

Community Outreach

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Chapter 8
Community Outreach

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1 Introduction

Total's CO_2 Capture, transport and Storage (CCS) research pilot project in Lacq – inaugurated in January 2010– was not only a technical experiment, but also a social and legal innovation. This project was one of the first integrated CCS projects in the world at this scale, and the first to be authorized in France.

At a local scale, the significance of social aspects arises from the relatively high stakes: a large population lives close to the storage area, in the city of Pau and the neighboring cities, up to nearly 150,000 inhabitants in 2007. In the Lacq industrial facility (located 30km from the injection site) where the CCS chain starts, the population has been living for the past 50 years with a high level of industrial activity. But in the immediate surroundings of the storage area, the population is semi-urban or rural and with less history of industry.

After describing the local context, this chapter presents the local actors and describes the "concertation"[1] process that was led before and after the official permit request. The final sections present the result of a survey of the Jurançon population and the analysis of the press coverage of the project.

To obtain the most exhaustive description of our case, we followed the monographic approach, which led us to using several social science research methods. These methods included: bibliographic research, face-to-face interviews, passive observation, participative observation (one of the authors is a member of the supervisory commission CLIS), qualitative and quantitative media analysis of the press, as well as a local population survey. Results were discussed and validated with the stakeholders at several workshops on CCS, organized by CIRED and others.

1 "Concertation" is a French usual word, but again used for an institutional and legal procedure. For details, see Section 4. *Etymology*: concertare (Latin), to combat, to dispute, to keep up with [in French: combattre, disputer, rivaliser]. The French word "concertation" keeps a common sense of reciprocal or mutual interaction or control, among things or persons, and is "process-oriented" far more than "decision-oriented". *Synonymy*: French word "concertation" is near synonymous (metonymically) with the French "négociation". The verb "concerter" is synonymous, in order of decreasing probabilities, with: combiner, préparer, arranger, calculer, préméditer, mûrir, organiser; that is in English, respectively: to combine, to prepare, to compound, to calculate, to premeditate, to mature, to organize. Cf. Dictionary of [French] synonyms of CRISCO (Caen University) via the CNTRL website :
http://www.cnrtl.fr/synonymie/



Illustration 1: During a field visit, Nicolas Aymard, Total Project Manager, presents the CCS project to the searchers working within the framework of Soceco-2 research program (2008) - PHOTO CIRED.

2 Local context

Total's integrated CCS pilot project takes place in the *Gave de Pau* river valley, in the land of *Béarn*, which is a part of the Pyrénées Atlantiques (64) administrative department of France. The Lacq natural gas field was discovered in 1951. It has been an important asset for France, even mythic, having provided up to one third of the domestic natural gas consumption. In the same time thousands of jobs were created, a new city (Mourenx) built for workers coming from everywhere in France and abroad, the next Pau (Capital of *Béarn*) population doubled, … and a strong local corporate and union culture strengthened durably. In the wake of changes brought about by technology, the Total's large Science and Technology Research Center Jean Feger developed a world recognized expertise, the UPPA (Pau and Pays de l'Adour University) developed its sciences department, and the industrial incubator Helioparc added a growing conglomerate of grey matter in Pau. Gas production peaked in 1982, then the flow started to decline about the year 2009 and the end of the field's economic life was early considered for strategic reflection and action from private and public actors in terms of continued progress of industrial activities, expertise and employment, in an extension of a several decades territorial but international development. In 2008, the Total's crucial decision to scale the gas production down to 300,000m^3 per day (compared to 2.5 million during only the 3 or 4 years to come) was already made, intending to enable Lacq chemical industries supply during 30 years again. In 2010, Total announced the consequent decision to stop the Lacq commercial gas production in 2013, putting an end to the great Béarn gas epoch. So it was time to overcome the rising concerns and get future priorities well before the date.

Eventually the depleted wells closure and reclamation plan will be effectively implemented in 2013. First wells of the closure campaign are stopped in September and the last ones at October 15th, while 11 wells of 46 will be maintained: 5 to feed local industries (Arkema, Sobegi, Toray…) notably via the Lacq chemical cluster LCC30 project, 5 placed in reserve, 1 to enable observations. Then the permanent wells plugging is planned in three stages: until mid 2014 for the Meillon field, at the end of 2015 for the Lacq field, and for 2016 as regards Rousse site near Jurançon after the CO2 injection

experimentation completion and then subject to a three years mandatory monitoring period.

Thus, after 50 years of natural gas bonanza, economic development plans for the valley are being reinvented, and several specialty chemicals production facilities, a bioethanol plant, a carbon fiber plant have been attracted. In this context where the economic future of the area is at stake, Total's announcement of a CCS project had a critical value to the community. The project fits with the firm's broader strategy to manage responsibly the plants shutdown, not only by supporting local small and medium enterprises through its subsidiary Total Développement Régional (Total DDR) but also by directly investing in training and R&D activities on the platform.

Lacq's natural gas is highly corrosive and dangerous, because it contains high quantities of Hydrogen Sulfide (H_2S) and carbon dioxide (CO_2). Yet the processing plant's safety record shows no fatal accident even though some inhabitants live very close. The risk is not only near the plant. The gas field extends dozens of kilometers beyond Lacq including underneath the city of Pau. Consequently there is a wide network of collection pipelines in the area. These may have a low impact for newly installed inhabitants, especially since some of them are no longer in operation, like in Rousse. But local citizens can have a memory or direct knowledge of the visual, air and noise pollutions that come from living in a valley rich in heavy industries. Local institutions have experience with managing dangerous gases and pipelines risks.

Since the beginning of oil and gas production in the area, various liquid streams have been re-injected in the geologic structures. Some of these liquids came from the underground fields themselves, some came from the processing plant. Injection of liquid waste from other chemical plants in the industrial park is presently authorized in the geologic formation known as "Crétacé 4000". This is an economic opportunity, as some chemical waste streams would require up to 600 €/t to be processed otherwise. That opportunity remains a significant asset for the region, as only 2% of the disposal capacity has been used up in 40 years. Following a recommendation by the French National Commission on Public Debates (CNDP), in 2001-2002 a “concertation” took place on whether to renew the Crétacé 4000 permit (Metras 2001). Even if all this was not tied to the CCS project technically, legally or administratively, it contributed to the local political culture of “concertation” about industrial risk and geological injection.

3 Local actors

When the project started, Total was the fifth largest publicly-traded integrated international oil and gas company. It operated in more than 130 countries and had 96,950 employees. In Lacq, more than 850 persons were directly working for Total Exploration Production France. In addition, Total main research center, dedicated to oil and gas exploration (Centre Scientifique Jean Feger), is located in Pau, with more than 2,000 employees (Total and subcontractors). Total is widely established in the Pyrénées-Atlantiques territory, and beyond its own employees, it supports a network of economic actors. The balance of local economic and political power clearly tilted towards the largest French multinational.

Locally, the Direction Régionale de la Recherche de l'Industrie et de l'Environnement in Aquitaine (DRIRE)[2] administration represents the interest of the State. DRIRE has the responsibility to investigate the injection permit request and prepare the decision by the Prefect, accounting for the national public good as well as the local communities and businesses. The DRIRE played a key role in organizing the public dialogue as discussed later.

The civil society directly engaged in or impacted by the Lacq' CCS project involves neighbors, local communities and their elected representatives. The project touches on 11 cities, making for a diverse panel of stakeholders and local interests, which can be summarized in two classes of communities:

- Communities close to the capture site benefit from industrial jobs at the Lacq plant. Their economic life directly comes from the operation of the natural gas field, and what to do when it is exhausted is a critical question for them. The direct implication of Total in the local society, education and associations is also a source of positive company reputation. As a measure of the corporate solidarity demonstrated by Total, Arquizan (2008) writes that over 30 years, Total DDR lend 140 millions euros to 500 starting companies in the department.
- The picture is different at the other end of the pipeline, at the storage site. The population of wine growers and farmers is less affected by the employment situation in the Lacq industrial area. They belong to a territory of about 10 km² (1,000 ha) officially recognized as producing "Vin du Jurançon", an exportable ancient (1936) Appellation d'Origine Controlée (AOC) quality label wine[3]. Patches of the Jurançon territory have started to become residential neighborhoods for the larger Pau city.

The position of elected representatives reflects this variety of interests. Mayors in the Lacq basin publicly took position for the project from the start, and made it known to other players at the first CLIS[4] meeting held on June 3, 2008. Mayors from the Jurançon hillsides did not take side during the project's "concertation", which occurred during the campaign period for municipal elections. After the March 2008 elections, the new Mayor of Jurançon took a stance by questioning Total's responsibility after its departure from the site. This remained his main negotiating position. The strength of the question was backed by the Mayor's position as a professional judge in Toulouse's administrative court, and the project's management recognized its seriousness.

Given the industrial history of the region, there do exist environmental NGOs watching over new project developments and implementation. At the start of the project, they had no defined position on CCS. Two existing associations jointly articulated an explicit argumentation opposing the project: Santé-Environnement-Bassin de Lacq and SEPANSO Béarn. In addition to the arguments against CCS as a technology expressed by France Nature Environnement (FNE), they argued that the project was mostly useless, expensive and risky for neighbors considering the population density and the local seismic activity (Mauhourat & Lambert-Habib 2008). In addition, a specific association named Coteaux de

2 This branch of the administration was renamed in January 2011 the Direction Régionale de l'Environnement et de l'Aménagement et du Logement (DREAL).
3 Jurançon's royal fame goes back to 1553, when infant Henry IV's lips were rubbed with garlic and wet with wine from the local region at his baptism...
4 Commission Locale d'Information et de Suivi, CLIS : local commission on information and follow-up.

Jurancon Environnement (CJE) was created by the citizens concerned by the injection project, in order to get informed and to mobilize themselves. CJE and SEPANSO actively participated in the official public discussions at a level where isolated citizens could not have attended directly.

The launch of the Lacq CCS project was announced on 8 February 2007, while CO2 injection was expected to begin at the end of 2008 and then last for two years. At the moment, no subsequent phases of the Lacq project had yet been decided, but the necessary long-term injection site monitoring. The first « Lacq Project Information Dossier », a key communication effected with the support of a consulting team (C&S Conseils) and issued by Total in October 2007[5], only shows a draft project timetable for the near future (Cf. illustration 2 below), with a view to carrying out the next mandatory Public Inquiry and injection starting.

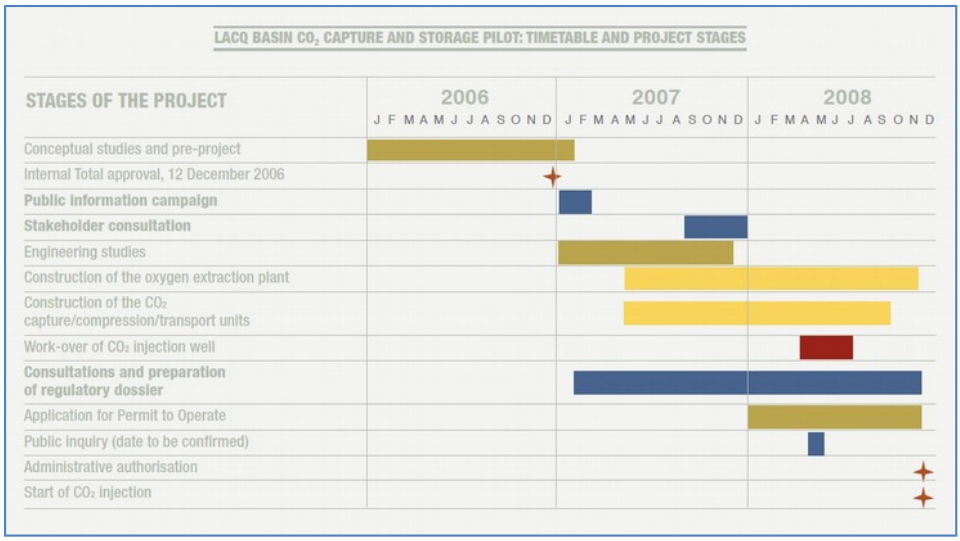


Illustration 2: Lacq CCS pilot project, draft timetable in 2007 October (Total[5])

A stakeholder analysis was conducted around the Lacq CCS project, independently from the consulting company hired by Total. This analysis was based on face-to-face interviews in the field conducted in the first semester of 2007, participation at discussion workshops and a bibliographic survey.

This describes the situation around September 2008, at the end of the public enquiry phase. Based on that work, Figure 1 locates the various stakeholders in the Influence / Support plane.

5 « *Summary Lacq Project Information Dossier*, Key information on the Lacq carbon capture and storage project », Total 2007, November. http://total.com/en/co2-total-synthese-gb
« Captage-stockage de CO_2 : synthèse du dossier de concertation du projet pilote de Lacq », Total octobre 2007. http://total.com/fr/lacq-synthese-dossier-concertation-2

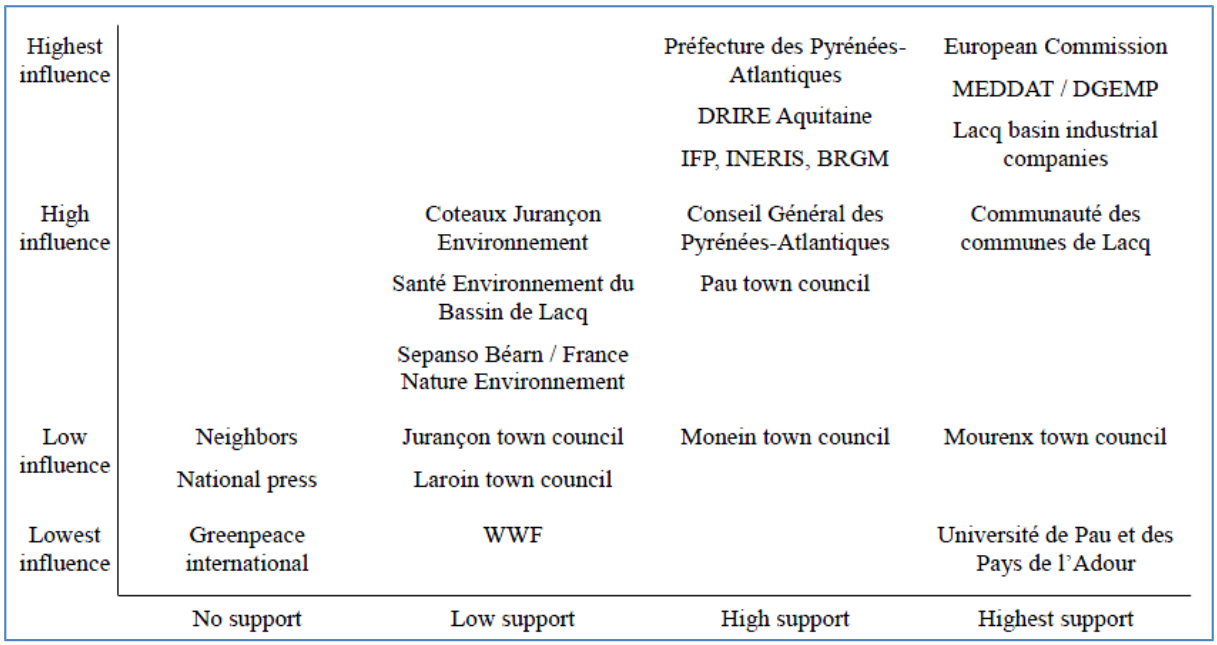


Figure 1: Influence-support mapping of the stakeholders for the Lacq CCS project.

The key players are those with both a high influence and a high degree of support for the project. They are located towards the upper right of the matrix. They appear to be the industry actors, institutions and experts. They are allied for the development of CCS in France, and expect that the success of the Lacq pilot will only reinforce this position. Medias, national Environmental NGOs and most but not all town councils had a minor role in the discussions. Ignorance about a new technology could explain why these players did not have a clear position and influence for the future of the industry. Overall, the top-left corner is empty. This shows that no opposition has been influential in the upstream phase of the implementation of pilot. The social context was favorable.

Nevertheless Total had also set up an independent Scientific Committee to advise the project team during all phases of the pilot. The Scientific Committee includes representatives of the French authorities and scientific experts not otherwise involved in the project. "At this stage, Total wishes to open a broader dialogue with all stakeholders: elected officials, citizens, economic players, social bodies and community groups. The aim is to foster an exchange of knowledge and information, to answer questions and allow all interested parties to air their views on the aims and methods of the project as well as the surveillance and control measures being taken. We at Total hope that this dialogue will prove useful to all stakeholders and help us with decisions that must be taken in the future."[6]

6 Jean-Michel GIRES**,** *Senior Vice President***,** *Sustainable Development and Environment – Total*; in "Lacq CO2 Capture and geological storage Pilot Project, Project information Dossier", Total 2007 October.
http://total.com/en/co2-lacq-total-project-information-dossier

4 The concertation process

4.1 What is a concertation?

Principles. Although the French institutional expression "concertation" implies multiple stakeholders, it does not specially mean they are opposed. This form of dialogue differs from others like negotiation, debate, consultation and mediation as follows:

- Contrary to negotiation, concertation does not aim to reach a decision collectively, only to prepare it[7]. When the administration engaged the local community in concertation, it did not bind its hands. Decision to authorize the project or not was the administration's one. The only promise was a true attention to the results of the concertation in the decision-making.
- However, in a concertation there is a specific decision to be made soon, as opposed to a debate which can happen at the ideas level. There had been no national debate on CCS in France when Total announced its project.
- Concertation is more than consultation. It cannot be limited to asking an opinion. The concertation had a consultation phase, as described below. But it extended beyond that, because concertation implies an exchange of arguments and considerations among stakeholders, to make explicit the different viewpoints and their articulation rather than to exaggerate their differences: concertation is a strengthening process for action[8], intending to preserve the common dimension of a project without leading to undue distortion, nor being in any way a co-decision procedure.
- Mediation is about facilitating a collective decision by using an independent third party. In contrast, a concertation process can be led by one of the stakeholders, or by a dependent third party. Here the concertation was initiated by Total, and then led by the administration.

Regulations applicable. Concertation has been increasingly viewed as an essential principle for public action as well as for local players where social acceptance of private projects is at stake and can only be addressed through dialogue with the stakeholders. Concertation is institutionally linked to the principle of participation of the parties involved in a project, as defined by international conventions, and specifically by the Aarhus Convention in 1998 (public access to information, public participation, public access to administrative or judicial proceedings), ratified by France[9]. According to the concertation charter of the French Ministry of Environment and Country Planning[10] in 1996, "Concertation provides value for representative democracy with more participatory democracy", and it aims to "enhance public involvement in the design of projects, including where laws and regulations already prescribe it". This is notably the case as regards the French public inquiry procedure (a legal device enabling mandatory public information and request for public comment for certain types of projects[11]) initiated by

7 Cf. ([1]) above.
8 Of course, parties having opposing views may not find "perfect" resolution…
9 Cf. French governmental website: Toutsurlenvironnement.fr, and Directive Inspire 2007/2/CE, 2007 March 14th (Infrastructure for Spatial Information in the European Community).
10 Ministère de l'Environnement et de l'Aménagement du Territoire (MATE).
11 This device is governed by the law of July 12, 1983. The section 236 of the law of July 12, 2010, has amended the section L123-1 of the Environmental Code as follows: "The purpose of the Public inquiry is to ensure public information and participation, as well as taking account of the third

the Prefect and implemented in the project affected municipalities, and conducted by an investigating commissioner who is designated by the President of the administrative Court. If the decision-making authority deviates from investigating commissioner advice – which it is not bound by – the investigating commissioner's advice with arguments may be used by the administrative Court having been seised of the case within two months. On 2005 March 1rst, the Environment Charter becomes a French Constitution Act which specifies the public participation principle in its section 7. More recently the French 2012 Dec. 27th Law has updated the conditions in which the public participation principle may and must be applied to the State authorities' decisions. As a general rule, a concertation may still be set up by various stakeholders even prior to the regulatory requirements implementation. In this respect it may already be observed that the Lacq CCS pilot project takes place during a period of evolving regulatory developments, following Grenelle I (2009 August 9th) and II (2010 July 12th) laws debates, and in anticipating of European regulations change and national transposition.

In practice, the added value of a concertation is provided by embedding it within the local context of a project, legally independent but subject to geographical, social, political, economical… influence or constraint on its social acceptability. The subject of concertation is not the negotiation of the project but the negotiation of the participatory process itself, having to involve efficiently and fairly all the stakeholders, including: elected representatives, citizens, administration, technical and legal experts, and various organized actors in civil society like NGOs and enterprises. The 1996 MATE Charter establishes a general framework and principles providing guidance for good practices: "The concertation implementation is driven by a political will. Thus it is the task of public authorities (elected representatives, administration) to ensure its implementation. If contracting authority is not a public authority, then it has to keep the competent authority informed of the project and to define in agreement with it the concertation modalities"[12] (Section 3). Furthermore "concertation is a process which continues to the actual completion of the project and even beyond if need be. It is advisable for partners to agree on a concertation path marked by stages and key times, each resulting in a progress report."[13] (Section 6): project context, project benefits, project implementation. "If the presence of a guarantor is proven appropriate, then he must be designated on a consensus basis as wide as possible. The concertation guarantor must be impartial and should not to take sides regarding the case substance."[14] (Section 7). And finally, concertation is funded by the project owner (Section 8), while the concertation

parties interests in the elaboration of decisions that may affect the environment" ("L'enquête publique a pour objet d'assurer l'information et la participation du public ainsi que la prise en compte des intérêts des tiers lors de l'élaboration des décisions susceptibles d'affecter l'environnement").

12 « La mise en œuvre de la concertation procède d'une volonté politique. Il incombe donc aux pouvoirs publics (élus, administrations) de veiller à sa mise en œuvre. Lorsque le maître d'ouvrage n'est pas une autorité publique, il lui faut alors tenir l'autorité compétente informée de son projet et définir avec celle-ci les modalités de la concertation (Article 3). » MATE 1996.

13 « La concertation est un processus qui se poursuit jusqu'à la réalisation effective du projet et même au-delà si nécessaire. Il est souhaitable que les partenaires de la concertation se mettent d'accord sur un cheminement, marqué par des étapes ou des temps forts, chacun donnant lieu à un rapport intermédiaire (article 6) » MATE 1996.

14 « Lorsque la présence d'un garant de la concertation se révèle opportune, sa désignation procède d'un consensus aussi large que possible. Le garant de la concertation est impartial et ne prend pas parti sur le fond du dossier (article 7). » MATE 1996.

assessment report has to be included in the public inquiry file if such an inquiry is prescribed.

The French public debate[15] aims to opinions and perceptions forming and maturing, and their change or sustainability assessing over time. Nevertheless concertation makes actors to take in consideration the stakeholders' goals and to ensure their compatibility within a project implementation, through a dialogue serviceable to the practical necessities of the project and its specific purpose: that is structured exchanges targeting a common interest.

The first step of setting up a concertation is to identify and review all stakeholders and to engage in individual interviews with potential participants, possibly represented by spokespeople they recognize, and to submit them an initial assessment. The most complete and reliable information must be provided to participants, and upon their request but also as early as possible, thus ensuring the exchanges in keeping with a goal of concertation.

4.2 Announcement, social characterization and concertation (2007)

Figure 2 below shows the general project's timeline and its main events as reported in the regional press. The definitive investment decision was set at the end of 2006, and the first press release occurred on February 8th, 2007 (Total 2007b).

Total's outreach activities, comprehensively reported on their website (Total 2008), were voluntary and started well in advance of the administrative process (Cf. illustration 1). C&S Conseils, a specialized communication consulting company from Paris, helped to study the social context, define the methods, conduct the concertation and write the associated materials. A public information meeting held at Jurançon in March 2007 closely followed the initial announcement. It was held with neighbors of the Rousse future injection site. Globally, there were no negative feelings at this meeting. The discussions were rather questions about the possible consequences, noise or visual impacts, land zoning change and financial compensations for the city.

A social characterization study was performed next to help organizing the concertation. Between June and September 2007, C&S Conseils conducted about forty interviews with local and regional actors: elected representatives including all the mayors of the cities crossed by the pipeline, administrations, associations, businesses; and with the members of the project's scientific follow-up committee. The study led to the concertation itself that included:

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15 The law 95-101 of February 2, 1995, "Strengthening the Environment Protection", creates a National Commission for the Public Debate (CNDP). The CNDP is responsible for organizing public participation in the development of large-scale, publicly or privately initiated projects or facilities of national interest, since they are strong socioeconomic stakes or have significant impacts on the environment or country planning (Here the country planning represents public policies undertaken for a balanced development of regions or for a spatial organization in accordance with a guiding vision). The CNDP becomes later an independent public authority (AAI, Autorité Administrative Indépendante) under the law of February 27, 2002, which also can define the conditions by reference to which public participation is a matter whether of a Public Debate or of a concertation, at the discretion of the National Commission.

- Commitment to a "Charte de la concertation" (Total 2007a) in which the company states the transparency guidelines according to which it promises to conduct the concertation. A guiding principle was that "All participants to public dialog do not take part in the final decision but all participants in the decision making take part in the public dialogue."
- Publication of a 52 pages brochure (C&S Conseils 2007) and its 8 pages synthesis. The documents are organized around four topics: climate change; the CCS technology; the goals and characteristics of the pilot project; and the impacts and conditions of implementation.
- A section of about 10 pages on climate change, CCS and the project on Total.com web, and an exhibit on the project displayed at meeting places and at the Pau airport.
- Oral presentations and Questions/Answers sessions at three public meetings organized in the town-halls of Jurançon, Pau and Mourenx. A total audience of about 300 participants attended the meetings, and each lasted about two and a half hours. Talks by Total representatives were complemented and discussed by national experts from outside the project.

Meeting summaries were published on Total's website (Total 2008). Discussions with the public about local effects were related to security, land value, image risks for other activities like wine growing and visual impact on the site. Discussions on regional effects were centered on economic attractiveness, industrial development, jobs and taxes. General discussions on CCS examined its costs, scale, additional energy needs, regulation, public subsidies, long term responsibility and risk control.

According to (Total 2008) the outcome of the concertation was first a clarification with respect to the agreements and disagreements that arose during it. All participants agreed that: climate change is an urgent issue; increasing energy conservation, efficiency and renewables is more important than CCS; a governance open to civil society is a goal to reach; the project contributes to the economic renewal of the area; and security and mastering the risks is an absolute priority. There were two points of dissent: the potential of CCS technology to mitigate climate change by reducing Greenhouse Gases emissions; whether CCS should be regulated under the Mining Code or the Code of the Environment, a point linked with the question of the legal status of CO_2 (is it a waste or not?).

There were several substantive outcomes of the concertation:

- An information day on climate change and mitigation options was decided and held on October 2nd, 2008 in Pau's historical congress center (Penot 2008);
- It was agreed to continue the dialogue by setting up a local commission on information and follow-up (Commission Locale d'Information et de Suivi, CLIS);
- Total promised they "will help local projects related to climate change mitigation (provided they are supported by the city)", and that discussions on taxes could be opened;
- After the concertation the project's neighbors formed an association: Coteaux de Jurançon Environment (CJE) officially registered on January 16th, 2008;
- The technical plan was amended to decrease the visual impact and the noise. It was decided to locate the compressor at the injection site inside a shelter.

4.3 Formal dialogue and authorization (2008-2009)

In France, large industrial projects have traditionally been justified by public interest and technical progress with the State having the ultimate authority and caring for the national interest. Today, this centralized conception has been counterbalanced by the relocation of a number of State competences to territorial administration and local communities (decentralization, under the State authority in the last resort). Therefore, regional and local authorities, as well as organizations from the civil society, now demand to be more systematically involved in decision-making. The opening for a more inclusive public decision process has been formalized in a stream of legal rules started in the mid-seventies with the environmental impact assessment law in 1976 and reviewed in 2002 in the context of the Aarhus international convention adoption as a law of the State.

In 2008 April, Total filed the administrative authorization request (Demande d'Autorisation d'Exploiter) with the Pyrénées Atlantiques (64) departmental Prefecture, in charge of examining the permit request under the DREAL regional authority. It was the first CCS project to be processed in France, with no specific regulatory oversight. Thus, it could make a significant contribution to a CCS regulation in France and anticipate a transposition from European directive since the experimentation was an opportunity to define a framework and thresholds based on real measurements, and went forward through a replicable acceptability process. During the spring of 2008, Total pursued the communication and dialog meetings with mayors and neighbors, adding a workshop in Jurançon council in July, and an open site visit complemented with an information letter to neighbors in December, and yet dedicating a phone line for inquiries, and publishing a quarterly newsletter.

Formal discussions on the project were conducted mostly at the CLIS ad-hoc commission (Commission Locale d'Information et de Suivi). The CLIS was officially enacted on April 30th, 2008 by the Pyrénées Atlantiques Prefect. In the absence of specific CCS regulation, the CLIS was created using the legal model of commissions established to follow-up landfills and the Crétacé 4000 CLIS. It includes the various components of the social body: 1 State representative; 9 locally elected officials; 2 delegates from workers' unions; 4 from associations; 5 experts and 4 Total employees. The CLIS was established to discuss the authorization request and sit at least for the entire project's life. It met 8 times between June 2008 and December 2009, about twice a year.

The CLIS hears formal reports on the project from Total and experts like the BRGM (Bureau de Recherches Géologiques et Minières), the French geological survey. Its website (Commission Locale d'Information et de Suivi 2010), which was hosted on the Prefecture's official website, provides open access to the discussions reports and a significant range of supporting material. The CLIS visited the installations twice, and at the first time discussed on site with near residents. Ultimately it made a press release about the project, but did not conduct a formal public meeting at the storage site. The CLIS also asked for and heard a report on the history of accidents with natural gas in the area, reviewed the monitoring plan, security exercises, a local perception survey. It reviewed and improved the authorization document draft.

Associations opposing the project, CJE and SEPANSO Béarn (a federation affiliated to France Nature Environment), participated actively in the CLIS meetings. At the outset, CJE's moderate members were willing to discuss with Total. The initial near 120 members

were from diverse profiles, and included both rural people established a long time ago in Jurançon and newly arrived residents. At the end of the summer 2008, the association was not ready to organize big demonstrations, but could mobilize reliably a more radical fraction against the project, for example protesting in front of the injection site during the CLIS visit.

- CJE's scientific advisor summarized the sustained CJE's objections in a column published in a leading national newspaper (Pépin 2009). Total was depicted as a big corporation that cannot be trusted to develop CCS acceptably, and its concertation efforts viewed as mostly marketing or communication. The risk analysis was criticized for not considering massive release scenarios (even "not possible" according to IFPEN who advised Total for the project), and the security exercise was criticized for not directly involving neighbors.
- Opponents to the project questioned the independence of the BRGM, and CJE argued that the project could have been reviewed by an inter-disciplinary panel including foreign experts. BRGM replied with four arguments: (1) BRGM, as the public reference establishment for geosciences is legitimate to examine the permit request: providing technical expertise to the administration is one of the core missions it has been created for; (2) the assessment was only about aspects in which the BRGM is competent, and the expertise conducted by a newly created unit of 13 specialists of security and impacts of CO_2 storage (BRGM 2009); (3) this unit's personnel was not involved in site selection and characterization studies, and BRGM's researches currently in partnership with Total at the Rousse site are disjoint from the injection permit request; (4) it would have been difficult to find CCS experts that were never involved in a joint research project with Total.
- SEPANSO raised the issue that disagreements about the share of CCS in climate policies persist. They were not accepted as relevant by the CLIS, as they pertain to a national debate on energy policy choices.
- The opponents requested the release of more technical reports. Total argued commercial reasons to keep some documents non-public, but invited the experts to consult them on their premises. The CLIS president noted that the existing legal recourse against the permit may hinder transparency.

An administrative public enquiry (carried out by the Préfecture des Pyrénées Atlantiques) was held from July 21 to September 22, 2008 in 4 cities. Participation was very weak in Lacq, weak in towns along the pipeline, 90% of the comments were received in Jurançon. CJE criticized this administrative public enquiry on the grounds that it was conducted during the summer vacations, and that the final advice was positive while 56 out of the 60 recorded comments were negative. The surveyors indeed assessed that the replies by the project-holder to the objections raised by the citizens were satisfying. In response to critics, it was stated that the survey is not a vote, and in fact 60 self-selected voices, that is less than 1% of the population, are not representative.

A final technical problem had to be examined before injection: signals from the three seismic sensors at the bottom of the well were lost, probably because of a broken optical fiber. Total proposed to replace the sensors, except that would delay the start of injection by 9 months. Without the sensors at the bottom of the well, the seismic monitoring network would comprise only the 7 sub-surface sensors, buried 200 meters deep. The permit specified that it was the operator's responsibility to determine the necessary number of sensors. Total's case that the incomplete network would be enough to monitor

the site integrity was reviewed positively by two independent experts' teams, so the Prefect did not cancel the authorization.

Municipal elections were held in March 2008. The project was not a stake of the campaign debates, as it was a politically risky topic with little to gain. The newly elected mayor in Jurançon initially took a stance against the project, backed by a unanimous vote of the municipal council. The building permit for works needed at the injection site was not granted at first presentation: it had to be revised to be accepted.

Besides the Jurançon Mayor and Lacq's cities community (Communauté des Communes de Lacq), other local elected leaders were mostly absent from the negotiations. Starting from that tense relationship, after several discussion meetings and site visits, the Jurançon Mayor's position evolved and became favorable to the project. The move dissatisfied a fraction of the population. A partnership agreement was signed in April 2009. The agreement was described by Total[16] as follows:

"Total has signed multiple patronage and sponsorship agreements in the Aquitaine region for decades, and Total Exploration Production France (TEPF) has a 50 years history on these oil production sites. This new storage project was hence framed in the broader context seeing the end of TEPF activities in Lacq and the satellite fields by the end of 2013, due to gas reserve depletion. This decline of an historical activity important for the region is subject to a policy of support and assistance in regional re-industrialization. It is also notable that the CO_2 injection required stopping the natural gas production from the well, which was modest but nevertheless represented a direct income for the town.

Within this overall framework and without any mention of specific Rousse pilot, a sponsorship agreement in the amount of € 1.5 million was signed with the municipality of Jurançon to assist in the implementation of community projects especially in the field of sustainable energy (solar panels). More recently, the press echoed a sponsorship agreement of TEPF for the Region (an amount of €5 million was mentioned). This agreement is linked to the reduced activity of TEPF due to the end of the gas exploitation, and its connection with the storage project is all the more tenuous that the project has been underway since May 2009."

The sponsorship agreement was not all new money specific to the new storage project, but rather a consolidated reappraisal of already granted help.

Eventually the capture, transport and storage project was permitted on May 13, 2009, that is 27 months after the initial press conference. There are no injection taxes. First injection happened on 8 January 2010, and on 11 January 2010, Valérie Letard, State secretary in charge of green technologies and climate negotiations, with Christophe de Margerie, Total CEO, formally inaugurated the CCS research pilot.

16 De Marliave, personal communication, 6/10/2010, (our translation)



Illustration 3: Inauguration of the CO2 capture and storage facility in Lacq (France), January 11 2010: Valérie Letard, Secretary of State for Green Technologies, and Christophe de Margerie, Chief Executive Officer of the Group Total :

« Our added value lies in our ability to develop increasingly complex resources from every point of view: technical innovation, environmental impact, social acceptability, political implications, etc. »

Photography, caption, and quotation from Shareholders newsletter, 32, Spring 2010, Total.

5 Survey of the Jurançon population area around the injection site (2008)

A questionnaire survey was designed and sent to the most sensitive fraction of the population of the city of Jurançon, living near the planned CO_2 injection area. The area is a mix of a rural mainly vineyard area and a low density residential one with principally wealthy families and a significant proportion of retired people.

The survey was sent nominative, with a stamped return envelope, and reached 1,206 mailboxes concentrated in the area of the pilot project (roughly one third of the mailboxes of more than 7,000 inhabitants in the city).

The survey was sent out in October 2008, before the authorization but after the formal public dialogue so that most inhabitants should have been aware of the project either through the 2007 concertation or through the public inquiry set up in the summer 2008.

The response ratio was 14%, which is satisfying compared to the 8 or 10% expected: 167 responses came back, 153 being completed, 14 with a clear will not to respond and probably from the most radical part of CJE seeing a survey as a way to weaken its position.

Unsurprisingly retired people represented a large share of the respondents, 42%, while 28% were employed in private companies, 12% in a public organization, 12% were independent workers, and 3% unemployed. This response ratio is good also considering

the survey length with 89 questions, organized in 5 parts: general questions about the context, information about the CCS pilot, the concertation organized by Total, the formal dialogue (public enquiry and CLIS) and social acceptance.

5.1 Context

A first set of questions about the general and local context of the CCS pilot was meant to evaluate the respondents' sensibility to global environmental and social issues.

To the question "Among the environmental issues, which do you feel to be the more worrisome? (two possible answers)", climate change came first (48%), before water pollution (29%), air pollution (26%), forest destruction (21%), overexploitation of agricultural resources (15%), soil contamination (13%), ozone layer reduction (10%), GMO (9%), and noise (5%).

At the next questions, 82% completely agreed or agreed with the idea that Humankind is completely responsible for the climate change, and 91% completely agreed or agreed that it is urgent to act against climate change. When asked the question of what to do, the respondents massively answer renewable energies and reduction of energy consumption.

Among the CO_2 storage techniques, the respondents choose the biological solutions first (storing carbon in forests), before the geological storage. At this time the result may reflect a common vision of a biological solution by which the CO_2 is "destroyed", as opposed to the vision of a geological disposal where CO_2 is merely stored with a risk of leakage.

After the series of questions on global issues, the survey goes into questions on local issues. Answers differ significantly from those to global questions. When asked which of the local problems is the most worrisome, climate change comes only in seventh position after poverty and exclusion, environmental degradation, globalization, unemployment, technological risks and safety/terrorism.

5.2 Information about the CCS pilot

Although information has been spread through newspapers, meetings organized by Total, and the formal public dialogue at its ending, there were still 7% of the respondents saying they had no information. About 40% indicated that the first they got informed was in 2007 (concertation organized by TOTAL), another 9 % at the beginning of 2008, 28% in the summer of 2008 (during the public inquiry) and 16% in fall 2008 (at the time of the survey).

When asked about how they were informed about the project, 41% of respondents cited the local press and other media. Total's newsletter sent by mail and information meetings were the information source for 27% of the respondents. The rest got mainly their information by word of mouth (24%). Only 10% of respondents declared they had accessed the Total website or other sites. Yet 55% of the respondents declared that the information they have on the pilot is not sufficient.

When asked to indicate the interesting aspects of the pilot (several answers permitted), the respondents cited very first the scientific interest (65 responses). Less cited were the economical development (29 responses), employment (27 responses), and industrial attractiveness (23 responses).

5.3 The concertation organized by TOTAL

40% of the respondents knew that Total organized concertation meetings. This information came to them mainly by the press (57% of respondents). Only 13% of the respondents were present at those meetings and even less (7%) had knowledge of the proceedings or outcome of the meetings.

When asked "which information source can provide you with additional information on the project" (several answers permitted), Scientists came first again (60 answers) and national environmental associations second (35). The less often answered information sources were Total, the local politicians and the local associations, with about 20 citations each.

5.4 Formal public dialogue (organized by the Prefect)

70% of the respondents said that a public inquiry was important to take into account the neighbors' interest in the project. But only 9% said they actually participated in the public inquiry. 33% of the respondents declared that they had heard about the existence of the Local Commission on Information and Follow-up (Commission Locale d'Information et de Suivi, CLIS), and only 10% had been informed of the results of its first meetings.

5.5 Social acceptance

The injection of the CO_2 to be stored is re-using an old gas extraction well. People in Jurançon are used to see gas wells and gas pipe manifolds which have been operating for more than 40 years in their landscape. When asked if they felt that Total had a good risk management on those wells and pipes: 40% responded yes, 18% no and 40% did not know. 31% declared having experienced some nuisance from these installations, while 69% had no nuisance.

Asked if there was still a need to negotiate on the pilot's implementation, a majority of respondents (51%) were affirmative. A small minority (15%) felt there was no need for additional negotiation, and one third had no opinion. It is to be noted that these answers came after the public consultation.

Asked about who should participate in the negotiations on the pilot's implementation, respondents covered a wide range of stakeholders as follows: Neighbors and their associations (35%), local elected representatives (25%), environmental associations (22%), local services of the State (13%), and other interested industrials (5%).

Finally, the respondents were asked under which conditions they could subscribe to the project (several answers permitted). Environmental protection guarantees came first (72 answers), along with safety guarantees (68 answers) and guarantees on the long term future of the injection site (51 answers). A few responses mentioned respect of the

cultural heritage (21 answers), jobs creation (20 answers), and financial compensation (15 answers). Five respondents answered that the existing conditions were enough, as opposed to 32 who indicated that they would not accept the pilot under any condition.

Results of the questionnaire confirm the wide mental difference between the local and the general scales. Locally, social issues and local environmental issues are felt more important than climate change, probably seen as too far from immediate concerns of people.

Results about information ways shows that it arrives mostly through mass media (the press) and conversations. Attitudes are weakly proactive in the search of information. Results also suggest that people have well contrasted opinions on the quality of their information sources. The low use of the available information could be due in part to the mistrust in information provided by Total.

Having started at the beginning of 2008 before the public inquiry, the CLIS had met several times before the opinion survey; its proceedings were available on the web. Answers about the CLIS and about the public enquiry corroborate the idea that, except for radical opponents, people have low motivation for direct participation in the formal public dialogue organized by the law. This result fits with the general conclusion of (Fourniau 2011) that the French model of public debate is waiting for a rebound.

Since most people do not engage themselves in the concertation, to them the cost of negotiation is very small. This may explain why the demand is so high. Even after the significant diligence of the industry and administration, most respondents asked for more discussions regarding environment, safety and long term follow-up. This may point at the relevance of an enduring negotiation commission, the CLIS, as opposed to the one-shot public enquiry.

Christophe de Margerie, Total CEO, addressing the journalists on the 2010 January 11th inauguration day : *« Some people will always have doubts about CO_2 storage in the subsurface technology » (...) « in the case of Jurançon, we have convinced more than of the majority of people. That does not mean we can let go and stop informing »*[17] In « CO_2 into the subsoil: that's gone for real! », SudOuest, 12 January 2010.

One year later: *« Climate : putting an end to burying our heads in the sand »*



« The Pau climate defense association Coclipau and Coteaux de Jurançon Environnement were calling, Saturday in the morning, to meet in Clémenceau Place. A meeting aiming to denounce the current experimentation of CO2 storage under Chapelle de Rousse, by Total, and the hazards one may fear fort he population. In the light of Japanese events showing that man cannot tame nature, demonstrators were calling to stop burying our heads in the sand to not see the danger. To this end, they had made an ostrich from recycling materials. »[18] Photo

17 Authors' translation from : *« Il y aura toujours des gens qui auront des doutes sur la technologie du stockage du CO2 dans le sous-sol » (...) « Dans le cas de Jurançon, nous avons convaincu plus qu'une majorité de personnes. Cela ne veut pas dire qu'il faut lâcher pour autant, et arrêter d'informer ».* SudOuest, « Le C02 dans le sous-sol : c'est parti ! », 12 janvier 2010.

	Guillaume Bonnaud, in SudOuest, 2011, March 14th, Pau.

Illustration 4: in Sud Ouest journal, 2010 January 12th and 2011 March 14th (Extracts).

6 The social impact, as read from the press (2005-2012)

As the survey indicated that information comes to citizen mostly through the local press, the main daily newspapers were analyzed over 2005-2012 for articles referring to the Lacq CCS experimentation. This gives us a vision of the social impact of the experiment.

At the national press level, influential general news titles *Le Monde*, *Liberation* and *Le Figaro*, and influential business news titles *La Tribune* and *Les Echos* mention the Lacq CCS project only sporadically, always in the context of the more general question of CCS. We conclude that this local project never became an object of public debate at a national level.

At the regional level of Aquitaine, the dominant newspaper is *SudOuest.* This daily journal, founded in 1944, is France's second largest regional newspaper in 2010 with more a million readers (Audipresse 2010, EPIQ survey). Over the period going from 2005 to 2012, 124 articles mentioning the Lacq CCS project can be found. The news sample includes a dozen duplicates (generally not published on the same day), since the journal shares editorial content in its 21 local paper editions and its website. In comparison with other local or regional newspapers, SudOuest is the single French daily newspaper having reported steadily and specifically about the Lacq CCS implementation. Figure 2 shows the time distribution of these articles.

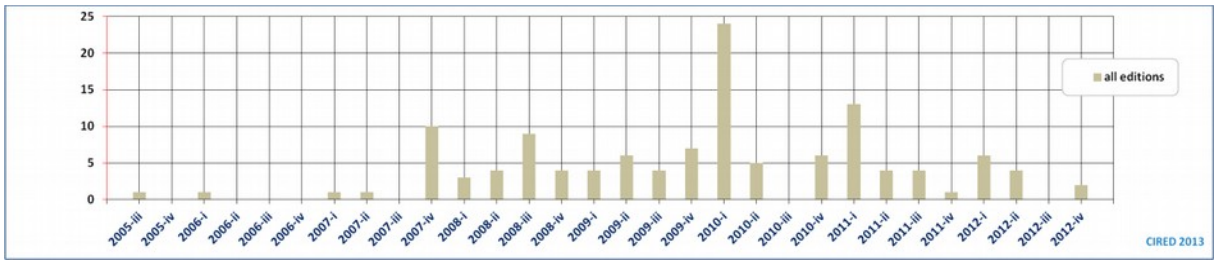


Figure 2: Sud Ouest quarterly number of articles relating to the Lacq CCS pilot.

The analysis that was conducted relies on encoding each article along two dimensions. The incremental news value to formal stages of a gradual social and political decision-making process (project, stances, debates, decisions) is first assessed. These stages are

18 *Authors' translation from : « L'association paloise pour la défense du climat Coclipau et Coteaux de Jurançon Environnement appelaient au rassemblement, samedi matin, place Clemenceau. Un rassemblement conçu pour dénoncer l'expérimentation en cours de stockage du CO2 sous la Chapelle de Rousse, par Total, et les risques qu'on peut craindre pour la population. À la lumière de l'actualité nippone qui montre que l'homme ne peut dompter la nature, les manifestants appelaient à cesser la politique de l'autruche, qui consiste à plonger la tête dans le sable pour ne pas voir le danger. Ils avaient, pour cela, réalisé une autruche à partir de matériaux de recyclage. »* SudOuest, 14 mars 2011, Pau.

not irreversible steps in a waterfall process as deliberative processes can iterate back and forth as needed. Then articles are distinguished according to their territorial circulation, with four types of editorial localization: (1) publishing only in the local editions for Lacq, Rousse and Pau, that is in “Béarn or Béarn & Soule local editions”; (2) in “other local editions”; (3) in newspaper pages common to all editions, that is in “general editions”; or yet (4) on the newspaper “website only” (not printed). Figure 3 shows the distribution of articles over time along these two dimensions.

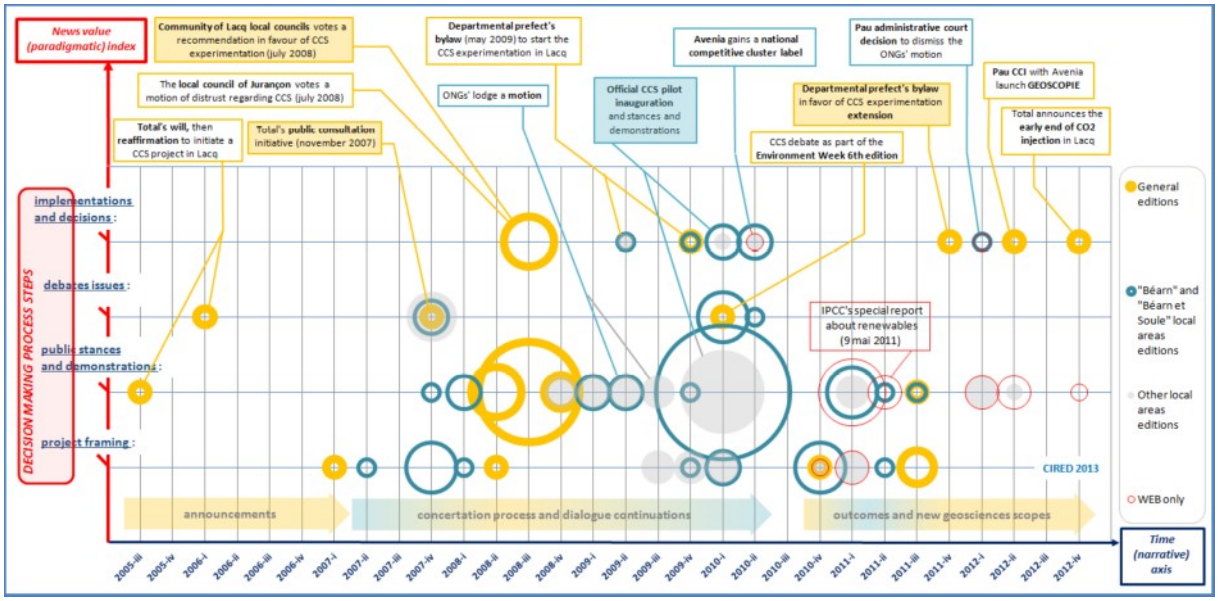


Figure 3: Sud Ouest quarterly numbers of articles (circle diameter on a 1-8 scale) relating to the Lacq CCS pilot, according to their content and edition area.

The project implementation had four crucial moments. These correspond to the local maxima in Figure 2 when the project was discussed relatively more in the press, and leading information coming to “upper” news value levels. They are:

- The concertation organized by Total in the final quarter of 2007.
- The positive vote of the local Lacq's Cities Community Council (Communauté de Communes de Lacq) on July 3rd, 2008. A few days later, the city council of Jurançon voted a motion of distrust (despite being formally represented at the Lacq's cities Community Council).
- The official pilot inauguration in January 2010. Surprisingly the inauguration was treated as news of local interest, as opposed to the November concertation procedure, or the July 2008 votes, which had been reported in the general editions. It was not only due to a reported turbulent local context, but also to the high R&D stakes of the event at first local rather than regional. Valérie Letard, the State Secretary for Green Technologies and Climate negotiations attending the inauguration, said: “before long, Lacq will be a recognized site all over the world and will undoubtedly gain followers…”[19] A first achievement came as Lacq CCS pilot stimulated the creation of a specialized geosciences cluster Total belongs to, Avenia,

19 “D’ici quelque temps, Lacq sera un site reconnu dans le monde entier et fera sans doute école.” SudOuest, 2010 January 10th, *Le C02 dans le sous-sol : c’est parti !*

sited in Pau and being granted at mid 2010 a governmental “National competitive cluster” label (“Pôle national de compétitivité”). This local success was published again as a highly important local news.

- Debates in 2011 about whether the injection permit, initially given for two years, should be extended remained a local importance news item until the administration's positive answer (depending on the DREAL) on November 14, 2011, again published in SudOuest general edition. The extension permitted injection up to July 8, 2013. It restricted the total quantity of CO_2 injected to 90,000 t in agreement with norms defined by the newly published European directive on CCS research projects, which did not threaten the project's technical or scientific integrity.

Overall, the chart shows that the project existed as a news topic in the regional press between 2007 and 2011. A public debate existed before and after the public enquiry period, as shown at the overabundant “stances and demonstrations” news value level. But a progressive shift in the press interest should be noted: while the debate about the after-gas and the industrial future of the area remains active, the debate about the local consequences of the CCS project was sidelined progressively since mid 2010.

The National label “pôle de compétitivité” gained by Avenia in 2010 changed the public debate to a new emerging economic development possibility for Pau area, around geosciences, with a regional and national outreach. It is suggested at the upper “implementations and decisions” level of the chart, showing successive new critical events: Avenia granted a national label, in Béarn edition in 2010, then Avenia launching Geoscopie[20], a platform of strategic and economic intelligence relating to Geosciences, grew out of a partnership with the Chambers of Commerce and Industry (CCI) of Pau, and Aquitaine at a regional level, in general edition in 2012. From Sud-Ouest journal, this was also a change in addressing these renewed readership’s scientific, economical, social, industrial and political interests at a widened regional level. Such an epilogue fits well the 2008 survey results about what local respondents cited as “interesting aspects” of the Lacq CCS pilot experimentation: that is not only their reactions to a nonstandard project but their expectations relating to its implementation, and in other words the expected ways of its social and political normalization as for any climate option.



Chances of Aquitaine are below ground, too. SudOuest, 2010 May 25th.
Geothermy, one of Avenia leads to work on. Photo Pascal Bats.
[Extract] ***“A national label has just been granted to the competitive cluster Avenia.***
In about forty years, fossil fuels, like oil, will have had their times. Other energy sources will have to take over. Aquitaine has got a card to play in this field.
It is in that perspective that the Avenia competitive cluster was created. The cluster regroups 130 regional firms, including giants like Total, but also research units, universities and professional training organizations. Activities that represent 6,000 direct jobs and 25,000 indirect jobs (…)”[21]

20 http://www.pole-avenia.com/index.php/nos-services/geoscopie
http://www.geoscopie.fr/

Pau University chooses the geosciences card. La République des Pyrénées, 2010 November 19th.
Geosciences were the focus of the forum held yesterday at Pau University. ©Photo Olivier Clavé.
[Extract:] "Geosciences industry is a major sector in Béarn, amounting to 2 billion Euros spin-offs per year, more than 4,000 direct jobs, and 23,000 created jobs.
The will of the University is also to mark its specificity in the higher education field (...) In addition to Master students, ENSGTI and EISTI engineering schools had come and taken part in the event. "Geosciences are trans-disciplinary subjects. They gather physics, chemistry as well as mathematics", emphasized Jacques Mercadier the ENSGTI Director (...)"[22]



Illustration 5: in Sud Ouest journal, 2010 May 25th, and La République des Pyrénées, 2010 November 19th (Extracts)

However, a comprehensive approach must differentiate between reconstituting a thread of press contents *ex post*, so retrospectively outlining variations in press edition during the period (Cf. Figure 2), and the follow-up press reporting as it appears immediately from the daily editorial practice, forward looking but still uncertain of the changing course of events. The value of news is associated with their new or updated information content, but what actually underpins their relevance to readers (newsworthiness) stems from a *selection* from among massive and proliferating flows of news that journalists must process before their daily editorial meeting: the news selectivity has to anticipate and to think the addressed readership's concerns, and thus represents their political news value the same day, of which the reflexive[23] counterpart is the readership's willingness to pay for news. We may reasonably infer such a speculative use of readership's concerns is

21 Authors' translation from French : « ***Un label national vient d'être accordé au pôle de compétitivité Avenia.*** *D'ici une quarantaine d'années, les énergies fossiles, comme le pétrole, auront vécu. D'autres énergies devront prendre le relais. L'Aquitaine a une carte à jouer dans ce domaine. C'est dans cette perspective qu'a été créé le pôle de compétitivité Avenia. Celui-ci regroupe 130 entreprises implantées dans la région, parmi lesquels des géants comme Total, mais aussi des unités de recherches, des universités et des organismes de formation professionnelle. Des activités qui représentent 6 000 emplois directs et 25 000 emplois indirects. (...)* » in SudOuest, 25 mai 2010, « Les chances de l'Aquitaine sont aussi sous terre », J.J.N.
La géothermie, l'une des pistes de travail d'Avenia. Photo Pascal BATS
22 Authors' translation from French : « *(...) L'industrie des géosciences est un secteur majeur en Béarn, avec deux milliards de retombées économiques par an, plus de 4000 emplois directs, et 23 000 emplois induits. La volonté de l'université est aussi de marquer sa spécificité dans le milieu universitaire (...) Outre les étudiants en master, les écoles d'ingénieurs ENSGTI et EISTI étaient venus prendre part à l'événement. « Les géosciences sont des matières transdisciplinaires. Elles réunissent la physique, la chimie mais également les mathématiques », souligne Jacques Mercadier directeur de l'ENSGTI (...)* » in La République des Pyrénées, 19 novembre 2010,
« L'université de Pau joue la carte des géosciences. » Les géosciences étaient au cœur du forum organisé hier à l'Université de Pau. © Photo Oliver Clavé.
23 Reflexivity refers to the importance of eliciting relevant facts prior envisioning what is considered to be consequences.

editorially to take charge of the current public debate *reflexivity*, so that we have to restitute it *discretely and sequentially* (Cf. Figure 3).

Insofar as the general "non free" daily press has the function to support this double upgrading of information (updating and current reflexivity) to address a maximum readership, such an upgrading tends to overlap the most prospective and sharable contents rising as (fairly typical in political sciences) "*political generality*" (that is not a consensus!). French regional press is historically closer its territorial markets than national press, and jealously aware of its audience special needs *with a community dimension* fostering a more intensive reflexivity and the rising of "political generalities".

The journal SudOuest characteristically reported news about the Lacq CCS pilot in a local dimension (CCS concertation, CLIS, interviews with stakeholders, Lacq basin industrial context, social and political implications), as well as in a regional dimension more clearly political through territorial institutions hierarchical interplays (prefectural bylaws dependent on DREAL assessments). But it has also reported news about induced prospective issues (safety or environmental hazards, codes and laws), policy challenges (Climate change and carbon price, renewable energy, sustainable employment), and stakeholders' strategies related to retroactions between scientific and technological research and sustainable development or energy transition (technical or scientific expertise and meetings, ONG stances, Pau University, Total group and industrial clusters, elected representatives engagements and visions), thus systematically pointing regional strengths and advantages in a common context that is the basic community "generality". Through an editorial policy combining local and general editions to address a maximal audience, the regional journal SudOuest demonstrates an ability to discover and stimulate latent reflexive relays within the general public debate and get a sense of territorial capabilities to the general public within the region. Facing with social acceptability issues rising in local debates, regional news demonstrate responsiveness opportunities partially offsetting the limited "formal" participation[24] in local debates by widening the scope and redirecting most of the missing public attention towards the less focusing regional stakes reflexivity. Conversely local stakes lacking generality at a local level may be framed within coherent dynamics and issues at a regional level. This was especially the case as regards the CCS experimentation shifting from the Lacq pilot acceptability and project operating topics, which alternated between Béarn local edition and the general edition of SudOuest (Cf. Figure 3, until 2010), to a derived geosciences & *CCS* topic first in Béarn local edition only (Avenia, 2010), then finally in general edition (Geoscopie, 2012); but the latter topic – simultaneously as a geosciences & *deep geothermy* topic, again involving Avenia based in Pau (Béarn) –, alternated from 2010 on between other than Béarn local editions and general edition (still addressing Béarn readership as well), in this way providing a second thread of news addressing local and general readerships with additional concerns, no more only the CCS, but geothermal power (graphically not represented in Figure 3). Since 2010, the political generality, sustaining the same development paradigm, has moved from CCS to geosciences at large. It should be noted that a geosciences supply existed earlier in Aquitaine, a region

24 The "formal participation" motivates mainly the stakeholders, and among them (or formally represented), the potential opponents of a specific project and people anxious to listen to the arguments put forward and feedbacks provided in response. All of them give support to the formal participation process itself for transparency, and in some cases wish to ensure the largest audience from media. It means a participation process may not get or provide the whole potential audience, even if publicization is regulated (as for public inquiries).

with numerous winegrowing and geothermal areas, so ready to welcome new developments and active centers (Cf. Illustration 5).

Nevertheless such a process – media upgrading of current reflexivity accompanied by a political generality rising – is subject to conditions of congruence and can be achieved only if an audience potential can be attracted. If so, a question then arises: does the media coverage impair or undermine the local public participation, or rather the opposite, does it enhance a local public debate by raising public awareness of the debate issues and adding to context by addressing a wider audience? The initial concertation process already gave evidence that the public debate challenge is not at first quantitative, but one of qualitative dialogue and of legitimacy of issues and results: it is not a voting, but a multipath information process, the goal is to optimize a project without any information distortion, or unexpected significant issues. So it might not be surprising that after concertation and public inquiry there remain questions related to the project acceptability and needs for information raising from even the action implementation (Cf. Illustration 4). More broadly the Figure 3 highlights the public debate propensities at all territorial scales, and reflects a scalability having to be taken in account. In the Lacq CCS case, after the concertation and the public inquiry ending in 2008, the pilot implementation period and the three following CO2 injection years provided this evolution and the corresponding rising generality with *useful time*, in a particular and complex initial context (Lacq after gas and employment issues, engineering schools and Pau University declining attractivity, novelty and acceptability of an integrated CCS system first experimentation). Conversely the widening public debate scope gave the local public debate broader and more accurate perspective and context, thus stimulating reflexivity and enhancing local capabilities for the action acceptance. Figure 3 alternates well contrasting territorialized sequences from 2007 until 2010 with a clear editorial policy that demonstrates the local public debate was not eclipsed by a leading regional development generality, while the official pilot inauguration under the auspices of the French State in January 2010 was clearly a turning point (Cf. illustration 3). Then the successful completion of the CCS chain experimentation until March 2013 never undermined the need for a happy epilogue of the public CCS debate, and here it is the rewarding shift to the scope of a regional geosciences development for energy transition from a local and fertile anchorage.

7 Discussion, lessons learned and conclusions

In this case, Total demonstrated a strong will to engage in a concertation, allocating significant resources early on: hiring a consulting firm and allocating senior engineers time to answer the questions. The concertation covered the whole territory, from the Capture site in Lacq, where acceptability was likely from the start, to the Storage site in Jurançon where acceptability was more delicate. Social conditions were very favorable to the project. For two generations, the operator has been the first economical and therefore political power in the area, and has consistently demonstrated that it could control high risks. The project answered directly and indirectly local needs for economic development, in the long run context of the gas field depletion and the resulting decrease in economic activity. Furthermore, research on CCS is supported nationally and internationally by scientists and States. All these reasons contribute to explain why the permit was obtained.

Still there are lessons to be learned. Total's position would have been stronger if its permit request had been audited by a different team, and if it had more specific long-term plans. Because concertation meetings were held before elections, the local officials could only take a non-committed stance. Using a Parisian consulting firm to moderate the discussion, and employing hostesses to hand out the information packages was not appreciated by the people of Jurançon. Total, following the advice of the president of the national commission on public debates, did not mass-mail the community with information on the project. Consequently, citizens came to the meetings to receive information, not to defend a stance in a debate. Another reason why the public participation in the discussion was low is that smaller formats might have been more interactive.

This case exposes the difficulty of modern governance. A balance between concertation, information and representativity has to be found for each issue, depending on local ethics and customs as well science and technology. As concluded by Ha-Duong and Chaabane eds. (2010), this balance can only be pragmatically found. Technology policy is progressive and interactive; it needs projects to go forward. The project contributed to the regulation framework itself. The CLIS worked well, but the formal public inquiry came late in the procedure and did not interest much the citizens. Risk management studies were revised, and landscape integration in the environment was improved. Landscaping is the sensory interface with the community.

The process of consultation, which aims to be a process of open dialogue was strengthened and legitimized by the foundation of the residents' association CJE. The radicalization of CJE's position during the concertation process impacted the balance of the public discussions with the project holders at CLIS. Total had to adjust its position, and could not do without an understanding of the values expressed by the public at meetings of the association.

It might have been presumed that since geological storage is a highly technical subject, there was some rationality in technocratic decision making, where executive powers are delegated to elected representatives and State's engineers. Most citizens know little to nothing about geosciences, and might err on the side of too much precaution when asked about an R&D project, since research means that there is a knowledge gap somewhere. In this case, the argument needs discussion, since some neighbors were perfectly knowledgeable about the Rousse reservoir, having worked at Total. We observe that the citizens tied with Total, retired or still active, exercised self-restraint in the public debates.

The case also highlights the issue of independence. As for many new technologies or drug assessments, CCS experts generally have an interest in the development of CCS. Local people in the administration, in the industry and even in the university or in the environmental associations mostly belong to interrelated social networks. Local political representatives are often reluctant to take side about socially dividing matters, while prefects as State servants are in charge of communities and institutional procedures. It is believed that, far from being a problem, strong communication links on the human or civil side is an asset for governance. Beyond sharing knowledge, a key to the successful co-construction of a social innovation is the widening and deepening of the real “social networks” behind it. In this case, providing information empowered the local community to act. Having concerned citizens asking pointed questions to experts balances power own momentum. The fact that the concertation led the neighbors to create an association

of opponents to tackle their own concerns probably improved the quality and the legitimacy of the CLIS debates.

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