# Conditions for the territorial anchorage of a natural gas exploitation project

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**Abstract**

Social acceptability of mining projects is a topic frequently addressed in scientific literature. But while vicious opposition can jeopardize the outcome of a project, a lack of opposition does not necessarily guarantee its success. The connections the mining company forms with the territory where it is established are very important in guaranteeing its sustainability. So here we focus on the limits of the concept of social acceptability based on an analysis of the territorial anchorage of a new coalbed methane extraction project in France.

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To: the editor-in-chief of *Society and Natural Resources*

Nancy (France), October 14th, 2019

Dear Professor,

Please find enclosed a manuscript we would like to submit as a Research Article for *Society and Natural Resources*

This work offers a contribution to the study of territorial anchorage of a natural gas exploitation project.

Gunzburger et al. (2017)[1] analyse the plan to extract coalbed methane in the Lorraine coal basin through the prism of social acceptability by the population. The authors have clearly demonstrated the population's varying perceptions of the project according to their social and geographical profile. We propose here to continue this work by analysing the project's territorial anchorage and the territory's capacity to organize itself so as to capitalize on this new activity. Indeed, while limited local opposition would not appear to be likely to jeopardize this project, neither does it guarantee its success.

We believe that our conclusions on the construction gaps of the project could serve as feedback for the implementation of new mining projects, more specifically on the importance of involving local authorities in the implementation of the process.

I thank you in advance for the time and effort you will expend considering our manuscript.

Yours faithfully

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[1] Gunzburger et al., Social perception of unconventional gas extraction on the outskirts of a former coal-mining area in Northeast France , The Extractive Industries and Society 4, 2017, 53-62.

- analysis of the territorial anchoring of a new natural gas exploitation project
- lack of consideration of the project in the local energy mix
- failure to take the project into account in the local economic development strategy

# Conditions for the territorial anchorage of a natural gas exploitation project

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**Abstract:**

Social acceptability of mining projects is a topic frequently addressed in scientific literature. But while vicious opposition can jeopardize the outcome of a project, a lack of opposition does not necessarily guarantee its success. The connections the mining company forms with the territory where it is established are very important in guaranteeing its sustainability. So here we focus on the limits of the concept of social acceptability based on an analysis of the territorial anchorage of a new coalbed methane extraction project in France.

**Key words**

Social acceptance, Territorial anchorage, Mining project, Coalbed methane

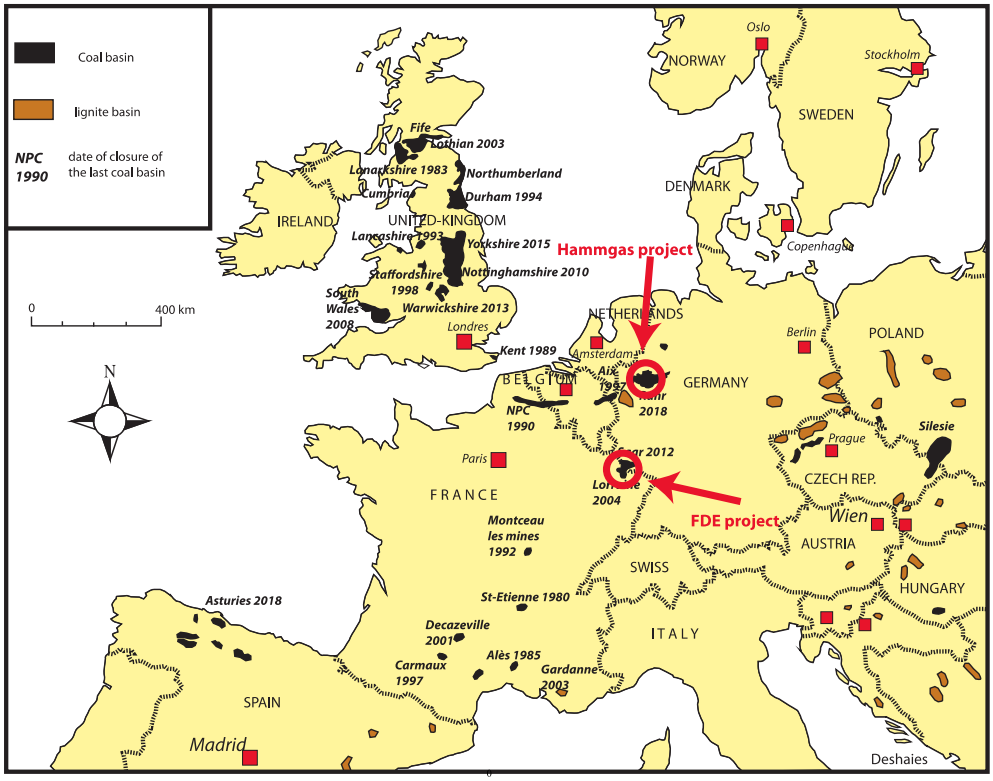


**Figure 1: Location of coalbed methane exploitation projects in the former coal basins of Lorraine (France) and the Ruhr (Germany) (source: Deshaies, Beauloye)**

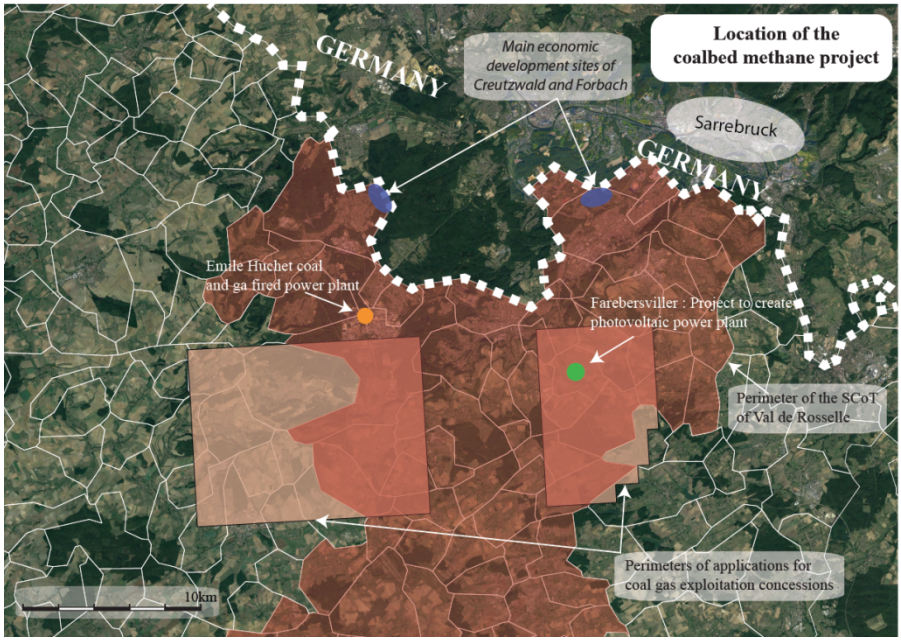


**Figure 2: Territory accommodating the La-Française-de-l'Énergie project (credits: Yann Beauloye, sources: FDE, Geoportail)**

## 1. Introduction

Coal mining has been in sharp decline in Europe since the 1960s. Only 54% of the 226 mining areas listed in 2005 were still in operation in 2005 (Lintz & Wirth, 2009). The last producing countries are located in Central Europe, Poland being the main one. The end of coal mining has brought about economic and social difficulties in most of the former coal-mining regions (Baeten et al., 1999), materialized for instance by a decline in birth rates, higher unemployment and lower living standards. Similar difficulties are observed in most mining regions all around Europe (Wirth & Lintz, 2007), and are particularly acute in the former coal basin of Lorraine (Grandmontagne, 2015 and Fig. 1).

This therefore raises the question of redeveloping these areas from the economical point of view. Some of them have used the mining-induced changes in landscape and topography to create recreational areas. The ski slopes of Bottrop (Germany) or Noeux-les-Mines (France), built on former coal tips, are one example, as is the redevelopment of open-pit lignite mines in lakeside areas given over to nautical activities in the Czech Republic, Germany or Poland (Wirth et al. 2012). New energy projects are also developed as part of conversion programmes. For instance, in the former coal basin of Lorraine (France), the construction of two solar power plants started in 2017 on an old coal tip and on an old storage platform.

A new mining project for exploiting a fossil resources of the subsoil - coalbed methane (CBM) - is currently under consideration in the former coal basin of Lorraine, where the last coal mine was shut down in 2004. This project, headed by the company *La Française de l'Énergie* (FDE), calls into question the economical reconversion strategy pursued in Lorraine, and thus the intention of the local authorities to reposition their development policies towards an extractive activity that at present has disappeared. This is because such a project could mark a return to the exploitation of carbon energy resources in the subsoil.

The plan to exploit coalbed methane in the Lorraine coal basin mirrors the exploitation of coalbed methane in the Nord-Pas-de-Calais (France). However, the technique is different, as there is no need to drill new boreholes into the coal seams in the case of the Nord-Pas-de-Calais. The methane is simply pumped out of the old mining galleries (Gunzburger et al., 2016).

Gunzburger et al. (2017) analyse the plan to extract coalbed methane in the Lorraine coal basin through the prism of social acceptability by the population and the economic rewards of the project (direct and indirect job creation, the tax knock-on effects, the benefits for industry). The authors have clearly demonstrated the population's varying perceptions of the project according to their social and geographical profile. Similarly, the authors have questioned the potential economic rewards of the project; they consider that "the probable benefits are still hard to predict, and they will probably be modest, given the economic difficulties the region currently faces." However, there is a point the authors do not address, namely that of integrating the project into the territory or not. Indeed, while limited local opposition would not appear to be likely to jeopardize the project, neither does it guarantee its success. It was the ambition of *La Française de l'Énergie* to sell the extracted gas locally.

This raises the question of the capacity of companies in the territory to acquire this resource, or at least the territory's capacity to attract new companies likely to do so.

Our analysis therefore focuses on the project's territorial anchorage and the territory's capacity to organize itself so as to capitalize on this new activity. We start by addressing this theme through an analysis of the public planning documents that structure the territory's economic development strategy by means of land management policies. We then analyse how this new source of energy may be integrated into the territory's future energy mix. Finally, we discuss the conditions whereby a resources extraction project can go beyond mere social acceptability and ensure its territorial anchorage.

## 2. Definition and state of progress of the coalbed methane exploitation project in Lorraine

### *2.1 Presentation of the project*

The coalbed methane exploitation project in Lorraine is led by the company *La Française de l'Énergie* (FDE). This company's ambition is to exploit this resource locally and distribute it directly to local industrialists in order to limit the transportation of the gas. Local transport will mainly rely on existing infrastructure. According to the company, eliminating the transport issue will enable it to offer a competitive selling price and will limit the carbon footprint.

The possibility of extracting coalbed methane in the Lorraine coal basin is based on the existence in the subsoil of a very thick series of coal seams that remained largely unexploited by the former underground coal mines. The natural permeability of the coal in Lorraine allows the methane it contains to be released in boreholes through de-pressurization, simply by pumping the water that saturates the rocks. Consequently, the FDE project does not require hydraulic fracturing (a technique prohibited in France since July 2012).

FDE has proposed to use a drilling technique in which lateral drains will be deployed from vertical boreholes, within the coal seams, to capture the absorbed methane. With this technique, several boreholes can be installed on the same platform, which limits the visual impact of the extraction sites and optimizes the facilities. This exploitation method, used for experimental purposes between 2009 and 2012, has shown that one vertical borehole could produce an estimated 22,000 to 34,000 cubic metres of methane per day (Pironon et al., 2012). This result would factor in the installation in Lorraine of thirty or so production centres, each comprising 15 boreholes. This would enable 12 million cubic metres of gas to be produced per day. By comparison, the daily consumption of gas in France is 110 million cubic metres.

In December 2018 FDE updated its estimate of the reserves of coalbed methane on the basis of the results obtained during the latest exploration campaigns. MHA Petroleum Consultants awarded the company a type P1 certification, which indicates the quantities of gas with at least a 90% chance of being recovered and being profitable. This certification identifies a total potential of 1.78 billion cubic metres of methane.

Based on these estimates, on 29 November 2018 FDE filed an application for a mining licence in order to start exploiting the resource. This application covers an area of 191 km$^2$, located in the southern part of the Lorraine former coal basin (Figure 2). The perimeter has been considerably restricted in comparison with the perimeters of the prospecting permit, which covered a total area of 790 km$^2$. The application for a mining licence is currently under investigation by the Ministry for the Ecological and Inclusive Transition.

### *2.2 State of progress of the project*

The history of the coalbed methane exploitation project in the Lorraine coal basin is closely linked to recent changes in French legislation. These changes have indeed had a direct impact on the implementation of this unconventional-gas extraction project.

In the area of interest of this paper, the first exclusive prospecting permits for liquid or gaseous hydrocarbons, called "Permis Bleu Lorraine" and "Permis Bleu Lorraine Sud", were granted to the companies European Gas Limited and Heritage Petroleum for a period of 4 years in November 2004. An initial extension of these permits to November 2013 was granted in April 2010. In September 2013 they were extended a second time to 30 November 2018. In parallel, on 9 May 2016 the permits were transferred to La Française de l'Énergie, which still currently heads the project.

This project is regulated by law no. 2017-1839 of 30 December 2017, known as the "loi Hulot", which prohibits any exploitation of conventional and unconventional hydrocarbons in France by 2040. More precisely, the new wording of the Mining Code[1] prohibits the exploitation of all liquid or gaseous hydrocarbons apart from coalbed methane. Coalbed methane is defined[2] as "the gas in previously mined coal seams that is recovered without any interventions other than those needed to maintain negative pressure in the mining cavities containing this gas in order to drain it". FDE's project in Lorraine therefore does not match this definition, as coalbed methane exploitation in Lorraine requires new boreholes, contrary to what is already done in Nord-Pas-de-Calais. Furthermore, the Mining Code[3] prohibits the issue of new exclusive prospecting permits and of mining licences, except for holders of a currently valid prospecting permit. The Bleu Lorraine and Bleu Lorraine Sud prospecting permits held by FDE expired on 30 November 2018. As they had already been extended twice, they can no longer be extended[4]. Therefore, if the application for a mining licence filed by FDE in November 2018 is not approved, the project will not be able to go ahead.

## 3. Territorial anchorage of the FDE project

### *3.1 Local planning documents*

Within the framework of French devolution policies, the local level, be it municipal or intermunicipal, is the preferred level for making urban planning decisions (Melot and

1 Article L111-6
2 Article L111-5 of the Mining Code
3 Article L111-9
4 Article L142-1 of the Mining Code

Bransiecq, 2016). The Land Use Plans (LUP) created by the Urban Solidarity and Renewal law of 13 December 2000, be they municipal or intermunicipal, as well as the Municipal Maps, are planning documents that locally transpose land use rules. However, their guidelines must be compatible with higher ranking documents, primarily the SCoT (French territorial consistency programme). Unlike the LUP, the SCoT does not regulate land use but defines an overall development strategy that is transposed into regulations by the LUP. Furthermore, whereas the LUPs are defined at municipal or intermunicipal level, the SCoT covers a more extensive area in order to lay down a consistent comprehensive strategy. For instance, the SCoT of the Val de Rosselle covers the entire former coal basin, through 4 intermunicipal districts comprising a total of 78 municipalities (Figure 2).

The law enacting the new territorial organization of the Republic of 7 August 2015, more commonly known as the “loi NOTRe”, created a new strategic planning document at the level of the new French regions called "Schéma Régional d’Aménagement, de Développement Durable et d’Égalité des Territoires" (SRADDET, regional plan for urban planning, sustainable development and the equality of territories). According to the hierarchical rules governing standards, lower ranking documents (such as the SCoT and the LUP) must be consistent with this new document.

In order to analyse whether or not the FDE project is taken into accpunt in the territory’s development strategy, we have analysed the different planning documents currently in force in the territory or under construction.

The SCoT for Val de Rosselle was approved on 5 March 2012 and is currently under review. Albeit not yet approved, the main lines of development laid down in the new version of the SCoT have already been made public. Consistent with the draft SRADDET, the new SCoT for Val de Rosselle places emphasis on development of the territory in the border zone between France and Germany (Figure 2). The development of new enterprise zones will no longer be permitted. This is explained by the existence of extensive land reserves. Most of them are located in the Warndt Park zone under construction and the Forbach Eurozone (border area enterprise zones), which are defined as having priority (Figure 2). The Warndt border sector thus represents the territory’s redevelopment strategy. This could prove problematic for FDE if it does not modify its project and wishes to continue prioritizing the supply of gas to companies “per parcel”, inasmuch as most of the land reserves are located on the border and thus outside the concession’s perimeter.

The Warndt Park project, which started in 2009, is presented as being “central to the revival of the territory”. The firm Insitu-Architectes, the project manager, has been contacted and invited to present this project. The project is based on the principle of cross-border development and should “give new impetus to the economic development of the territory”. It has been conceived to offer a variety of uses, and from this perspective it will eventually accommodate commercial businesses but also leisure activities and housing, all this in carefully designed landscaped surroundings. It is worth noting that the firm tasked with designing the zone was unaware of FDE’s project, and therefore did not organize the zone around this possible energy-producing component. Moreover, this perimeter is not served by the network of pipelines, which rules out transmission by this means of the gas extracted by FDE in the most ambitious economic development sector of the former Lorraine coal basin.

To ensure the statutory feasibility of the project, the municipality's LUP was modified in 2018 accordingly, allocating a surface area of 92.7 hectares to this economic development project. The justifications for this in the LUP modification document underline the need to be able to accommodate industrial activities that take up a lot of space but that also create a great many jobs.

In contrast this new showcase, the reconversion of the former mining sites has been abandoned. The General Position Paper on the future SCoT envisages "an integrated and well thought-out approach to management of the post-mining era, in particular the future of the mining wasteland, the location of which rules out any realistic economic reinvestment plan"[5]. The local councillors thus seem to be abandoning the former mining sites on their territory in favour of cross-border development.

When questioned about the project, the Chamber of Commerce and Industry of the Moselle department specified that the southern part of the Lorraine coal basin has an extensive fabric of enterprise zones, but most of them are full or have fragmented land reserves. This will be aggravated by the fact that the last large land reserve in the south of the Lorraine former coal basin in the municipality of Farébersviller now belongs to the departmental council of Moselle. The council plans to sell these plots in the short term and set up a photovoltaic power plant there. If this area is chosen by large industrial undertakings, thus potentially interested in a supply of "cheap" gas, they would therefore be directed towards the border areas in the north of the territory. The Chamber of Commerce and Industry, whose elected representatives prove to be 35 local company directors, has moreover stated that it has not been consulted about FDE's project. The vision of the Chamber's elected representatives regarding the department's economic development strategy now focuses on the service sector and the residential economy. They consider a new mining project to be "at odds with this vision and the territory's redevelopment strategy".

The special adviser working on the new SCoT for Val de Rosselle was questioned about the inclusion of the FDE project in the economic development strategy defined in the SCoT and reflected in the land strategies directed at economic development. It transpires that the said special adviser was unaware of the coalbed methane exploitation project. Some of the local elected representatives have therefore been unaware of the project, or have not seen fit to include it in the local economic development strategy, which proves to be problematic for FDE.

Undoubtedly the location of Lorraine, and even more so the former Lorraine coal basin on the German border, thus influences the territory's current development ambitions and strategies. The influence of the border has in particular been demonstrated by Renard-Grandmontagne (2015). In his article, the author highlights the importance of cross-border flows, commuter traffic being the predominant one. Nearly 25,000 French workers are thought to commute from Lorraine to Germany every day. This influence has also been spotlighted by the SCoT for Val de Rosselle. The latter identifies a daily flow of 4,600 cross-border workers between the coal basin and the town of Sarrebruck, in the Sarre region of Germany (Figure 2). This is because the town presents an industrial profile (metal production

[5] Excerpt from a position paper produced in April 2017 by the Moselle conurbation planning agency, presenting the broad outline of the future SCoT (French territorial consistency programme) for Val de Rosselle.

and processing, mechanical engineering, plastics, automotive, electrical engineering, *etc*.) that support many jobs. Furthermore, a daily flow of 7,200 individuals between the former coal basin and the rest of Germany has been identified, making a total of 11,800 cross-border workers. So nearly half the workers commuting every day from Lorraine to Germany are within the scope of our study.

Cross-border cooperation began in 1997 with the creation of the Zukunft SaarMoselle Avenir association of municipalities and intermunicipal districts in the border area. Mindful of the ties between these border territories, at the time the association's aim was to "structure and develop" these ties[6].

The association took the form of a Eurodistrict in response to the call of the French and German government in 2003 on the occasion of the 40th anniversary of the Franco-German friendship treaty. The SaarMoselle Eurodistrict European territorial cooperation grouping (GECT) finally came into being on 6 May 2010. The Eurodistrict's articles of association state three main missions:

- "Carry out cross-border projects and assist its members in setting up and implementing projects of a common interest"
- "Support and promote cross-border networks of citizens that contribute to achieving the objectives of the Eurodistrict"
- "Undertake the common territorial marketing of the SaarMoselle Eurodistrict and promote its interest vis-à-vis regional, national and European institutions".

The draft SCoT for Val de Rosselle thus fits in directly with the Eurodistrict's articles of association.

After an analysis of the main local planning documents and discussions with the key players of regional planning, it transpires that the FDE project has not benefited from an integration strategy of the local authorities. FDE, which was questioned on this point, admitted it had not had any in-depth communication with the population and the local stakeholders until 2015. That year, the reformed French Mining Code imposed a stricter obligation to inform the public about exploration projects, which forced the company to review its communication standpoint. Conscious of this error, the company then set up two monitoring committees, which meet on a regular basis. Their members include local councillors, the partner public structures, with in the first instance the Prefecture and the population (in particular the collectives of opponents to the project). The aim is to answer questions about the progress of the project.

One can therefore assume that this belated cooperation now threatens the successful appropriation of the project by the local councillors, and the preparation of the territory to accommodate this possible new economic project.

According to FDE, the elected representatives "do not appear receptive to the project's potential spin-offs for their territory". They remain unresponsive. To correct that, the company wishes to engage in a new work phase with the territory's elected representatives and stakeholders. This time collaborative workshops should be set up. Although their

6 HDW Werbeagentur (2010), L'eurodistrict SaarMoselle: Mode d'emploi, Association Zunkunft SaarMoselle Avenir, Saarbrücken, 7 p.

organization has not yet been decided, the aim is to go further in jointly constructing the resource exploitation project. However, this process comes belatedly in the operation, which calls its effectiveness into question.

The electoral context may work against the project. According to the SCoT's special adviser, the 2020 municipal elections will drastically change the municipal teams. Most of the oldest elected representatives have announced that they will not be standing for election again. But they are the last still attached to the territory's mining past. Again, according to the special adviser, the younger ones wish to intensify the economic transition to the service sector and to "greening" the territory. Therefore, one cannot be sure that the FDE project will benefit from their support.

### *3.2 Uncertainty around the development of the energy mix in Lorraine*

De-industrialization of the territory has resulted in a considerable reduction in its energy consumption. Between 2005 and 2016 the energy consumption of the three communities of municipalities making up the former Lorraine coal basin fell by 65%. Over the same period and area, the consumption of industry fell by nearly 85%. In parallel the proportion of gas in the local energy mix grew, due in particular to the commissioning of two gas-powered units in the fossil-fuelled power plant of Émile Huchet (Figure 2). In parallel, the proportion of coal in the regional energy mix collapsed. Emitting too much $CO_2$ during combustion, coal does not fit in with the global warming countermeasures and targets set by the French government. It has planned to close coal-fired power stations in France in 2022, including the last units of the Émile Huchet power station.

FDE's project could therefore make sense if the methane were used to supply the power station. This would indeed tie in with local tradition. In 1979, 42% of the coal produced in Lorraine was used by EDF (the French national electricity board) to generate electricity. However, the future of the station is currently uncertain. Two of the last four existing coal-fired power stations in France belong to company Uniper, including the Émile Huchet station; the other two belong to EDF. Uniper's two stations are in the process of being acquired by the Czech company EPH, apart from the two Émile Huchet gas-powered units, which are expected to be acquired by Total[7]. However, these negotiations are under threat from the French government, which wishes to shut down these 4 fossil-fuelled power stations in 2022. This was confirmed by President Macron in November 2018 when he presented the broad outline of long-term energy production.

Furthermore, the future of gas-fired power stations in France is no longer assured. In December 2018, the Senator for Moselle posed a question for oral answer[8] in the Senate for the attention of Minister for the economy and finance. The question concerned the consequences of shutting down the coal-fired units at the Émile Huchet station, and the possibility of converting them to replace coal with gas. The junior minister's answer to this question appears relatively firm. She said "in order to meet the target of net zero $CO_2$

7 https://www.lemonde.fr/economie/article/2018/12/24/le-milliardaire-tcheque-daniel-kretinsky-achete-deux-centrales-electriques-en-france_5401838_3234st.html

8 Question for oral answer no. 0550S from Mr François Grosdidier. The author of the question has two and a half minutes to present it, and possibly reply to the minister; the latter has the same amount of time to answer the author

emissions by 2050, no other power stations using fossil fuel, including natural gas, can be approved."[9]

The government's ambition to achieve net zero $CO_2$ emissions by 2050 is currently laid out at regional level in the SRADDET. Albeit the responsibility of the Regional Council, constructing the SRADDET also involves the local authorities. The elected representatives of the Lorraine coal basin have thus had the opportunity to express their views and put forward the projects of their territory. The construction of this document began in February 2017, and albeit not yet complete, its main strategic lines have already been made public.

Two main lines comprising 30 objectives and translated into 30 rules make up the draft SRADDET. We should point out that the coalbed methane exploitation project is never mentioned in the SRADDET's documents. Furthermore, the primary objective of the SRADDET sets out the energy mix envisaged in 2030 then in 2050 for Eastern France (Figure 4). While the target of covering 100% of consumption with renewable energies is set at 2050, an intermediate stage is planned in 2030. Coalbed methane could have a place in this strategy. In 2018, 34% of the final energy consumption of Eastern France still originates from petroleum products (source: ATMO Grand Est Invent'Air V2018). As the combustion of natural gas emits nearly 25% less $CO_2$ than oil, this resource could contribute to meeting the carbon emissions reduction target for Eastern France in 2030.

| | **SRADDET Eastern France 2030** | **National regulation 2030** | **SRADDET Eastern France 2050** | **National regulation 2050** |
|---|---|---|---|---|
| Reduction in consumption | -29% | -20% | -55% | -50% |
| Reduction in fossil fuel consumption | -48% | -30% | -96% | / |
| Consumption covered by renewable energies | 41% | 32% | 100% | / |
| Reduction in greenhouse gas emissions | -54% | -40% | -77% | -75% |

Figure 4: Energy mix targeted by the SRADDET for Eastern France in 2050 – Excerpt from the "Objectives" document of the SRADDET for Eastern France

We have just seen that the Lorraine territory does not appear to have organized itself at all to integrate the coalbed methane exploitation project in its planning policies. This may well work against FDE in due course when marketing the extracted gas, whereas the project could have been boosted if the territory had embraced it. This challenges the relevance of social acceptability as the sole criterion for a prospective analysis of the success or failure of a mining project. While the work of Thomson and Boutilier (2012) establishes four levels from

9 Published in the Official Journal of the Senate on 20/03/2019 – page 3145

the Social Licence to Operate ranging from rejection to appropriation, it might be relevant to include a fifth, namely a lack of interest. This is the subject of our discussion.

## 4. Discussion: from social acceptability to territorial anchorage

### *4.1 Is social acceptability simply a search for the lack of opposition or a tool for joint construction?*

According to Raufflet (2014), the notion of social acceptability arose from a combination of two factors. The first relates to the limitations of the companies' legal licence to operate, namely the permits and licences granted by the authorities. Thus, according to the author, the local population that may well not benefit directly from the mining project or may suffer negative consequences, such as damage to the environment and local resources or a massive increase in heavy goods vehicle traffic, are liable to challenge the legitimacy of projects officially approved by the authorities.

The second factor concerns the temporality of mining projects. These in fact mobilize significant funds over the long term, due to the non-mobility of the exploited resources. Mining companies must therefore maintain good relations with the public, in order to reduce the risk of opposition, which could jeopardize their project; due in part to the potential risk of being denied access to essential resources such as raw material or labour.

As distinct from the legal licence to operate, the mining industry has developed the concept of social permit to operate. This came into being following several ecological accidents caused by mining in the 1990s. In 1997, during a meeting with the World Bank in Washington DC, Jim Cooney, then Director of International and Public Affairs, asked the mining industry to develop the social permit in order to restore its reputation. According to the International Council on Mining and Metals, in 2012 this concept was common and used by the mining industry.

Smith & Richards (2015) define the social licence as a tool enabling mining companies to manage social and political risks by following a set of implicit rules laid down by the stakeholders, namely those having a direct interest in the project. This social licence is the basis for conducting negotiations that will enable the project to succeed.

However, the importance of social licence is not approved by everyone. For instance, Newman (2014) suggested that excessive endorsement of the social licence to operate can be transformed into rejection of the rule of law and thereby destabilize Canadian society. Gerson (2014) even goes as far as suggesting that the rules must be laid down by the regulators, as "the general public is incapable of agreement". These positions appear authoritarian and rule out any possibility of joint construction of projects. However, the critics of the social licence to operate are in a minority. The idea of joint construction of projects is also open to debate in the literature. A concrete example concerns its degree of institutionalization; in other words: should social acceptability be systematic and regulated? According to Gendron (2014) a project can be accepted with it being jointly constructed, which casts doubt on the need to institutionalize social acceptability.

The work of Batellier (2016) alerts us to the risks that arise from the multiplicity of definitions and positions inherent to social acceptability. He has carried out an analysis of the different definitions and approaches to social acceptability. He states that "the profusion of approaches and meanings the basis of which is never really made explicit or clarified, also risks creating a "portmanteau" term devoid of meaning that can be manipulated as the stakeholders wish, thereby provoking distrust, a dialogue of the deaf or even open conflicts about the meaning of the notion". Here it is clear that a biased definition of social acceptance can serve the interests of a project, leaving aside the initial objective that has certain similarities to the principle of participatory democracy.

Other authors underline the enrichment of a project through social acceptability. Social acceptability should not necessarily be perceived as an end, but can also be conceived as a unit of measurement of the degree of acceptance of a project, or rather the degree of opposition to it. For instance, Thomson & Boutilier (2012) underline that, on the basis of the components of legitimacy, credibility and confidence, a company achieve four levels of social licence to operate:

- Rejection: this is the lowest level of accessibility, which manifests itself in opposition that can compromise the viability of the project.
- Tolerance: at this second level, the project is barely tolerated locally. There is a very high risk of opposition to the project. The company leading it is kept under close scrutiny.
- Approval: The local communities are kindly disposed towards the company leading the project and wish to collaborate with the company.
- Appropriation: The local communities are integrated into the project and its management. They back the company against possible critics. This highest level minimizes the risk of opposition as much as possible.

Appropriation materializes the outcome of the social acceptability process. At this stage, the interests of the company and the territory converge and mutually feed one another. The aim according to Raufflet is to put territories on the pathway to "resilient local development". The author defines this concept as being inspired by the French "School of proximity", which contrasts with neoclassical economic theory. The latter underscores the fact that territories are merely supports for establishing companies (Zimmermann 2005), which are perceived as nomads, nomadism being necessary for the survival of companies in a context of globalization. In this vision, the only role of territories is to be attractive for firms.

A contrario, the school of proximity rejects this vision and suggests that the territorial integration of companies can be a vector of mutual development. Such integration more particularly involves collaboration of the territory's stakeholders with those of the company (Zimmermann, 2008).

Torre & Rallet (2005) argue along these lines. For the latter, there is a distinction between geographical proximity and organized proximity. The former can present risks for economic activities in the event of opposition, and thus the risk of conflicts. Conversely, organized proximity through negotiations and cooperation can be fruitful for both parties.

Zimmermann (2008) has taken up the work of Torre & Rallet and proposes dividing organized proximity into two categories:

- Organizational proximity, in which staff occupy specific and distinct posts, which can be similar or complimentary.
- Institutional proximity, in which staff share similar codes and values, which allow them to anticipate the actions of each party.

It is therefore clear, in the light of these works, that the ultimate aim of these different forms of collaboration is to create "long-term synergies in the form of shared resources" (Raufflet, 2014), which will sustain the investments made. Finally, according to this author, further to this process of collaboration, the territory can become resilient, based on three complementary factors: "local economic diversification, the search for local social cohesion, and ecological viability".

In these analyses the idea of mutual enrichment between company and territory clearly emerges.

### *4.2 Going beyond social acceptability to achieve territorial integration*

If we simply consider the issue of social acceptability, the coalbed methane exploitation project initiated in Lorraine does not appear to be under threat. Although collectives of local opponents have organized themselves in the territory, their impact remains limited. For instance, in October 2017 a public inquiry was held before the start of the exploratory drilling works. During this inquiry, 93 individuals or organizations manifested themselves and 141 remarks were formulated (Figure 3). The investigating commissioner leading this public inquiry stated that mobilization was relatively insignificant for a project of this type, which contributed to his decision to approve the project. Furthermore, he stated that a great many remarks were made by persons outside the territory, which further minimizes local opposition to the project.

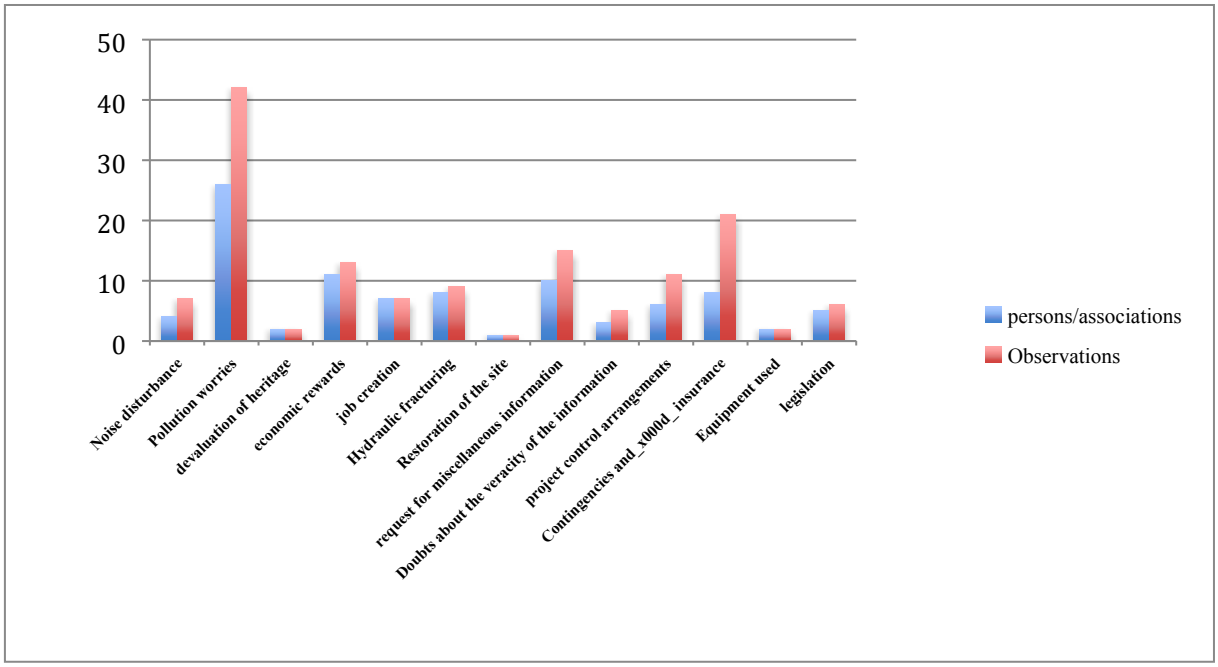


**Figure 3: Classification by theme of the remarks formulated in the context of the public inquiry on the exploratory drilling project in the municipality of Folschviller in 2017**

According to Yelle (2014), when the acceptability judgment is favourable, people will not react. When it is unfavourable, "either people do not react, because they have no hard-and-fast views or they lack sufficient backing from their group, or it will trigger a negative reaction with the aim of having the project changed, particularly when it is deemed intolerable". At first sight it therefore appears that the project has gained local acceptance, or that opposition to it is not sufficiently organized to jeopardize it. Another theory could be that the project quite simply does not interest the population and the territory's stakeholders.

This does not seem to be a general trend in all similar projects observed in Europe. For instance, across the border in Germany, the coalbed methane exploitation project HammGas, located near the city of Hamm in the Ruhr (Figure 1), met with much stronger local opposition than in France. The scale of the mobilization was a matter of concern for the German politicians. On 24 September 2014 company HammGas was questioned by a Bundestag member from the Landtag of North Rhine-Westphalia about the techniques it considered employing. On 6 December 2014 Barbara Hendricks, the (socialist) federal minister for the environment, went in person to one of the municipalities affected by the project to talk with its opponents. Furthermore, on 12 November 2014 a public meeting presenting the project attracted nearly 320 people, three times more than during the public inquiry held in connection with the drilling project in Lorraine. HammGas was subsequently forced to hold a number of other public meetings, during which it answered point by point more than a hundred questions asked by the project's opponents.

However, the lack of opposition to a mining project does not necessarily guarantee its success. This raises the following question: can a project such as that of FDE, not threatened by sufficient local opposition, have a real impact on the territory? This question refers to the notion of territorial anchorage. ISO standard 26000[10] defines territorial anchorage as "the proactive local work of an organization vis-à-vis the community. It aims to prevent and resolve problems, encourage partnerships with local organizations and stakeholders, and demonstrate socially aware conduct vis-à-vis the community. »

Again according to ISO standard 26000, territorial integration should be addressed according to three key areas of sustainable development:

- Economic: the creation of direct or indirect jobs, involvement in local development.
- Environmental: waste reclamation, recycling and re-use, optimization of transport, use or production of renewable energies, water savings, etc.
- Social: the search for accessibility, social cohesion, well-being, etc.

Territorial anchorage and social acceptability thus appear to be two complementary concepts. For instance, according to the work of Thomson and Boutilier (*supra*), appropriation is the most advanced stage of the Social License to Operate, and thus of social acceptability. According to these authors, the local communities are then integrated into the project and its management. Territorial anchorage refers directly to this goal of integrating local communities. In this respect, Hatchuel (2009) suggests that "companies cannot separate

10 Standard of the International Organization for Standardization (ISO) on corporate social responsibility, published on 1st November 2010.

their private interests from their public impact, and must therefore conduct their management according to these two dimensions". This has notably been analysed by Batisse (2015) in his work on the territorial anchorage of company Lyonnaise des Eaux, which presents the benefits arising from the company and the territory collaborating in matters of sustainable management of water resources. The study of relations between the company and the territory stems in particular from the stakeholders theory of Freeman (1984). This author makes a distinction between the company's shareholders and its stakeholders, who are independent. According to Freeman, three categories of stakeholders can be identified: internal (employees and trades unions), ubiquiti (customers, suppliers, banks, etc.) and external (local authorities, the population, the authorities). Delannon et al. (2014) define the territory as the main stakeholder participating in corporate social responsibility. According to them, CSR is marked by "put the company to the test towards its immediate geographical environment".

## 5. Conclusion

The coalbed methane exploitation project in the Lorraine former coal basin could be a pertinent lever for the economic development and energy transition of the territory. However, the current project headed by the company *La Française de l'Energie* seems to be at odds with local planning policies. This can be explained by the lack of involvement of local stakeholders. Their lack of understanding of the project appears to have led the territory to frame its planning policies and strategies without including the coalbed methane exploitation project. The ability of the company and the territory to correct this shortcoming in order to agree on a common project must be questioned in order to optimize the chances of positive spin-offs. Coalbed methane could be fully integrated as a transition energy in the energy mix strategy targeting 100% renewables in 2050. Furthermore, using a local gas resource to supply potential new industrial undertakings could help revitalize the local economy. To achieve that, local players must play an active part in implementing the project in order to organize their territory accordingly, which implies the company evolving its strategy in order to really integrate its project into the territory.

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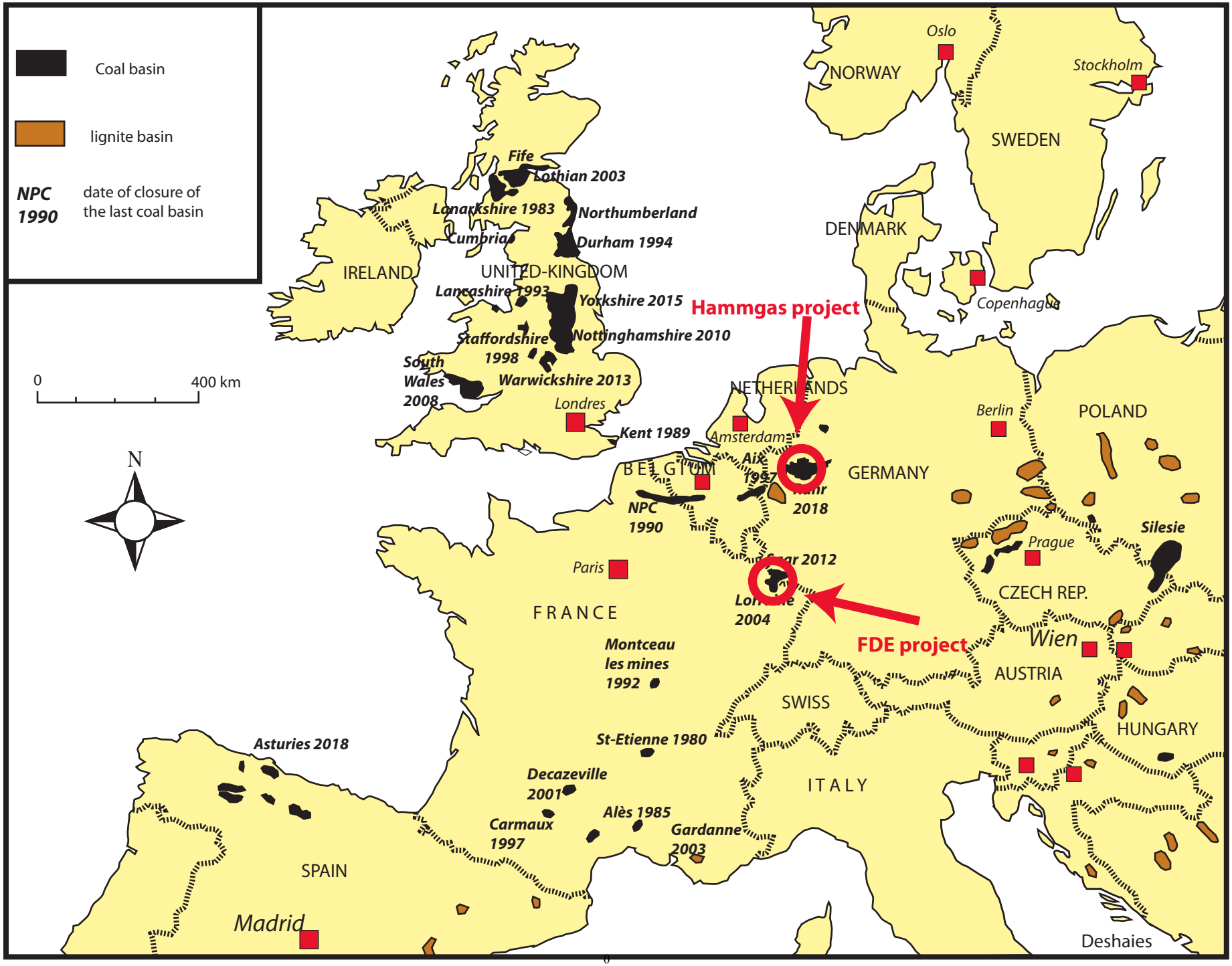
Coal basin
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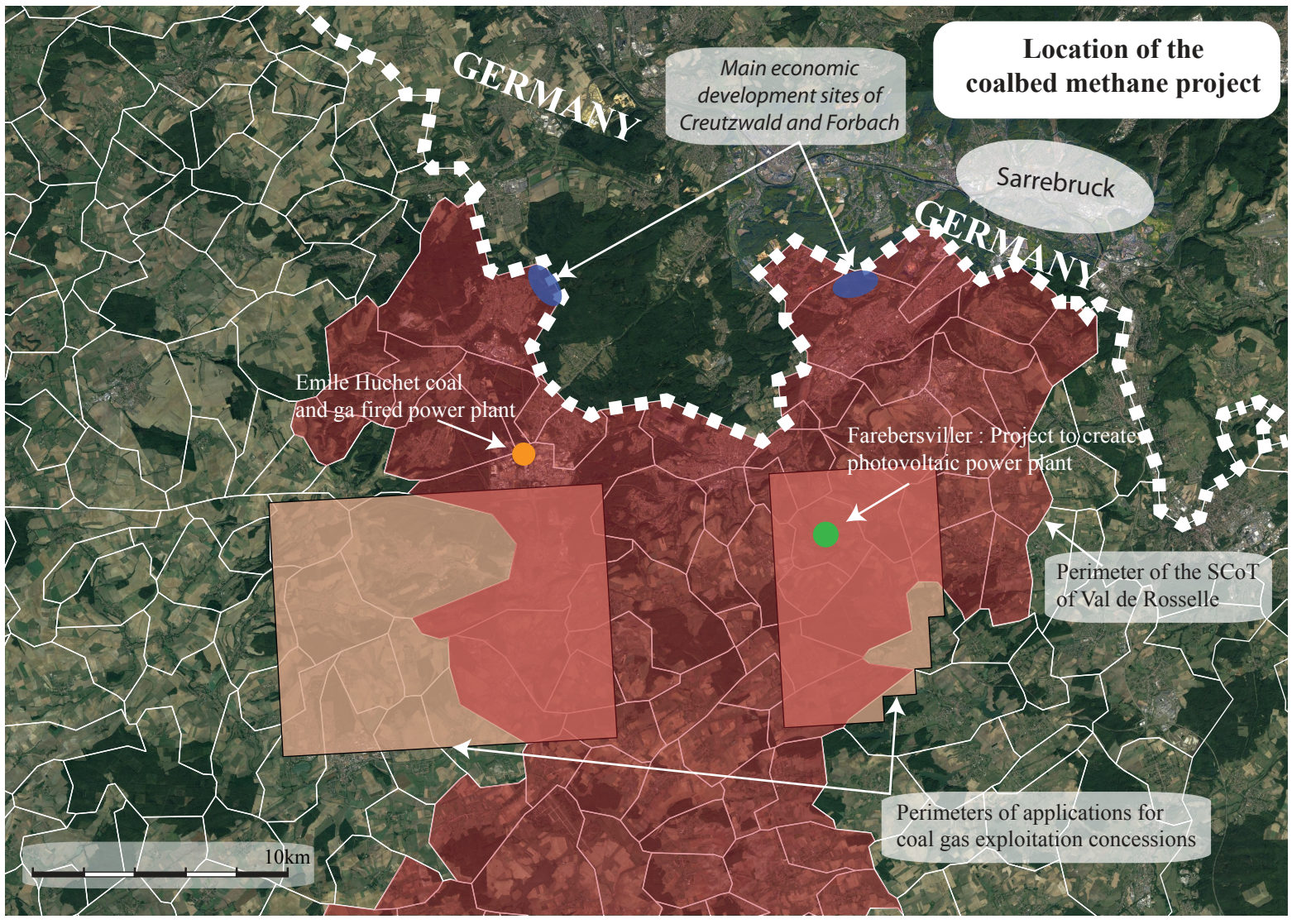
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Main economic development sites of Creutzwald and Forbach
Location of the coalbed methane project
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