GROUPE SNI

THE ENERGY TRANSITION for GREEN GROWTH

SNI Group's commitments and initiatives

Construction and property management

SNI ENVIRONNEMENT

Group Property Management Department

3 May 2016

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GROUPE Caisse des Dépôts

GROUPE SNI

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1. The challenges for property owners

Construction is France's most energy-intensive sector and accounts for 42% of national energy consumption, while the residential-service sector is the third biggest emitter of greenhouse gases (19.1% of the total), behind transport (more than 26%) and agriculture (20.6%). Clearly then, the building sector has a very large environmental footprint. With more than 346,000 businesses, €169 billion in revenues and 1.2 million employees, the French building sector – which covers all of the activities involved in designing and constructing public and private buildings – is of central importance to the French economy.

This makes the housing and property sector a key part of any initiatives to implement energy transition strategies and the various SNI Group entities have a key role to play in cutting the environmental footprint of construction, renovation and property management activities.
Sustainable Building Practices cover all aspects likely to have an environmental impact such as environmental management, eco-building, eco-design and energy performance.

2. SNI Group's commitments

Beginning in 2007, the SNI Group introduced sustainable development practices into housing via its Environmental Quality Building Charter. These structural commitments were broken out into concrete initiatives, including the Group's four main commitments:

- helping to preserve the environment, in particular by using SNI EnVironnEment, an application that measures projects' environmental impacts;
- keeping building charges as low as possible for tenants;
- offering suitably adapted, quality dwellings;
- promoting awareness of sustainable development issues.

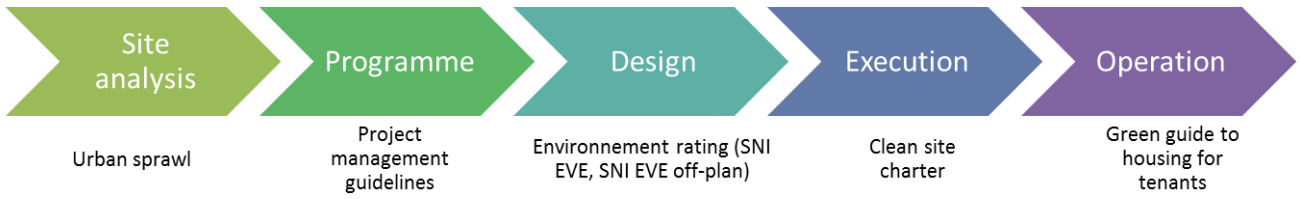
These commitments have been translated into an operational response as illustrated throughout the rest of this presentation.

3. An integrated approach to environmental management

All projects – from the design to the implementation phase – are developed around an environmental quality approach. Aside from the different technical solutions chosen, it is the Group's own environmental management approach that is instrumental in limiting the environmental impact of buildings.

3.1 Environmental performance in each phase of a project

SNI analyses specific sustainable development issues in each project phase:



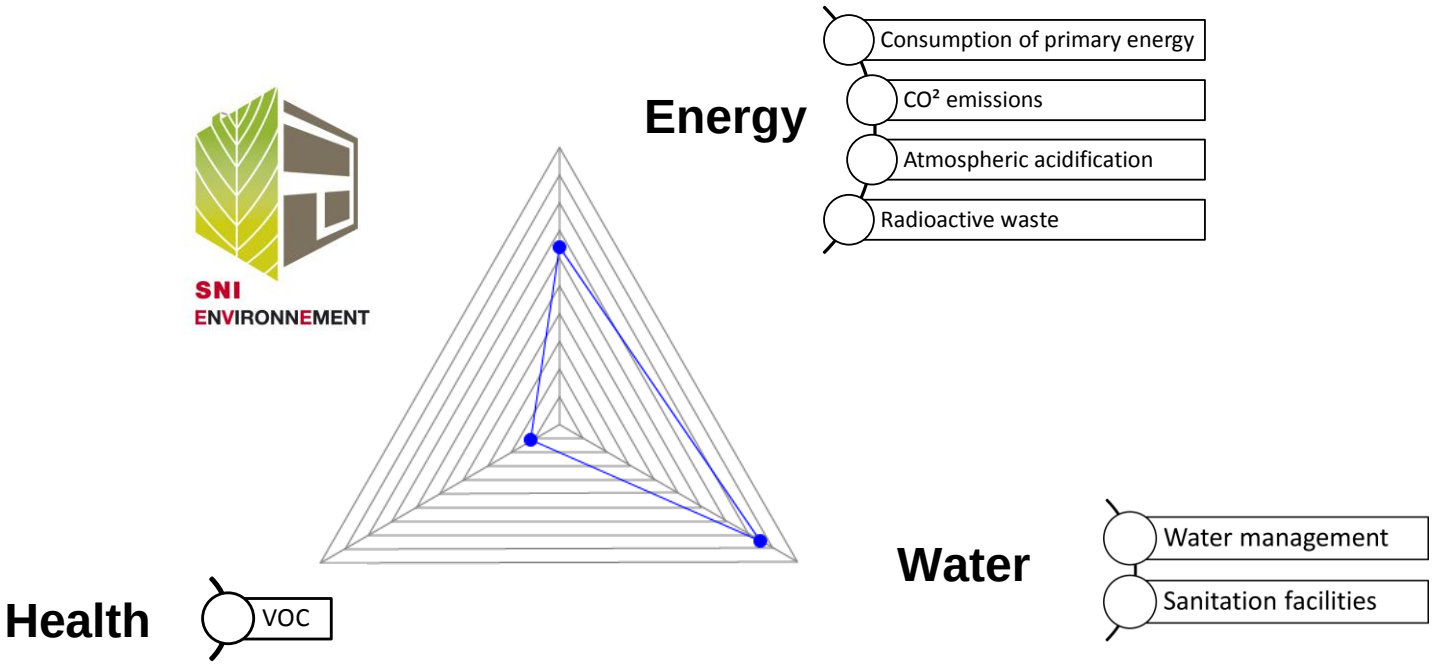
A comprehensive approach to environmental quality

3.2 SNI EnVironnEment: analysing a building's life cycle

SNI in conjunction with the Scientific and Technical Centre for Construction (*Centre Scientifique et Technique du Bâtiment*) has developed an application that ranks projects based on three criteria: water consumption, energy performance and protection of health. The application, known as SNI EVE (SNI EnVironnEment), also factors in specific local and regional data on climate change, GHG emissions, flooding risk, etc.

SNI EVE facilitates eco-friendly solutions for each criterion by:

- promoting efficient, eco-friendly materials that are adapted to the project,
- calculating impacts over material and equipment life cycles,
- choosing materials that are low VOC emitters (volatile organic compounds).[1]



Use of SNI EVE has now been extended to off-plan operations as well as to building renovation programmes.

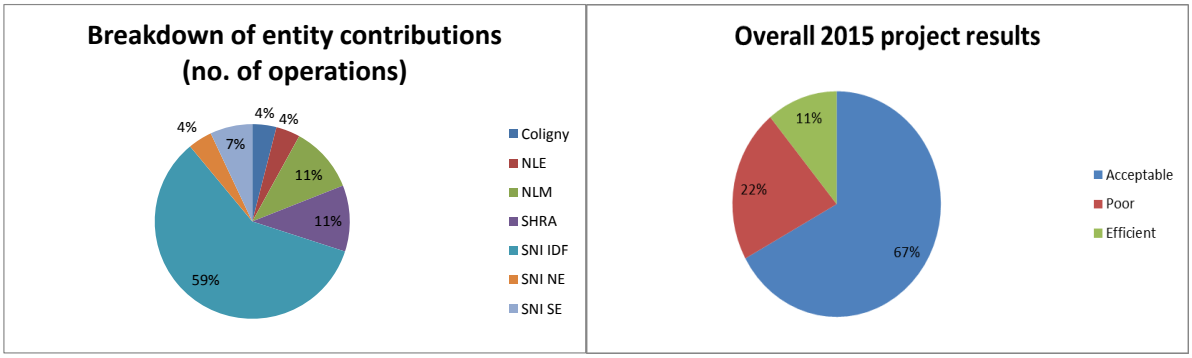
The Group's results:

At present, the Group's results are based on:

- 27 operations analysed, or 57% of projects submitted for committee-level approval, representing 1,072 units of housing;
- this analysis is virtually systematic in more recent project decision-making committees;
- 70% of projects analysed concern off-plan intermediate housing programmes.

[1] 2013 CSR Report

The overall results are favourable and 80% of the projects analysed have been rated as efficient or acceptable (Group average in directly-owned projects).



The application appears to be user-friendly as numerous entities have already deployed it to perform at least one analysis (in particular, SNI IDF [Paris region] has used it in more recent project committees to analyse many different projects, thence its important contribution). A number of files submitted without an SNI EVE off-plan analysis will subsequently be re-analysed using the application.

Initial analyses of "weak" and "efficient" categories

Profile of projects rated as **"weak"** by SNI EVE (off-plan analysis)
Of the 27 projects analysed, only **6** were rated "weak". The energy rating criteria were largely similar for the 6 projects:

Criterion	**Profile of projects rated "weak"**
Benchmark	No project performance was rated > 2012 Energy performance regulations
Energy consumption target	PEC[2] projects > 60 kWhpe/sq.m/year
Type of energy used (hot water and heating)	Natural gas
Solar panels	No
Materials used	100% of projects: - Reinforced concrete structure - PVC joinery - PVC floors

Of the 6 projects rated "weak", 4 obtained an overall mark of 5.8/10, which puts them only slightly below the threshold for "acceptable" projects, i.e., 6/10.

Profile of projects rated as **"efficient"** by SNI EVE (off-plan analysis)
Of the 27 projects analysed, **3** were rated "efficient".

Criterion	**Profile of projects rated "efficient"**
Benchmark	Project performance rated > 2012 Energy performance regulations
Energy consumption target	PEC projects > 50 kWhpe/sq.m/year
Type of energy used (hot water and heating)	Urban heating
Solar panels	66% of projects:
Materials used	100% of projects: - Reinforced concrete structure

[2] Primary energy consumption

	- Wooden joinery - Parquet floors

Summary:

The key differences between the two profiles are:
- the consumption benchmark, consumption target and type of energy
- type of joinery material used and the floor covering

The greatest potential for improvement resides in the consumption targets (performance ahead of 2012 Energy performance regulations – anticipation of 2018 deadline) and materials used (floor coverings and joinery). Major progress can also be made by enhancing product health quality (e.g., paint that has been certified NF Environnement).

3.3 Promoting awareness of sustainable development

Energy or water consumption, sorting waste, etc.: SNI Group entities have rolled out various initiatives to promote awareness among tenants deployed by local administrative and maintenance staff using different media: information flyers, information posted on bulletin boards, news features in tenants' webspace, and events organised with local associations, etc.[3]

4. Respecting a site's natural environment

4.1 Urban sprawl

The Group has developed an analytical and decision-making tool to limit urban sprawl in new projects. It is systematically applied for each new construction project and qualifies a project's features in order to avoid exacerbating the most harmful consequences of urban sprawl. The analysis focuses on three parameters: development strategy, the plot's surrounding environment and the characteristics of the construction project.

The Group's results:

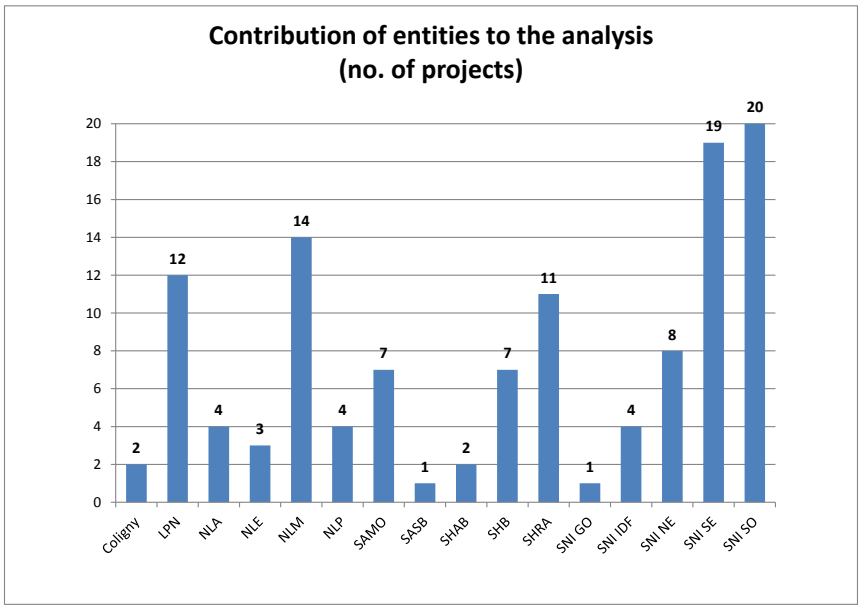
Increasingly frequent use:

The framework was used more and more frequently in 2014. In mid-2014, it was being used for approximately 40% of projects and its use has become virtually systematic since then. Since it was introduced in January 2014, this application has been deployed to analyse 65% of operations.

An evolving database

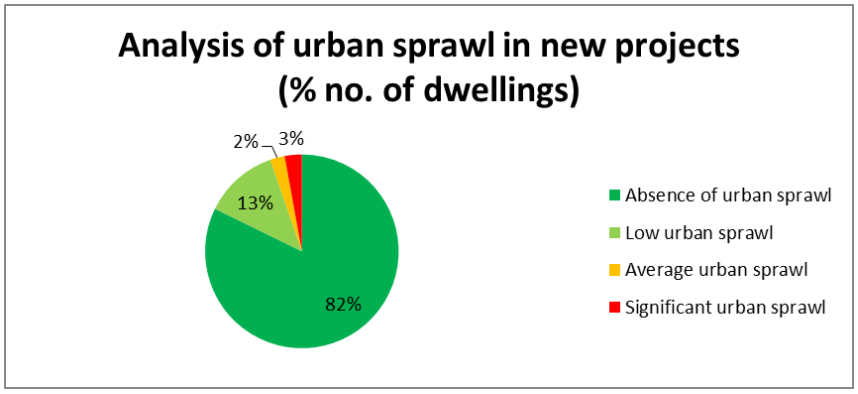
This virtually systematic use has helped construct a database of 116 new operations:
- representing 4,233 units of housing;
- 73% of off-plan operations (half of which involve intermediate housing).

[3] 2013 CSR Report



The Group's results:

The overall results are very positive. The number of projects deemed to contribute to urban sprawl (low, average or high contribution) is less than 20% of production.



These results are closely bound up with the Group's policy of focusing on collective-type housing in big cities in areas with good public transport connections.

Profile of projects that contribute to urban sprawl:

Indicators	Results for all operations	Results for projects linked to urban sprawl
% of project less than 500m from public transport	93%	79% (bus in 100% of cases)
% of projects located within a "*schéma d'agglomération*" urban plan zone	58%	33%
% of collective housing projects	80%	66%
Cumulative % for the 3 indicators	47%	12% No project classified as greatly adding to urban sprawl combines the three indicators

These projects are generally in an intermediate urban-rural setting:

- sometimes having public transport nearby, but limited to a bus service;
- frequently located outside big cities;
- and most frequently comprising standalone houses.

4.2 Biodiversity

Preserving biodiversity is a big challenge reflected in new requirements expected of contractors and new regulations: bio-diversity-friendly approaches to building and landscaping and managing outside spaces, stemming soil deterioration, etc.
SNI Group is striving to innovate in the domain of biodiversity, landscaping and adapting outside spaces to climate change and is also fully committed to the National Biodiversity Strategy sponsored by Caisse des Dépôts.

The Group fosters an approach that develops a site's ecological networks (e.g., greenways and wetlands) from a regional perspective and takes account of links between eco-systems within a given site. A patrimonial survey is currently being carried out by ecologists in order to come up with a plan of action.

SNI has also set up adapted management frameworks that deploy tailored approaches and different types of care in different spaces. These enable professional landscapers to care for green spaces based on their specific characteristics and their function in and around the city. In less utilised areas for example, they allow grassland to become meadow, providing a "refuge" for diverse flora and fauna and a "green lung" for the urban landscape. Differentiated management techniques are one way of conserving or even boosting ordinary biodiversity in built-up areas.

5. Environmental performance

Life cycle analysis is unanimously recognised as the right approach for assessing a building's environmental performance, using a series of environmental impact indicators based on:

- energy, water and resource consumption,
- waste generation,
- water, air and soil pollution,
- global warming, etc.

SNI Group's sustainable building strategy aims to deploy core environmental and sustainable development principles in the building sector.

5.1 Water management

SNI's two key focuses are reducing consumption and plot-based water management. Consequently, two key applications are used in the design phase: SNI EnVironnEment, which assesses theoretical consumption levels, and guidelines for adapting outside spaces for rainwater management.

Water consumption

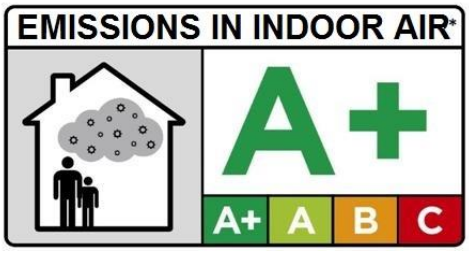
SNI EnVironnEment is used to regulate sanitation facilities deployed in projects and to cap their water consumption at maximum levels. Since the application was introduced in 2012, a significant improvement has been noted in design flow guidelines for sanitation facilities due to closer attention from project contractors. Low-flow fixtures are now standard in new developments and are evolving in line with the latest innovations.

Rainwater management

Plot-based water management can be incorporated into outside work and turned into an advantage in terms of landscaping and rainwater harvesting for watering plants (if necessary). SNI's three key focuses are plot surface water run-off, flooding risk and ecosystem impact. The guidelines for developing outside spaces are provided to all Group entities, setting out landscaping practices that promote efficient water management while retaining a qualitative aspect (sunken loops with adapted vegetation, water flow channels, ornamental pools, etc.). Plot-based water management also harnesses rainwater harvesting techniques.

5.2 Indoor air quality

Indoor air quality has become a key focus in building design in line with increasing awareness of its impacts on health, culminating in a specific policy within SNI focusing on indoor air quality in new developments and in property portfolio management.



For example, for new developments, the Group has issued specific recommendations on labelling information that can be assessed using the SNI EnVironnEment application. Moreover, to tackle this question more effectively, SNI Group conducted a survey in certain new housing developments in the pre-delivery phase in conjunction with CERQUAL (certifier of new housing). The study highlighted good air quality with levels of chemical compounds in line with the class A+ health-related label.

5.3 Eco-materials

SNI strives to promote the use of environmentally-friendly building materials – essentially comprising eco-materials and bio-sourced materials. As borne out by the life cycle analyses conducted using SNI EVE, these materials need to be used to limit the environmental footprint of building projects.
Hemp, wood, cellulose wadding and linoleum are among the materials selected and recommended for their technical and environmental qualities (performances in line with standard materials, low embodied energy content, natural and renewable raw materials, recyclable materials, etc.).
Wood may be used in several different building components (wooden frame structure, wood wool insulation material, wooden joinery, wooden roof tiles, wooden cladding, etc.) and its characteristics mean that it can easily replace standard materials. It also stores carbon during production (unlike standard materials), which considerably reduces its GHG emissions. Hemp is another good example and thanks to its thermal and mechanical properties, it is a material of choice for both building structure and insulation.
Eco-building encourages the use of local species of wood when these meet technical requirements, as well as wood from sustainably managed forests that are certified FSC (Forest Stewardship Council) or PEFC (Programme for the Endorsement of Forest Certification).
The Group leverages this approach through the Cerqual "bio-sourced" label which promotes bio-sourced building materials. A showcase project in Toulouse illustrates the Group's ambition to roll this experiment out to all Group entities. With 60kg/m²/floorspace of bio-sourced materials and the wholesale use of wood, flax and hemp, the Magnolias project obtained the label's highest possible level of certification.

5.4 Waste management

SNI Group strives to incorporate waste management techniques into every stage of the project development process:

- efficient design: managing waste generated using the SNI EVE application;
- construction: application of specific project charter;
- operation: initiating tenants in waste sorting and composting.

Using the SNI EnVironnEment internally-developed application for calculating a project's environmental footprint (see section 3) helps forecast the volume of waste generated by construction and efficient design.[4]
The Group has devised a low impact charter that describes how to go about reducing the risks of soil pollution and waste water discharges. It mainly focuses on reducing noise pollution and on optimal waste

[4] 2013 CSR Report

management and it sets out the essential phases involved in devising a framework for mitigating a project's impact. It is not enough to simply apply current regulations during the project implementation phase. We need to highlight the key points that will enable the project owner to deploy environmentally-friendly practices: biodiversity, local residents, nearby engineering structures, etc. Subcontractor guidelines clearly state that they must give priority to optimal waste management and materials that use less packaging[5].

5.5 Soil quality

Developments headed up by public operators on old industrial sites and urban wasteland are a great opportunity to combat urban sprawl and concentrate projects in large cities but there is also a risk of soil pollution at these former operational sites. The key issue is identifying and optimising a decontamination strategy that will bring the plot into line with its future intended use and SNI has factored this into the internal processes it has developed to handle this risk. The primary objective is to detect risky situations and carry out soil testing that accurately reflects the level of pollution. When this has been ascertained, action is required either on the pollution vector or at its source by limiting the transfer zone or decontaminating the area likely to expose tenants to a risk of pollution.

[5] 2013 CSR Report

6. Energy performance

For a number of years now SNI has been committed to pro-active energy performance management in its new developments and renovation projects.

6.1 Performance

The Group's stated ambition of being part of the energy transition is apparent in its willingness to submit all new collective housing projects to 2012 Energy performance regulations as of now, well ahead of the 2018 deadline. This means that the energy consumption of all new developments is limited to 50 kWh/m²/year.
A number of tools have been devised for promoting intrinsic energy efficiency in buildings: technical building guidelines, a design and construction manual for heating, domestic hot water and building ventilation, an overall cost application, energy feasibility studies, energy audits for renovation projects, eco-funding, etc.
A building's orientation and insulation are the guarantors of low consumption and enhanced summer comfort. Once this has been optimised, fixtures are chosen in accordance with two guidelines:

- product performance (e.g., boiler efficiency or CMV consumption)
- an overall cost approach (will maintenance costs eat up energy savings?)

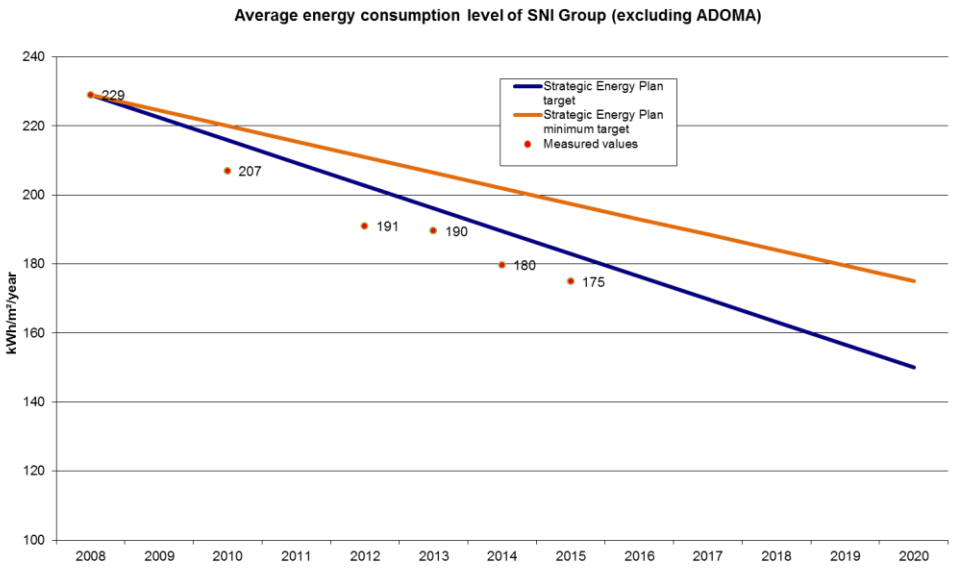
An energy feasibility study is systematically carried out for all new construction or renovation projects to facilitate technical choices by comparing the main existing solutions (heat pump, condensing boiler, renewable energies, etc.).

Tracking the Group's Strategic Energy Plan:

At end-2015, the Group's **consolidated average consumption** (excluding ADOMA) was **180 kWhep/m²/year.**

The breakdown by entity is as follows (in kWhep/m²/year):

	2010	**2015**	*Target 2020*
COL.	*114*	**105**	*107*
LPN	*211*	**160**	*188*
NLA	*201*	**222**	*189*
NLCL	*187*	**164**	*176*
NLE	*215*	**210**	*193*
NLM	*150*	**142**	*140*
NLP	*136*	**120**	*128*
SAMO	*154*	**126**	*145*
SHAB	*198*	**169**	*176*
SHB	*217*	**148**	*193*
SHRA	*173*	**147**	*162*
OSICA	*241*	**205**	*207*
EFIDIS	*223*	**212**	*187*
SNI IDF	*173*	**147**	*163*
SNI GO	*181*	**145**	*167*
SNI SO	*149*	**133**	*140*
SNI NE	*214*	**171**	*192*
SNI SE	*165*	**143**	*152*
SASB	*290*	**213**	240
Group	*207*	**175**	*150*

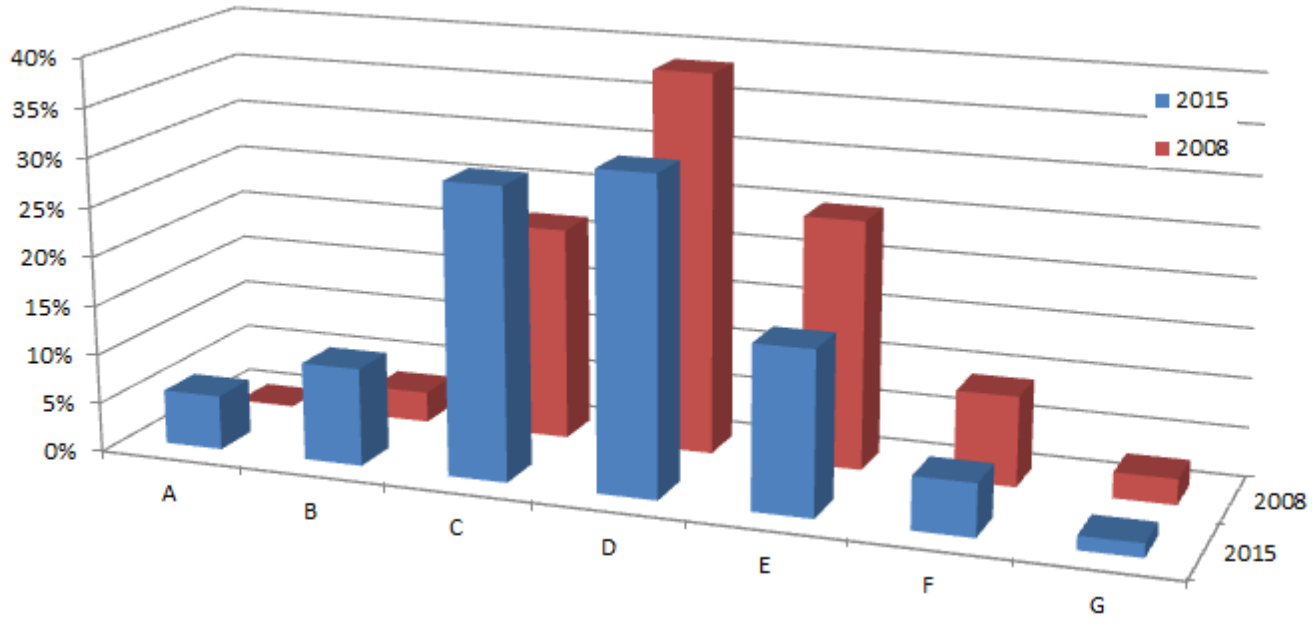


NB: targets under the Group's Strategic Energy Plan for 2011-2020 / *2 scenarios envisaged:*

- ***Grenelle***" scenario*: **150 kWhep/m²/year at end-2020** (crossing point at 182 kWhep/m²/year at end-2015);*
- ***"Minimum" scenario: 175 kWhep/m²/year at end-2020*** *(crossing point at 192 KWhep/m²/year at end-2015);*

Energy performance assessment - ESHs (social housing companies): 181 kWhpe/sq.m/year
Energy performance assessment - SNI : 147 kWhpe/sq.m/year

Changes in the Group's energy performance assessment certification between 2008-2015:

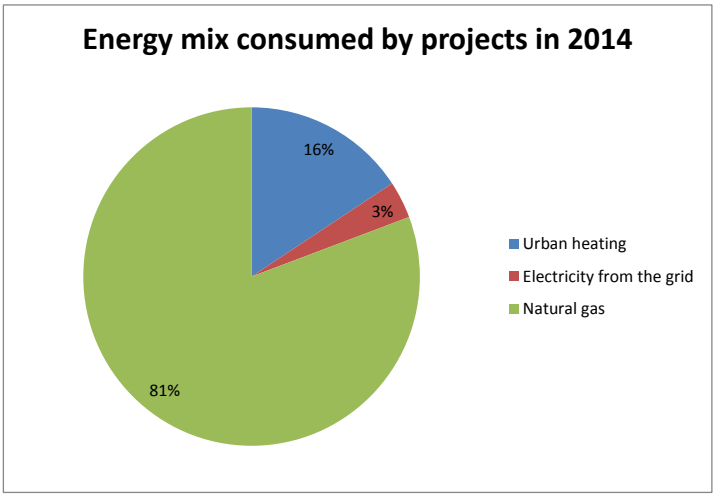


6.2 Resources

SNI's procurement policies provide for infrastructure operating contracts with incentive clauses that encourage service providers to keep a tight rein on their consumption.

An analysis of energy bills in new developments in 2014 highlighted the increasing use of renewable energies generated from urban heating networks with a small environmental footprint.

Keeping rental charges down is also a constant focus for the Group. Energy poverty can only be reduced or removed by constantly improving the energy performance of buildings and through appropriate technical decisions. A study of energy poverty within the Group is currently in progress and will be used to deploy actions tailored to the situations identified.



7. Mobility

7.1 Soft mode travel

In the site planning phase, SNI strives to balance the various modes of transport, favouring building access for "soft" modes, i.e., walking and bikes. Pathways are laid to facilitate their use: adapted surfaces, managing differences in levels, reserved lanes safe from cars, etc. Promoting bicycle use requires adapted, secure bike sheds with sufficient space (0.75m² per dwelling for 2-room apartments and 1.5m² for larger dwellings) equipped with bike stands (in accordance with Decree N°2011-873).
Also, to facilitate the development of new forms of mobility, starting in the design phase, parking spaces are set aside for recharging electric vehicles.

7.2 Electro-mobility

In anticipation of the growing interest in electric cars, SNI offers tenants a comprehensive service that includes the installation, operation and upkeep of recharging infrastructure as part of a Caisse des Dépôts et Consignation start-up venture. The first three charging stations have been installed in the Blanqui Residence in Paris where two households are testing the offer over a month-long period using two electric vehicles specifically rented for this purpose. For a monthly fee, tenants' parking spaces are equipped with a recharging socket and they may avail of other optional services such as consumption tracking.
In the immediate term, SNI wants to demonstrate the feasibility and benefits of this innovative service. In the longer term, it hopes to put out tenders for mobility management services to be operated out of the car parks in the buildings it owns. For information, the major obstacle to the development of the electric car in France is the shortage of recharging stations.

8. Living conditions

8.1 Adaptability of dwellings

Given that over 60s currently make up more than a quarter of the French population and will account for over one-third in 2060, adapting the Group's housing portfolio to the needs of the elderly and their reduced autonomy is a major challenge for the Group. SNI is committed to this adaptation and the related programme currently covers 7,500 dwellings.
In its "Blue Book", the Group has deployed an action plan covering the 2012-2020 period and setting aside part of its new developments for the elderly, as well as adapting the existing stock of housing within the scope of renovation or annual building programmes. By 2020, nearly 18,000 units of housing will be accessible for people with reduced mobility and adapted to elderly tenants, and four times more dwellings will have been refitted for this purpose.[6] This expertise, which has already been developed in the Group's existing housing portfolio, will be deployed via adapted amenities in new developments.

[6] Extract from 2013 CSR Report

8.2 Acoustic comfort

On 10 December 2014, the Group subsidiary EFIDIS was awarded a "Silver decibel" in the "prevention and awareness" category of the Golden decibel awards organised by the French Noise Abatement Council (*CNB*). This project – one of a number of innovative initiatives to combat noise pollution – presented work carried out with the tenants of three new housing residences with poor satisfaction ratings for noise-related issues.

A survey was organised to figure out the reasons for the dissatisfaction, followed by measures taken inside the 137 dwellings concerned. One of the conclusions was that noise tolerance thresholds have changed: nowadays, merely hearing a noise gets on people's nerves – even one-off noises not really considered to be a problem – in spite of measurements taken indicating that the level of acoustic comfort is in line with current regulations.

The Group is drawing upon these findings to continue its efforts in the noise environment starting in the design phase (tackling sound bridges, organising housing from a spatial perspective, visual acoustic control during the works phase, *in situ* measures in the pre-delivery phase).

8.3 Lighting

Night time lighting around social housing developments is indispensable for residents but it can also be a source of wasteful expenditure that has to be paid for by tenants as well as having a negative impact on fauna by interfering with animals' biological clocks (sleep, reproduction), destroying insects attracted by light, or interfering with the nocturnal migration of certain species.

To reduce light pollution and related consumption, the Group has devised recommendations in line with the needs and uses of tenants in new developments:

- an inventory of uses to determine suitable lighting approaches,
- a lighting plan that focuses on type of lamp post, power, timer and direction of light cone, all with a view to more streamlined lighting,
- alternatives to traditional lighting in terms of energy sources and supply as well as types of bulb used.