems. Qualit'EnR promotes quality professional services and manages quality-related schemes and regulations related to the Qualisol, QualiPV, Qualibois, and QualiPAC labels.
Qualifélec	*French organisation for the qualification of electrical engineering and energy companies*
RAGE	*Règles de l'Art Grenelle Environnement (Rules of the Grenelle de l'environnement (environmental forum)*
RBR 2020	*Règlement Bâtiment Responsable 2020 (2020 Responsible building regulations)*
RGE	*Reconnu Grenelle Environnement (Recognised by the Grenelle Environnement [environmental forum]) label. This label is a guarantee of quality and compliance with current energy efficiency improvement standards; In order to help householders chose a qualified company to perform their energy efficiency work, ADEME and the French government have put in place a charter of commitments consisting of eight quality symbols benefiting from the "Recognised by the Grenelle Environnement" label.* *Four of the eight quality signs that have been awarded the label are renewable energy Qualit'EnR signs: Qualisol, QualiPV, Qualibois and QualiPAC.*
ROME codes	*Répertoire Opérationnel des Métiers et des Emplois (Operational inventory of trades and jobs)*
RNCP	*Répertoire national des certifications professionnelles (National inventory of professional accreditations)*
RT	*Réglementation Thermique (Thermal regulations)*
SAV	*Service Après-Vente (After sales service)*
SCOP	*Sociétés Coopératives de Production (Production cooperatives)*
SER	*Syndicat des Energies Renouvelables (Renewable energy union)*
SRCAE	*Schémas régionaux du climat de l'air et de l'énergie (Regional climate, air and energy plans)*
SYNAMOB	*Grouping of project management professionals, primarily architectural designers.*
SYNTEC	*The Syntec federation's member unions include more than 1250 French groups and companies specialising in engineering, IT services, research and consultancy, and vocational training.*
THPE	*Haute performance énergétique (Very high energy efficiency)*
UECF-FFB	*Union des Entreprises de génie Climatique et énergétique de France - Fédération Française du Bâtiment (Union of climate engineering and energy companies in France - French building federation)*

UNCP-FFB	*Union Nationale de Couverture Plomberie - Fédération Française du Bâtiment (National metal roofing union - French building federation)*
UNSFA	*Union Nationale des Syndicats Français d'Architectes (National union of french architectural unions)*
UNTEC	*Union Nationale des Economistes de la Construction (National union of construction economists)*
UPA	*Union Patronale Artisanale (Union of small crafts business managers)*
VAE	*Validation des acquis de l'expérience (APL - accreditation of prior learning)*