Sector-based political analysis of energy transition: Green shift in the forest policy regime in France

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HIGHLIGHTS

- Implementing energy transition policy potentially challenges sector-based politics.
- We propose a policy regime framework and socio-political investigations.
- We analyse the political impact of energy transition policy on French forest sector.
- Shifts occur in sectoral policy framework, authority, and mediation relationships.

Abstract

This article examines energy transition political process from a sector-based approach, through the analysis of recent shift in the French forest policy regime. We demonstrate that, since 2007, energy transition policies have led to a harvesting turn within the French forest policy framework, meaning that priority is given to wood mobilisation, mainly for biomass uses. In addition, our findings suggest that the political authority wielded by the state over forest policy has shifted from forest administrative services to energy agencies and local authorities. Finally, we show that, although implementation of the harvesting turn is a cause of sectoral and inter-sectoral tensions, energy transition challenge also contributes to a process of (re)institutionalisation of mediation relationships among forestry stakeholders and wood-based industries representatives. The article concludes by arguing that sectors should retain relevant institutional frameworks for actors when choosing political arrangements required for implementing energy transition policy.

1. Introduction

Energy transition is generally considered as the process of innovation and technological development that society is expected to go through when dealing with the climate challenge. Following the ecological modernisation path, energy transition is supposed to serve as a driving force for greater economic growth and industrial competitiveness (Jänicke, 2008). The development of energy transition focuses mainly on restructuring energy systems (Kern and Smith, 2008) and promoting renewable energy (from biomass, hydro-power, wind, or solar) (IEA, 2011). In particular, to achieve an overall reduction in the use of fossil fuels, it is argued that it is necessary to make a shift towards a sustainable bio-based economy, founded on the production and use of bioenergy, biofuels, and other green products. It has been stated in the literature that this process should lead to more environmentally-friendly development, thus allowing the transition from a fossil fuel-dependent economic model to one which takes advantage of natural resources and new innovations (Staffas et al., 2013).

However, in practice, the implementation of these developments is faced with numerous governing challenges and energy transition is still an ongoing process of change. European Union (EU) domestic greenhouse gas emissions will reduce by 40% by 2030 (European Commission, 2014) and energy production within the EU will need to undergo some drastic changes, as meeting the objective will require the proportion of renewable energy sources used across Europe to more than double (to reach a share of around 30% in 2030) (European Commission (EC), 2013a). While significant ground has been covered by the majority of member states, uncertainty still surrounds the future and scope for progress (European Commission (EC), 2013b). Consequently, governments are committed to ambitious climate change mitigation...
goals, and energy transition has become a promising political framework for formulating new strategies and policies (Foxon, 2011).

Implementing energy transition has been mainly studied as a technological challenge within the field of innovation studies, as it involves improving — or even reinventing — technical models related to energy production and consumption. However, it is also a central political issue, involving debates on the value and goals of future developments in society (van den Bergh et al., 2011). Energy transition causes a shift in the way interdependencies between public and private collective actors are managed, but it also challenges policy design and policy-making practices (Loorbach, 2010). According to those who promote transition management, a “fundamentally new governance approach” is needed to deal with these political issues, because energy transition is a “complex societal process” (Rotmans et al., 2001). According to them, transition policy can lead to a normative process of political modernisation, which can be addressed by institutional reform or shifts away from government to appropriate governance practices (Kemp and Rotmans, 2005).

Following a critical assessment of this transition management approach, the aim of this article is to apply a political sociological approach to the analysis of changing relationships between the state, market and civil society in a context of energy transition. In addition, we hypothesise that the political challenge associated with energy transition issues needs to be addressed on a sector-by-sector basis. While literature on new governance suggests going beyond traditional subsystem boundaries (Jochim and May, 2010), in this article we emphasise that, when implementing energy transition policy, sectors remain relevant on political spaces. In fact, we argue that sector remains relevant on focal unit of analysis to grasp socio-political dimensions of change and we assume that governance solution for achieving energy transition goals results partly from political adjustments in different sectors.

Throughout this article, we examine sectors not only as spaces for policy implementation but also as spaces for politics where public problems are discussed and politicised but also where power relationships shape policy developments and collective identity. This is discussed in more detail in Section 2 where the policy regime approach is presented as a framework to study the socio-political dimension of change. Following this, the main aim in Section 3 is to carry out a sector-based political analysis by applying a policy regime framework to the study of political change in the French forest sector, particularly in relation to the energy transition process. In the EU, implementation of energy policy comprises a wide range of measures that have consequences for forest management activities, and the resulting potential impact on forest policy. According to plans drawn up by member states, production of renewable energy from biomass will reach 104 Million tons of oil equivalent (Mtoe) by 2020 (i.e. approximately 60% of EU targets) (European Commission (EC), 2013b). Forest biomass will account for around 70% of this figure (Steierer, 2010). We will therefore study the energy transition policy process in the context of political changes in the EU forest sector, namely by examining recent shifts in the French forest policy regime. To do this, we analyse how the 2007 Grenelle environment forum has drastically changed the French forest policy framework through implementation of what we call the harvesting turn (see Table 1). It means that priority is now given to wood mobilisation, mainly for biomass uses, thus challenging both the distribution of political authority within the forest sector and the mediation relationships between forest-related stakeholders. Finally, Section 4 concludes by arguing that sectors remain relevant institutional frameworks to deal with political arrangements required to implement energy transition policy.

## 2. A policy regime approach for analysing political dimension of energy transition

The central point of this article is to argue for the placing of sector government at the heart of research into the emergence and deployment of energy transition, to grasp how the relationships between politics and policies influence changes in governance. Drawing on the work of Jullien and Smith (2011), we consider that studying the government of a sector faced with energy transition problems requires an approach whereby sectors are analysed as spaces for politics. In this section, we argue that shifts in governing practices can be analysed by addressing sectoral policy regimes through socio-political investigations.

### 2.1. Theoretical background: analysing political dimension of energy transition

Since the 2000s, studies on transition pathways and innovation developments have used a wide range of systemic approaches aimed at better understanding the interrelations between the different technological and institutional characteristics of what they call “socio-technical systems” (Geels, 2004) or “systems of innovation” (Edquist, 2005). These scholars have examined transition processes by looking more closely at the institutional dynamics associated with innovative developments and systemic changes (Geels and Kemp, 2007; Malerba, 2002). From this perspective, some authors have developed the concept of the socio-technical regime in order to address the complexity of the institutional configuration that materialise around a technology and its use (Rip and Kemp, 1998). Indeed, different ways of interpreting change have developed around this concept, based on the study of the conditions for readjusting the socio-technical regime in connection with its interaction with the networks of

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### Table 1

Shift in the forest policy framework.

<table>
<thead>
<tr>
<th>'Multifunctionality' stage (1992–2007)</th>
<th>'Harvesting turn' stage (since 2007)</th>
</tr>
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<tbody>
<tr>
<td><strong>Narratives</strong></td>
<td><strong>Narratives</strong></td>
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<tr>
<td>Traditional forestry practices are compatible with sustainable management principles</td>
<td>Implementation of intensive cultural practices can be necessary</td>
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<tr>
<td>All forest functions are of equal importance (focus on the ecological dimension of forest resources)</td>
<td>Priority given to wood mobilisation (focus on the ecological dimension of wood-based economy)</td>
</tr>
<tr>
<td>Multifunctionality goals can be reached in all forest spaces</td>
<td>Priority given to some functions in selected forest areas</td>
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<tr>
<td><strong>Instruments</strong></td>
<td><strong>Instruments</strong></td>
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<tr>
<td>Funding of ecosystem and recreational services by contracts concluding with ‘public’ entities (state or decentralised authorities)</td>
<td>Funding of ecosystem and recreational services by market-based instruments (Carbon funds, Water conservation private partnership, market for compensation of biodiversity loss, etc.)</td>
</tr>
<tr>
<td>Forest investments supported by public funding (aforestation programme after the 1999 storm)</td>
<td>Decrease in public funding for forest investments</td>
</tr>
<tr>
<td>Sustainable forest management control guaranteed by state administration</td>
<td>Substitution by the current private certification systems of the management documents provided by the Forest Code</td>
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actors that constitute niches for innovation, as well as with the socio-technical landscape that surrounds it (Geels, 2002). These works have produced some interesting debates concerning the agent–structure relationship, the imperviousness of social systems and the dynamics of change (Geels and Schot, 2007; Smith et al., 2005), and have provided the foundation for transition management (TM) approaches. These approaches challenge the legitimacy and effectiveness of the command and control mode of government, by referring to new forms of coordination between actors and learning processes, inspired by network and reflexive governance approaches (Voß et al., 2006).

However, we contend that this literature has a certain number of theoretical and analytical limitations in terms of understanding the political dimension of energy transition. Indeed, we support recent criticism stressing on their excessive normativity and lack of conceptualisation of politics (Shove and Walker, 2007; Voß and Bornemann, 2011). Meadowcroft (2009) reminds us that the formal mechanisms of transition management are ill-equipped to negotiate the political dimensions of long-term change. Our main assumption is that most of the literature in innovation studies fails to analyse the political dimension of energy transition because it focuses on technology centred systems (i.e. socio-technical systems) instead of policy centred ones (sectors or industries). While the formers refer to interactions of actors and practices which are mainly linked to functional issues (Geels, 2004), the latter are above all political constructions (Jullien and Smith, 2008). Consequently, the main aim of this article is to bring politics back in transition studies and to deal with the socio-political dimensions of energy transition by conceptualising political work, and its consequences for the sector in term of political–institutional arrangement. “Political work” is the process by which collective problems are problematised, become legitimate public problems through argumentation and composition of alliances and give rise to the (re)definition of rules, norms or expectations (Jullien and Smith, 2011). Political work occurs when actors refer to values to justify public action (politicisation) but also when they downplay values are in favour of arguments based upon expertise or efficiency (depoliticisation) (Jullien and Smith, 2008; Radaelli, 1999). To further enhance this analysis, we propose to address political work by returning to the socio-political dimension of energy transition policy. Firstly, we consider that institutional changes provided by energy transition have an effect not only on policy outcomes, but on the whole policy-making process and power configurations in the relevant political domain. Secondly, we argue that the sector is the relevant political domain in the study of the politics of transition policy. In fact, we assume that the sector – considered as a relatively stable socio-political configuration of actors (public, private and collective), policy instruments and policy beliefs (Muller, 2004; Sabatier, 1998) – remains a basic unit of analysis for research into the process of policy developments and implementation, particularly energy transition policy. Sectoral organization results from long term policy process which has shaped identities and power relationships and will largely determine the future changes in governing practices (Howlett and Ramesh, 1998).

Drawing on the work of Smith and Stirling (2007), this article aims at studying changes in “governance on the inside” but it proposes an alternative conceptualisation of the politics of transition governance. In fact, it seeks to promote sectoral approach as a way for better understanding of processes of powering and legitimation associated with energy transition policy (Grin, 2012), and more generally as a way to emphasise that transforming the existing governing structures and practices is a key innovative challenge of the transition process. Such an approach has a number of analytical and theoretical consequences. It hypothesises that the political challenge of energy transition is neither to try to select the most efficient technology and institutional arrangements, nor to compete for the imposition of a dominant model of governance. Instead, management of energy transition is also (and more importantly) strongly linked to the conditions for the production and reproduction of a sector in a situation of high uncertainty (Fligstein, 2001) as it confronts the diversity and heterogeneity of institutional arrangements (Hall and Soskice, 2001). Sectors can be defined as policy subsystems, whose integration and identity are always challenged by competing changes and stability processes (Howlett and Ramesh, 1998). In this article, governing practices and institutional arrangements in a given sector are conceptualised as a political regime, and energy transition policy is analysed as a political challenge which leads (or not) to a shift in policy regime.

2.2. Methodology: policy regime framework and socio-political investigations

In public policy literature, the policy regime is depicted as “political–institutional arrangements that define the relationship between social interests, the state, and economic actors” (Eisner, 1993). In practical terms, it is a framework which provides a multicausal approach to policy change, emphasising on the interaction between actors, institutions, and ideas (Hoberg, 2011) and combining a perspective on exogenous factors with a focus on political processes (Wilson, 2000). Dealing with the political dimensions of sector-based regulation leads to the policy regime being conceptualised as a temporarily stabilised frame for this political work and provides insights into the interplay of policy and politics in governing (May and Jochim, 2013). Finally, the policy regime approach aims at studying government shifts by emphasising that the possible variations in governance types and outcomes are more complicated than expected by many proponents of the new governance (Howlett et al., 2009).

Based on this framework, we therefore consider that governing relies on practices concerning the definition of “public problems” motivating new policy instruments for collective and/or public action, the processes of (de)politicisation which (de)legitimise such problems, and the policy instruments to which they give rise. Consequently, we seek here to conceptualize policy regime around three components which are policy framework, forms of authority, and mediation patterns (Fig. 1).

Firstly, the policy framework shapes the way public problems are defined, the types of solutions offered, and the kinds of policies proposed. It is defined broadly so as to grasp the cognitive and normative framework of a policy regime by characterising how much policy instruments and policy narratives influence the development of policy paradigms. In short, political ideas provide direction for governing and serve as integrating principles for policy regime (May and Jochim, 2013).

Secondly, political work is oriented toward political authorities, who share decision-making power and aim to influence the development of public policies. Many configurations of political authority can therefore be identified depending not only on the degree of fragmentation/displacement of the political power toward decentralised public authority (process of devolution), but also depend on the extent to which they – the state and decentralised public authorities – have chosen to share their authority for collective/public action with agencies and private organizations (process of delegation).

Finally, the process of politicisation entails the organisation of collective action through mediation patterns, including configurations of alliances or conflicts between stakeholders and relationships with political authorities. Mediation relationships can take place in formal and institutionalised arenas, or can happen informally, through classical lobbying practices and “unorthodox” forms of influence. Mediation patterns indeed play a major role in
the process of ownership and political endorsement of policies by stakeholder (Hajer, 2003; Warren, 1999); they also allow stakeholders to maintain relations with public authorities and participate in the process of political work. They unfold in political arenas in ways that depend on the characteristics of the political system, but also, increasingly, on modes of public action. In this context, institutionalisation of deliberation or participation arenas is usually presented as an opportunity to renew the format of the mediation and the way in which general interest is formulated.

This framework provides an analytical basis for a socio-political empirical study of political work in a context of sector based policy change. Shift in the French forest policy regime investigated in Section 3 is based on this framework and rely on qualitative methods (scientific literature, official reports, personal communications, interviews and observations). Data presented in this article have not been collected specifically for the study of the process of implementation of energy transition policies. Rather, analyses presented hereafter are secondary results of two main research works focused more generally on forest policy developments in France. First, document survey and personal communications in the form of interviews1 were conducted in 2012 within the framework of the European INTEGRAL project (future-oriented integrated management of European forest landscapes – FP7 – 2011–2015) (Sergent et al., 2013). Second, an extensive documentary analysis, semi-structured interviews of key forest-related stakeholders, 2 and participant observations in many forest policy arenas have been conducted in 2007–2011 for a Ph. D. thesis work dealing with shifts in the French forest policy (Sergent, 2013a).

Thus, the next section is based on empirical elements provided by these different works. Those findings reveal that both in the discourse of the different actors, and in the political activities involved in forest policy developments, energy transition is firmly associated with the process of transformation of governing practices in the forest sector.

3. Energy transition challenge and shift in the French forest policy regime

The last French Annual Finance Law Project (2013) sets out three key issues for governmental strategy in forestry and wood-based activities: increased wood mobilisation and greater competitiveness within the wood sector, sustainable management of public and private forests (including better protection of biodiversity), and adapting forests to weather the problems of climate change. Over the last decade, there has been a shift in priorities with regard to French forest policy. The key goal is now to increase wood mobilisation, with climate change mitigation as a central issue of forest policy developments. In this section, we hypothesise that this process of change involves a shift not only in policy outcomes, but also in the way the forest sector is governed. To demonstrate this, we provide in this section empirical evidences of the impacts of energy transition policy on the French Forest Policy Regime.

3.1. Political dimension of energy transition in French forest policy

The EU climate and energy policy package, adopted in 2009 (European Commission (EC), 2009), comprises transversal policy measures and binding national targets for renewable energy. While there is no set target for the proportion of woody biomass expected to contribute to the future renewable energy mix, the consensus among experts is that demand for wood energy will increase significantly. In a recent study, Mantau et al. (2010) stated that “if the energy demand develops approximately according to the policy targets — and assuming energy efficiency (+20%) and that biomass accounts for only 40% of renewable energy — then, the demand for energy wood will more than double by 2020”. Consequently, most European forest-related policies are consistent in encouraging the use of forest biomass for power generation purposes (Baron et al., 2013). Since 2005, the majority of European countries are thus involved in wood energy programs which critically challenge traditional forest sector policies (Söderberg and Eckerberg, 2013).
In this context, France has been set with the target of using 23% renewable energy sources (proportion of gross final consumption) by 2020. To attain this goal, national renewable energy production will need to more than double from 18.4 Mtoe to 37 Mtoe. Based on scientific expertise on economic and physically biomass availability, the National Renewable Energy Action Plan (2009–2020) states that biomass should account for 45% of the overall renewable energy effort, calling for an increase in the mobilisation of the forestry resource (forest and other wooded areas) of 3–5.4 Mtoe by 2020. France is currently the leading European country in terms of consumption of fuelwood, using more than 9 Mtoe/year. While most other renewable energy sources are dependent on the development of new industrial activities, the wood energy sector is expected to develop with the support of the existing forest sector. For that reason, we hypothesise that the translation of energy transition policy is particularly problematic for the forest sector. France is urged by the EU to reach its renewable energy goals, and implement ambitious policy programs which directly challenge existing political arrangements in the forest sector.

Literature on energy transition in the forest policy focuses mainly on the economic and resource impacts of fuelwood policies. However, the political impact of these issues has been neglected and rarely studied. These studies put the emphasis on the potential economic rivalries, but also complementarities, between the energy, pulp wood and timber sectors, linked with the development of fuelwood policies (Caurla et al., 2013; Delacote and Lecocq, 2011; Ince et al., 2011). Some of these studies also suggest that reaching biomass energy targets could be inconsistent with the objectives that the governments have put forward in terms of preservation of forest resources and reduction of carbon emissions (Buongiorno et al., 2011; Lecocq et al., 2011). Based on these results, we formulate three hypotheses related to the political impact of energy transition on the French forest sector.

First, we hypothesise that the implementation of fuelwood policies has an impact on the core orientation of the forest policy framework. The French forest sector is usually seen as a closed social system, largely isolated from the rest of the society. For a long time, state forestry experts defended the idea that to prevent forest management from uncertainty and short-term oriented policy, it was necessary to keep forest issues far from political debates. Some studies focus on the still continued opposition in the French sector between multifunctional and innovative vision of forest and a more traditional one, more geared towards timber production, and resistant to institutional innovation (Buttoud et al., 2011). Nonetheless, as for every sector-based policy, the norms and values which guide forest policy result from the tension between sector-based and global systems of reference (Muller, 2004). It seems that the energy transition issue is challenging the cognitive and normative framework of the forest sector. Indeed, it refers to narratives which produce productive use of biomass to respond to environmental concerns and it relies on a wide range of “new” policy tools (Caurla et al., 2013).

Second, we hypothesise that ambitious reform efforts challenge the coherence of forest policy through their influence on horizontal and vertical allocations of political authority and responsibility among institutions. For a long time, the French state had almost total authority over the country’s forest sector. Much of that authority stemmed from the well-recognised expertise of the national forest administration. This institutional framework, shaping the distribution of political authority in the sector, remained quite stable over time. However, this model is currently being challenged by two simultaneous and contradictory processes, exacerbated by energy transition issues. On one side, reforms in the public sector have led to less state funding being allocated to forest policy, thus changing its (the state’s) role in the governing process (Sergent, 2013b). On the other side, the state is being forced to reassert its authority by prioritising wood mobilisation goals in forest policy and implementing an ambitious national biomass energy programme.

Third, we hypothesise that the tensions and conflict generated in the forest sector through fuelwood policies change relationships between stakeholders, as well as modifying the mediation relationships connected to the governance of the forest sector. Political mediation patterns affecting the forest sector in the 1980s’ have been described as (neo) corporatist (Buttoud, 1998). There was a strategy of administrative interest intermediation (Lehmbruch, 1987), with forest administrative services — in close co-operation with the main private stakeholders — driving the organisation and coordination of private interests in order to increase governance capacity. In a context where these forest administrative services are declining and losing their power (Sergent, 2010), political work in the forest sector relies on new and rather unstable mediation relationships, both formal and informal in nature. Notably, energy transition debate provides new mediation arenas in which fuelwood policies are discussed and negotiated. The traditional boundaries of the forest sector are being transcended by actors from wood energy sector, who are becoming increasingly politically active, forming alliances to promote biomass mobilisation. Because of this, the question of whether hybrid mediation patterns are emerging, or whether most actors representing forest-related interests are still lobbying to protect their own interests, is very much a political one.

The aim of the next section is to develop these three hypotheses of political changes by applying the policy regime framework defined above to the study of energy transition in the French forest sector. As suggested above, the policy regime approach provides an effective analytical framework to study the dialectical relationship between politics and policy in a given sector faced with energy transition issues. From a socio-political point of view, we therefore consider that the French forest sector has been traditionally defined to include all actors (public, private and collective) and institutional arrangements that are involved in the policies associated with forestry, logging and related service activities. However, as shown in Fig. 2, we argue that the French forest policy regime involves actors from this traditional forest based system but also new types of actors and issues from others policy subsystems (e.g. wood based industry and wood energy sector).

3.2. The harvesting turn within the forest policy framework

Since the 1990s, the guiding principles of French forest policy have reflected a more ecological set of values (Table 1), focused on the increased importance of environmental concerns in political goal-setting (Cazals et al., 2013). Sustainable forest management principles were introduced into the French forest policy framework after a long process of translation of the general principles defined in 1992 at the United Nations Conference on Environment and Development. The guiding narrative of this reframing of the forest policy framework was the traditional idea that “What is good for wood production in a well-managed forest is inherently good for all the components of the forest ecosystem” (Barthod, 1996). This process led to formulation of forest policy goals and definition of policy instruments based on the narrative on multifunctionality of forests, which integrate new forest management guiding principles established at the European and international scale.

Then, the French government organised the Grenelle Environment Forum in 2007 with the aim of promoting new environmental

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policies. In accordance with the European framework of Climate policy, this roundtable notably underlined the importance of developing the wood industry if France was to meet its climate and energy targets. Similarly, the National Forest Programme (NFP), covering the 2006–2015 period, had already indicated that “France has rebuilt its forest resource and the harvest must now increase on the basis of sustainable management, not only for use now but also to prepare the forests of tomorrow and respond to global issues”.

In this regard, numerous policy instruments and rules are actually not considered consistent with these goals, because they are aimed at protecting forests from overexploitation rather than supporting harvesting activities and the development of a wood based economy.

This shift in the forest policy framework is what we call the harvesting turn. Changes are caused by developments in environmental issues and political commitments in the field of green policies, but this stage of the “ecologisation” (or “greening”) process leads, somewhat paradoxically, to a productive oriented forest policy framework. Indeed, the French government has taken its European commitments with regard to concrete wood mobilisation targets and converted them into national legislation. The result of this is that the French forest sector is now under pressure to respond to the needs of an emerging biomass industry. Priority is now given to the ecological dimension of the wood-based energy system. Because forest policy has so long focused on forest resource conservation and expansion, this harvesting turn represents a fundamental change to the policy framework. However, the current situation is somewhat problematic, because the shift in that policy framework is bringing about tensions in the forestry sector. These tensions, resulting from the implementation of the harvesting turn, show that the former forest reference system, through the concept of multifunctionality, had failed to integrate all of society's expectation relating to forests into a single coherent policy framework. While sustainability objectives were supposed to be attained by supporting and strengthening traditional forestry practices, implementing today’s harvesting turn requires a number of profound changes.

In a context of energy transition, the forest policy regime is faced with a new governing challenge. For many years, the strategy of the state, faced with budgetary and administrative problems, has been to improve the accountability and the involvement in the forest policy process of private stakeholders, and give decentralised authorities greater responsibility in the policy-making process (Rezes et al., 2013). Nevertheless, in a situation where social tensions in the sector are exacerbated by implementation of a new policy framework (the harvesting turn), this path of modernisation in France’s forest policy regime is a hard one to follow. The extent of state involvement in the forest policy-making process, and the setting of relevant mediation relationships between different stakeholders are key issues in this green shift.

3.3. Imbalance of state authority over the forest sector

Delegation of traditional state responsibilities to private stakeholders, agencies or decentralised authorities is a fairly alien concept in the French forest sector. Meanwhile, it seems that this state monopoly on forest policy has begun to erode as authority was passed instead to newly-empowered regional and local governments. As both economic and rural development and environmental conservation policies become in part decentralised, local authorities are acquiring more and more responsibilities connected to the forest sector and wood-based industries which could be further developed as part of a new set of energy transition policies. In surveys conducted with 60 départements (i.e. NUTS-3 level) and 12 regions, in 2008 and 2011 respectively, results showed that all regions and 80% of départements provided support to the wood energy sector, with half of the surveyed regions spending more than 20% of their forest sector budget.

![Fig. 2. Actors and issues involved in the French forest policy regime. Source: Agreste FORET-BOIS – Memento (2012) and ADEME (2013).](image-url)
on wood energy measures (e.g. subsidies for improving supply chains, for investing in storage platforms and collective boilers).\textsuperscript{4} Moreover, since 2010, regional climate, air quality and energy plans – jointly defined by the Préfet (i.e. the regional first representative of the State) and the President of the Regional Council – have been implemented as regional strategic document. It also contributes significantly to the education of local authorities with regards to wood energy related issues. In short, by becoming more frequently involved in programs promoting wood energy activities, they gain legitimacy in the forest sector and challenge (to some extent) the monopoly of the state and the coherence of the forest policy.

Conversely, the strategic importance of energy transition issues contributes to the state (re)gaining power over the forest sector. As a result of the European Climate change programme established by the EU to tackle climate change issues, the French government has put in place a range of domestic measures affecting the forest sector (Table 2). Through biomass energy programs implemented by both the Ministry of Ecology, Sustainable Development and Energy and the Commission for Energy Regulation (CRE) the state promotes a demand policy by taking action to support fuel wood consumers. The aim of this policy programme is to support development of bioenergy by promoting industrial investments in renewable heat generation (heat fund subsidies delivered by ADEME\textsuperscript{5}) and renewable electricity production (feed-in-tariff and invitation to tenders organized by the CRE). In line with the national forest policy goals, forest administrative bodies are now focusing on wood mobilisation activities. In particular, this strategy of (re)empowerment of the state in the forest sector has led to the implementation of Regional plans for wood mobilisation, as part of the Agricultural Modernisation Law (2010). These plans, supervised by the state, are designed to identify those areas most likely to benefit from forestry development and the provision of public funding. Similarly, in areas where biomass plants are financed by energy programs, regional wood energy observatories have been established to supervise competition for access to forest resources. Regional forest administrative services are in charge of these observatories, and are supposed to provide an opinion on wood supply plans submitted by energy firms to public authorities.

Nevertheless, the results of this biomass energy policy are rather mixed, and are already providing cause for concern. In a report published in 2013, the French Court of auditors assesses French renewable energy policy, focusing on its existing weaknesses (Cour des comptes, 2013). Among other topics, it underlines the fact that potential for growth in the promising biomass sector is limited by a lack of money allocated to the national “heat fund”, along with wood supply problems. While new biomass projects are flourishing, tension surrounding access to forest resources is increasing. The report also warned that this situation could lead to a greater use of imported wood. According to the Court of auditors, it is necessary not only to foster biomass investments\textsuperscript{6} but also to improve the control of supply plans associated with these projects, in order to prevent disruption to the local economy and local resources. In fact, recommendations made by regional wood energy observatory committees are sometimes ignored,\textsuperscript{7} and few resources are devoted to implementation of wood mobilisation plans. In other words, it seems that development of state authority in the forest sector is rather inconsistent. While state departments and agencies in charge of energy policy develop new forest-related competencies and implement several programs to stimulate fuelwood consumption, the forest administrative bodies in charge of forest resource management continue to lose power and authority in the forest sector.

We can conclude that this situation is the result of a new governmental strategy focused on demand-side policies (fuelwood consumption) rather than supply-side ones (forest management). This policy strategy is justified on the rational basis that the former will drive the latter, and that it requires less administrative resources than an active forest management policy. However, it also reveals the weakness of forest administration representatives, who, lacking a great deal of experience in politics, tend to see their influence on the forest policy-making process being diluted. While some of the most important forest-related policies are indeed designed by ADEME and CRE, it is clear that the power wielded by the state over forest policy has, at least in part, shifted more towards energy-related agencies.

3.4. Weaknesses and opportunities of forest sector mediations

The legal framework of state forest policy provides some advisory bodies, which are supposed to involve representatives of interest groups in the policy-making process. France’s Supreme Council of forestry, forest products and wood processing is supposed to take part in the definition, implementation and evaluation of national forest policy, under the authority of the Ministry for Agriculture. In 2007, this mediation arena was called upon by the Ministry of Agriculture to translate the Grenelle Environment Forum objectives into specific forest policy measures. This consultation resulted in the adoption of an action plan (20 concrete measures) few of which were actually implemented. For example, there were plans to provide funding for wood mobilisation of €100 million per year for five years, but this has yet to materialise. This lack of efficiency within the formal mediation arena contributes to the erosion of confidence in its legitimacy as this advisory body does not contribute to a better involvement of interest groups and non-state actors in the forest policy making process (Monin, 2003). For this reason, it is necessary to consider that interaction between stakeholders and authorities occurs not only in mediation arenas, but also as a result of a range of different mediation practices.

To meet the increasing demand for wood caused by growth in the biomass market, state authorities are increasingly urging forestry operators to intensify their harvesting activities. Ambitious wood volume targets have been set by the government, but not without opposition from a large number of parties. The lobbying carried out by most of the forest-related stakeholders concerns a lack of investment in the forest sector. In 2010, forestry operators (e.g. FNB\textsuperscript{8} and representatives of forestry contractors and nursery growers) produced a position paper\textsuperscript{9} on this issue, calling for modification of current forest management rules, along with policies to permit greater planting rather than relying on natural regeneration. On the other side, stakeholders in favour of non-productive uses of the forest (e.g. environmental NGOs) or productive uses geared more towards local market development (e.g. FNCOFOR\textsuperscript{10} but also environmental NGOs) argue that large-scale reliance on biomass will deprive users of small biomass boilers of their regular supply of fuel. They also claim that such a

\textsuperscript{4} Surveys conducted by Office Nationale de Forêts and Assemblée des Départements de France in 2008 and by Sergent in 2011 (results unpublished).

\textsuperscript{5} ADEME is the French Agency for the Environment and Energy.

\textsuperscript{6} The biomass sector, which is the more profitable in terms of policy investments, is considered a “leading sector” for heat generation. However, the court of auditors criticised the lack of accountability of policies promoting biomass projects dedicated mainly to electricity production.

\textsuperscript{7} For instance, the fourth invitation to tenders for biomass plants organised by the CRE in 2011 accepted all projects put forward, despite negative feedback received from some regional observatories.

\textsuperscript{8} FNB is the National Federation of Wood which gathers the professional organisation and unions of loggers and sawmills industries.

\textsuperscript{9} Position paper signed by GIE Semences Forestières, SNPF, Unea, FEDT, FNB entitled “De l’urgence de réinvestir la forêt. Une gestion de la forêt française en contradiction avec les objectifs du Grenelle de l’environnement, 2010.”

\textsuperscript{10} National federation of forest municipalities.
Table 2
French biomass energy policy goals, instruments and outcomes.

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<tr>
<td>Political decision-maker</td>
<td>National government and state administrations; Agency for the Environment and Energy Management (ADEME); Commission for Energy Regulation (CRE); Regional councils</td>
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<tr>
<td>Specific types of instruments utilized</td>
<td>Tax deductions (VAT on the sale of wood energy and heat, tax credit for individual heating equipment). Subsidies: ‘Heat Fund’ and investment grants. Since 2009, the ‘Heat Fund’ has supported development of renewable heat generation. Each year a national call for tender (BCIAT) is published by ADEME for large projects (&gt;1000 ktoe/year). Small projects (between 100 ktoe/year and 1000 ktoe/year) are managed on a regional basis. Feed-in-tariff and invitations to tender (organised by the Commission for Energy Regulation) for green electricity produced.</td>
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<tr>
<td>Outcomes</td>
<td>In 2011, biomass represented 50% of aid provided by the ‘Heat Fund’ but 85% of the toe produced (toe from biomass is funded around 500 €/toe from solar is funded around €11,000); 70–80% of the supply plans of these biomass projects mobilise wood chips. For the period 2009–2012, the ‘Heat fund’ selected 375 biomass projects (740 ktoe/year and 460,000 t of wood). In France, there is around 4400 wood fired boilers (1100 for industrial uses and 3300 for collective heating). Between 2005 and 2010, out of 4 invitations to tender published by the Commission for Energy Regulation (CRE), 88 cogeneration projects (1200 MWe) were selected. The average feed-in-tariff for these projects is around 120–140 €/MWh. In 2012 around 200 MWe biomass cogeneration were actually produced.</td>
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Policy is at odds with France’s commitment to protecting the environment. In another position paper published in 2010 on “Production, management and use of wood energy”, the environmental NGO France Nature Environment (FNE) promotes carbon storage in forests (rather than using it as a direct substitute for fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels) and advocates the use of wood materials (rather than fossil fuels).

In this context, the position of private forest owners is more ambiguous. Most of them are either not concerned by forestry issues (2.8 million of private forest owners have less than 4 ha), or more focused on hunting issues than on silvicultural activities or harvesting ones. They have adopted a wait-and-see approach for the possible increase in demand for fuel wood, considering that it could be a great opportunity if the market continues to grow. As one forest owner explained: “Wood energy, we cannot tell what it will be worth in 5–10 years, because for now we have no real price. We are happy to have another market opportunity, but it does not exist yet, it is just an idea at the moment”.

Besides these traditional forestry stakeholders, there are a number of other players in the renewable energy sector, many belonging to groups, such as the union of renewable energy sources (SER in French) which bring together 480 companies or associations involved in renewable energy. Forest biomass users belonging to these groups are more and more involved in political debate and mediation relationships in the forest sector. They are major economic players in the energy industry, and are lobbying government to allocate more resources to biomass energy policy. In a recent white paper, SER established a set of goals for the development of renewable energy, consistent with many of those defined at the 2007 Grenelle, and notably echoing the call for 17 Mtoe of wood based energy by 2020, thus creating around 15,000 new jobs (SER, 2012). However, they are still perceived as more of a threat to the sector than an opportunity because these objectives are considered too ambitious in relation to the means available. Many traditional wood-based industries — especially those producing panels and pulp wood — argue that competition with the renewable energy sector for raw materials is unfair because the latter receives much more public funding as a result of biomass energy policy. One industrial worker said “Wood energy is an administered economy. No unit is built without public spending. When in some cases the subsidy amounts to 80% of the investment, we are clearly in the distortion of competition with other uses. […] What we should not forget is that this installation is made possible by public subsidies. This is unfair”. Nevertheless, in many cases this position is rather ambiguous considering that pulp and paper industry is firmly involved in the energy sector through its cogeneration activities financed by public subsidies.

In short, mediation practices are characterised by a lack of congruence between the different strategies of forest owners, industrialists, energy companies, NGOs and forestry operators. Failure by these forest-related stakeholders to coordinate their actions means that they have little influence on developments in forest policy. Collective mobilisation and political work are mainly dedicated to the defence of particular professional interests, and the harvesting turn of the policy framework has made mediation relationships inside the forest sector far more confrontational. Overall, the forest sector seems to remain rather isolated from a political point of view. Trans-sectoral and sectoral mediation relationships are either very weak, or overwhelmingly dominated by a handful of major players (pulp and paper industry and energy companies).

However, this situation has recently started to change due to a process of institutionalisation of new mediation relationships. Two national professional organisations have been created to represent the interests of the various parties in the forest sector and the wood-based industry. The first one, called France Bois Forêt (FBF), includes public and private owners, forest managers, nursery growers, forestry operators, and representatives of FNB. The second, France Bois Industrie Entreprise (FBIE), counts among its members many representatives of wood-based industries (excluding Pulp and Paper and wood energy industries). At first glance, it would appear that there are still strong divisions of interest among the forest sector, even if new forms of mediation are becoming established. However, in the last two years, they have conducted common political work and developed new perspectives on development in the forest sector.

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11 Interview Private forest owner, 2012.

12 Interview Pulp and paper industrialist, 2012.
In 2012, FBF and FBIE drew up a common “Forest wood project for France” which includes a proposed funding programme for forest policy, financed through the awarding of carbon credits (derived from carbon quota auctions) to a Strategic forest carbon fund. In 2013, this project has been taken over by FNB, in association with FBF, SER and some representatives of wood energy and bio-chemicals industries, as part of their contribution to the national debate on energy transition.

Firstly, this project provides a basis for a new policy framework. It promotes a green economic model involving both the forest sector and the wood-based industry, taking into account not only the wood energy challenge, but also the carbon market opportunity for wood-based products and forest management activities. In fact, they argue that implementation of the forest wood project is the only way to reach the target of +5 Mtoe from wood energy by 2020. They show that the current wood energy policy should lead to an increase to only +2 Mtoe.

Secondly, FBF and FBIE are essentially asking the state to clarify its authority over the forest sector and the wood-based industry. The “forest wood project” also proposes the creation of a strategic committee (state – professional organisations) responsible for defining a national strategic vision, as well as calling for the nomination of an inter-ministerial delegate to oversee its implementation. This political work does not challenge the legitimacy of state authority. On the contrary, it aims to strengthen capacity of governmental bodies to oversee the whole forest sector and it urges the state to assume a real active role in the regulation of the sector (Majone, 1997).

Because the government has not, as yet, allocated credits to this funding programme, representatives of the forest sector appear to be left on the side-lines when it comes to debating transition issues. Nevertheless, this initiative illustrates that, in the context of energy transition, many stakeholders from the forest sector contribute actively to the political work. In addition to criticising the way forest-related issues are addressed by national authorities, they promote new governing practices and try to influence both policy outcomes and policy regime. We can conclude that in the context of energy transition, shifts in forest policy regime represent an iterative process of political change which is influenced by trans-sectoral policy, but is also, and more importantly, caused by the political work driven by actors involved in the forest sector.

4. Conclusion and policy implications

Defining governing methods for the implementation of energy transition goals is still a subject of political dispute in France. In 2013, the French government organised a national debate on energy transition, with the French President setting the objective of “making energy transition a lever for a new model of green, sustainable and inclusive growth”. However, in this article, we have shown that this issue is nothing new. Political changes in the forest sector as a result of energy transition issues can be tracked back as far as 2007. Analysis of changes to the forest policy regime reveals that politicaisation of energy transition issues in the context of Grenelle environment forum have led to changes in the forest policy framework. By promoting the harvesting turn in forest policy as a means of reaching national renewable energy targets, the government is essentially assuming that priority should be given to wood mobilisation, and that state authority needs to be strengthened in the field of biomass energy policy. Over the last 5 years, many efforts have been made to increase fuel wood consumption and biomass plant development, but nothing has really changed in forest policy to truly encourage wood producers to engage in large-scale supply of forest biomass.

We argue that this situation results not only from incoherence of transition policy, encouraged by an imbalance in the division of authorities between state administrative bodies, but also from a lack of institutionalisation of mediation relationships in the French forest sector, in a context where new stakeholders (i.e. players in the energy sector and climate policy) are challenging the identity of the sector. Representatives of forest owners, forestry operators and timber industry have long been embedded in a corporatist mediation pattern controlled by the state forest administration. For a very long time, forest policy has been rather conservative, or at least resistant to change. Now, the power of the state forest administration is decreasing, while forestry stakeholders face problems coordinating themselves and organising new mediation practices. At the same time, there is external pressure, from both the government and key players in the energy sector, to make changes to the French forest policy framework. Tensions arising from this changing framework are growing ever more prominent, and the government is faced with opposition coming from some industrialists and environmental NGOs to the implementation of its policy goals. Yet, in this context, some representatives of the forest sector grouped in professional organisations are neither passive actors in the face of a political shift nor systematically embedded in a process of path dependency. We have shown that they are currently trying to cooperate and develop mediation relationships in order to influence the content of the policy framework, and to clarify the distribution of state authority over the sector. In this way, two professional organisations are currently leading together a political work which contributes to widening the traditional boundaries of the forest sector so as to include wood-based industry related actors, issues and policies.

To end on a more general note, the evolution of the French forest sector illustrates how difficult it is to grasp all the political dimensions of the energy transition process. The intermediate concept of sector-based policy regime is relevant for that purpose, considering that it allows us to more closely analyse relationships between policy and politics. Managing policy change not only challenges power relationships, but also collective identities. It is through this approach that we argue that the sector is an appropriate space to study political work. On this basis, we came to the conclusion that the (re)institutionalisation of mediation relationships is a key governing issue of the policy-making process, associated with energy transition. Shifts in a sector policy regime are not only the results of a political process of translation of transition policy, but also the product of the internal political work relating to mediation relationships. These results confirm that energy transition is a policy problem for which political action takes place alongside state institutions and international treaties, thus challenging the rules and norms of the respective participants. Nevertheless, unlike Hajer (2003), we consider that this political process does not take place in an institutional void. Instead, we believe that sectors are institutional orders defining a framework for these kinds of political work and policy developments.

Consequently, in this article we emphasise that, when implementing energy transition policy, sectors remain relevant political spaces (1) to coherently match energy policy goals with sectoral policy means; (2) to legitimise the division of authority among institutions in charge of energy-related policy; and (3) to redefine appropriate and effective mediation relationships between public and private stakeholders around energy issues.

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