

RESEARCH ARTICLE

From inadvertent to reluctant pioneer? Climate strategies and policy style in France

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Abstract

To comply with the Kyoto Protocol, signatory nations have implemented a policy template of reducing greenhouse gas emissions mainly from the electricity generation and heavy industry sectors. This article shows how, in the case of France, a policy style based on ‘environmental meso-corporatism’ has largely exhausted this ‘standard recipe’. To consider how far France has developed fresh solutions, two phases of climate policy-making in the 2000s are analysed. Increased recourse to new environmental policy instruments is identified, but implemented through the institutional routines of ‘environmental meso-corporatism’. The article argues that although this policy style has proved relatively well adapted to regulating the technologies of production, it has little purchase on cultures of consumption within the residential and transport sectors. Faced with new challenges, policy-makers have proved better equipped to reform policy *content* than policy *style*. But France shows some reluctance to resolve the problem of limited policy reach.

Keywords: Climate policy; France; Kyoto protocol; Policy instruments; Policy style; Meso-corporatism

1. Introduction

The entry into force of the Kyoto Protocol on the 16 February 2005 focused minds on the institutional capacity of nation states to achieve greenhouse gas (GHG) reductions. To what extent would national traditions of public policy respond to new challenges? What new instruments of environmental governance are available, how effective are they, and do they pose problems for institutional ‘routines’?¹ In the current experimental phase, no definitive answers are possible but contributions to policy learning are nevertheless required. Taking the case of France, this article first considers the Kyoto compliance problem. Its second part reviews the climate change strategies produced by the Jospin government in 2000 and the Raffarin government in 2004. The third part analyses the main measures and instruments, discussing implications for national policy style and the scope for its renewal. The concluding sections probe the consequences and trace a transition from inadvertent to reluctant pioneer.

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2. The Kyoto compliance problem

At first glance France seems to have no Kyoto compliance problem, since its commitment is to cap GHG emissions at their 1990 levels in the 2008–2012 reference period (unlike Denmark, Germany and the UK, who must make major reductions). In 2002, France was considered to be on target by the European Environment Agency (EEA, 2004: p. 3), whereas nine members of EU-15 were not. Moreover, in the EU-25 France has the second lowest GHG emissions per unit of GDP (Sweden has least) and third lowest emissions per capita (EEA, 2004: pp. 9–10). Yet French policy-makers are aware that they risk an overshoot. The outlook on a business-as-usual scenario is to exceed targets by nearly 10% in 2010. Table 1 gives data on the evolution of CO₂ emissions in France.

Table 1. French CO₂ emissions after implementation of the 2004 Climate Plan

Sectors	Millions of tonnes CO ₂				
	1990	2002	2010 Projection for 'business-as- usual'	2010/1990 (%)	2010 Projection with new measures
Transport	121.5	149.5	175.1	44.10	154.8
Residential	89.5	97.4	116.6	30.30	99.9
Industry	141.2	115	118.3	-16.20	107.3
Energy	80.6	68.6	87.8	8.90	71
Agriculture and forests	116.1	108.6	108.1	-6.90	105.7
Waste	15.9	14.7	13	-18.20	12.5
Total France	564.7	553.9	618.9	9.60	550.8
Other state measures					-0.4
Carbon sinks					-3.2
JI, CDM					-1
Kyoto total					546.6

Source: MEDD (2004a).

How should France solve the compliance problem? The logical response is to reduce emissions in the sectors where they are greatest, and where it is easiest and cheapest. Applying this perspective to the European level (see Table 2), the 'standard recipe' has been to cut emissions in the energy and industry sectors – and especially in electricity generation – by fuel switching away from carbon-rich sources (such as coal), to low-carbon (gas) or zero-carbon sources (renewables), by

Table 2. Sources of GHG emissions in the EU in 1999 (%)

Electricity generation	26
Industry	21
Transport	21
Agriculture	10
Waste	3
Others	17

Source: Rossetti di Valdalbero (2002).

increased energy efficiency and by industrial restructuring. This policy template was summarized by the EEA (2004: p. 12) as follows:

The emission reductions in the early 1990s were largely a result of increasing efficiency in power and heating plants, the economic restructuring in the five new federal states in Germany, the liberalization of the energy market and subsequent changes in the choice of fuel used in electricity production from oil and coal to gas in the United Kingdom and significant reductions in nitrous oxide emissions in the chemical industry in France, Germany and the United Kingdom.²

Applying this policy template, most European states are seeking large emissions reductions from electricity generation. But this option is not available to France. There the electricity sector was revolutionized in the 1960s and 1970s by the expansion of first hydro and then nuclear power. These two sources account for nearly 90% of French electricity sourcing and are virtually carbon-free at the point of generation. In consequence, the ‘carbon intensity’ of the French electricity sector is a fraction of that of comparable countries (see Table 3). As a proportion of national GHG emissions, electricity generation accounts for 8% in France, 36% in Germany and 40% in the USA (MEDD, 2004a). Thus France can be characterized as an ‘inadvertent pioneer’ as regards the *outcome* of achieving major emissions cuts in the energy sector, since that result was unplanned and involved the controversial means of nuclear power.

Table 3. Tonnes of CO₂ per capita released from the electricity sector

USA	7.94
Germany	3.67
UK	2.79
Italy	2.28
France	0.44

Source: MEDD (2004a) based on IEA figures.

The record of French industry is also relatively good. Between 1990 and 2000, GDP *grew* by 19% but industrial emissions of CO₂ *fell* by 2%, indicating considerable ‘decoupling’ in terms of carbon intensity: this was achieved by fuel-switching from oil and coal to gas and electricity (Baulinet, 2002). Even on a ‘business-as-usual’ scenario, industrial emissions in 2010 are expected to fall by 16% in relation to 1990.

These outcomes demonstrate that French policy style has enjoyed a degree of success, but also point to its limits. France is an example of the ‘public administration approach’ characterized by Leroy and Nelissen (2002) as a policy style in which ‘environmental problems are defined mainly in scientific terms, the government being regarded as the central regulating body, and in which research is chiefly related to the managerial capacities of government’. As regards its *modus operandi*, the French policy style can be characterized as ‘environmental meso-corporatism’,³ by which is understood the ring-fencing of a policy domain, the emergence of organized producer interests entrusted with its stewardship, and the establishment of public institutions exercising oversight.⁴ Within these institutional arrangements the reality of the bilateral meso-corporatist bargain has often been disguised by the appearance of unilateral state intervention, manifested in so-called ‘command and control’ regulation.

In France, a ‘dual policy style’ arises from the combination of ‘heroic’ state-centred flourishes and ‘humdrum’ incrementalism, based on an evolving set of deals negotiated between the public and private actors.⁵

This policy style left its imprint on the domain of air pollution control in the 1970s and 1980s.⁶ In relation to GHG emissions it was renewed in the 1990s by ‘voluntary agreements’ (VAs), signed with the steel, glass, cement and plaster industries, targeting GHG cuts of between 5% and 10% compared to the 1990 baseline (MATE, 1999). A separate agreement was concluded with Péciney, the aluminium giant, to reduce emissions by 19%, and the oil company Elf unilaterally promised a 15% cut. Major energy consumers such as Ciments Français and Lafarge (cement), Rhodia (chemicals), Saint-Gobain (glass) and Usinor (steel) also made individual commitments to cut emissions. However, by the turn of the century, new challenges were arising, given that in France both the ‘traditional’ policy style and the ‘standard recipe’ for CO₂ containment were reaching their limits. So how far has France developed fresh solutions, such as new environmental policy instruments (NEPIs)? To consider this question, two phases of climate policy in the 2000s will be analysed.

3. French climate policies: towards new solutions?

3.1. The 2000 Climate Plan

The year 2000 Climate Plan prepared by the left-wing Jospin government envisaged a Kyoto overshoot of some 25% (French Government, 2000: p. 29). Three categories of preventive measures were drawn up: (1) emissions trading and VAs, (2) a carbon tax, and (3) energy efficiency plus use of renewables. Pressing for domestic GHG cuts, ‘Green’ Environment Minister Dominique Voynet resisted the use of ‘carbon sinks’ at the year 2000 COP-6 discussion, where she led the European delegation (MATE, 2000). However, neither the COP-6 negotiations nor the ecotax – called ‘TGAP-Energie’ – proved successful. In December 2000, the Conseil Constitutionnel struck down the TGAP-Energie as unconstitutional, since it failed to respect the principle of equality in taxation. The court ruled that in its proposed form the tax discriminated among different categories of energy consumer, leading to the perverse outcome that lower levels of consumption would incur higher levels of tax.⁷ The ruling seriously dented the Jospin government’s climate change policy.⁸

3.2. The 2004 Climate Plan

When the right-wing Raffarin government came into office in 2002 the risk of an emissions overshoot remained, and it stigmatized its predecessor’s policies as a failure. Though repeatedly promised, its own strategy took two years to materialize. Meanwhile, it was discovered that the French GHG accountancy system did not conform to the 1992 United Nations Framework Convention on Climate Change (UNFCCC). It had to be updated to redistribute emissions in relation to sources (notably energy, waste and buildings) and to include previously omitted emissions from the oil refinery sector. Despite recalculation, the overshoot projected in 2004 was still lower than in 2000 at around 10% (see Table 1). The priority was to make CO₂ savings of around 54 million tonnes per year to 2010, with the long-term goal of reducing emissions by 75% by 2050. The French government committed itself to the view that a mean global warming of greater than 2°C above the pre-industrial level constitutes ‘dangerous climate change’ (MEDD, 2004a).⁹ Crucially, the need to go beyond the ‘standard recipe’ involved a reappraisal of policy instruments.

4. Policy reform and NEPIs

4.1. *Ecotaxation*

In 2002 the mood *against* ecotaxation on industry was strong, partly on political and partly on economic grounds. Ecotaxation had become associated with ‘Red–Green’ coalitions in France and Germany, from which the right-wing Raffarin government wished to distance itself. Government was receptive to the economic arguments of industry. The official view was that ‘we have to persuade rather than force companies, otherwise we risk undermining their competitiveness’ (Baulinet, 2002). The ‘rational actor’ argument made by industrialists is that the massive fuel bill of energy-intensive firms offers sufficient incentive to maximize energy efficiency without the burden of new taxes. On this view, ecotaxation is taken as crippling in economic terms and ineffective in environmental terms, since it delivers no supplementary benefits – a double whammy rather than a double dividend.¹⁰ This explains the lack of political will during 2002–2004 to revive ecotaxation. Also, there was hardly any mention in the 2004 strategy of the Kyoto ‘flexible mechanisms’ which allow for GHG mitigation beyond national boundaries. This left the policy ‘toolbox’ curiously bare.

4.2. *Emissions trading*

The remaining alternative was either more VAs or emissions trading, both of which relate exclusively to major industrial actors. Regarding the criteria for instrument selection, Baulinet (2002) rehearsed the traditional French view in stressing the need to ‘provide incentives rather than punishment’. Emissions trading won out in 2004/2005 because it uses both the carrot and the stick – and because the EU strenuously backed it.

Although during early climate policy negotiations US proposals for emissions trading were resisted by the EU, ironically the EU moved first to implementation of a scheme.¹¹ Given the failure to set up a European carbon tax,¹² the Commission was keen to find an alternative. Emissions trading for large-scale emitters became the instrument of choice due to the perception that it offered greater certainty of outcomes, greater flexibility and lower costs. These advantages had the potential to overcome industry resistance. The Commission launched a proposal for carbon trading in October 2001, which led to directive 2003/87/CE of 13 October 2003 creating the EU Emissions Trading Scheme. The directive set tight deadlines: transposition of the directive into national legislation by 31 December 2003, with ‘national allocation plans’ (NAPs) to be approved by the Commission during 2004, enabling trading to start on 1 January 2005. It established a European framework for carbon trading for the period 2005–2007, with the prospect of an opening up to international markets thereafter. Targeting the highest industrial emitters of CO₂ (notably in the energy, steel, cement, glass and paper sectors), it has a mandatory basis. Some 12,000 factories across Europe are included, producing 45% of industrial emissions. Their carbon emissions are capped to help attain reductions consistent with the 1997 Kyoto Protocol and the 1998 EU ‘burden sharing’ agreement. The scheme is based almost entirely on the ‘grandfathering’ principle: instead of auctioning quotas, allocations to firms are made by governments calculated on historical emissions and are distributed gratis. Companies who reduce their emissions below quota can sell the balance to under-performers. However, a peculiarity of the scheme was that caps were unspecified at the European level, leaving their setting to national level negotiations. This appears to be a consequence

of the EU ‘burden sharing’ agreement: with Member States having ‘differentiated responsibilities’, the setting of a single cap is inappropriate. Also, industry structures and performance vary considerably across Europe. Given these features, it is unclear how the new market can produce a ‘level playing field’. The potential exists for gaming behaviour, given the progressive impact of carbon costs on profitability.¹³

Although in France emissions trading was treated with suspicion during the 1990s,¹⁴ its implementation followed time-honoured institutional routines. The French NAP was drawn up by ADEME (the Energy Efficiency Agency). Audit of carbon accounts is undertaken by consultancy firms, but their accuracy is ‘policed’ by the ‘Inspection des Installations classées’ (Licensed Sites Inspectorate), supervised by the Environment Ministry. The ‘Caisse des Dépôts et des Consignations’ (a state-owned organization) keeps a register of emissions, whilst the fine for exceeding quotas was set at €40 per tonne of CO₂ (Environment Magazine, 2004). In effect, the authorities had once again ring-fenced a meso-corporatist domain within which negotiation is undertaken between industry representatives and public officials. Although organized producer interests are entrusted with the running of operations, public institutions exercise oversight by setting targets, and are vested with the last resort of applying sanctions. In contrast to ‘command and control’ regulation, firms exercise choice over compliance pathways – performance improvements, quota trades or payment of fines. Nevertheless, the prerogative to set caps reinstates the authority of the central state as key arbiter. Thus ‘cap and trade’ procedures have not overturned French institutional routines but fit snugly with ‘environmental meso-corporatism’.

As regards content, the French NAP took into account both the scope for emissions cuts and predictions for industrial expansion. Although the core feature of a ‘cap and trade’ system is the setting of maximum emissions at levels lower than on trend, the choice of ceiling was characterized by a purely technical commentary and lack of ambition regarding emission cuts. The plan proved opaque, with estimates of emissions and quotas revised at several points for unspecified reasons, but presumably in response to negotiatory pressures. In the July 2004 version, the NAP targeted eight industrial sectors, to include 700 factories responsible for one-fifth of relevant French emissions. For 2005, it made an aggregate allocation corresponding to 115.78 million tonnes of CO₂ of which 55.53 Mt related to industry and 60.25 Mt to the energy sector, plus a ‘growth reserve’ of 9.42 Mt per year, making 125.2 Mt in all, as against a business-as-usual scenario of over 128 Mt (MEDD, 2004b).

When NAPs went before the European Commission during 2004, criticisms of over-allocation were made in a number of cases. The French NAP received only qualified approval in October, with conditions placed to reduce the ‘growth reserves’ to 1.5 Mt per year, and to add in categories of establishment present in other NAPs, such as combustion plants above 20 MW capacity (EurActiv, 2004). This resulted in the number of plants targeted increasing to some 1400. The revised version was approved by Brussels on 17 December 2004. In the draft of the January 2005 decree (MEDD, 2005), quotas were set at 59.67 Mt CO₂ for industry and 66.62 Mt for the energy sector; a total of 126.29 Mt. However, the recalibrations made it hard to see what the cap is in relation to previous levels of emissions.

These developments raise important issues. Has the French NAP over- or under-allocated quotas? What will be the effects on the price of emissions trades, and on the actual emissions of the various industries targeted? Answers to these questions cannot be given until the scheme has been run in and its performance assessed. However, an interim conclusion is that not only the design of the emissions trading scheme but also its operational choices require scrutiny.

4.3. Energy policy measures

Energy policy is at the core of climate strategies. In France, it currently has three main strands: renewal of the nuclear option, energy efficiency, and renewable energy sources.

In his 2002 presidential campaign, Jacques Chirac promised the energy debate that the French electorate had not seen in three decades of pro-nuclear policy. Over 2003, the Raffarin government duly organized a ‘national energy debate’, with the aim of feeding into new legislation. From the debate, the government drew the predictable (and predicted) conclusion that France needed to extend the life of its nuclear power stations and build a new generation. It was argued that a prototype of the ‘third generation’ of nuclear reactors must be *working* by 2010. This argument generated a sense of urgency, leading in 2004 to a decision enshrined in the early draft of a new Energy Act to construct a demonstrator plant. The ‘third generation’ refers to the European Pressurized Reactor (EPR), a design stemming from 1989 developed by the Framatome–Siemens partnership. Its proponents, such as Anne Lauvergeon (CEO of Areva, which builds nuclear plants), claimed that compared to current reactors the EPR is safer, electricity is 10% cheaper, and 15% less radioactive waste is produced. Like other members of the nuclear lobby, she placed heavy emphasis on nuclear-sourced electricity as being essential to meet GHG targets.

Turning to energy efficiency, one of the core aims of the new Energy Act is to reduce energy intensity by 2% per year to 2015. This ‘decoupling’ reduces environmental pressures in general, with the potential to cut GHG emissions. Policy measures included tax rebates to households of 40% for purchase of solar-heated water installations and 25% for insulation, double-glazing and high-efficiency boilers. The energy efficiency labelling scheme (the well-known A–F scale found on household appliances) was to be extended to air-conditioning units, boilers, cars and even houses. ‘Energy savings certificates’ were proposed, aimed at improving the thermal performance of buildings. In principle, a market for these certificates will be created.

Measures based on renewables include an increase in electricity generation from wind and biogas, an increase in heat production from biomass, and an expansion in energy crops for transport. The envisaged emissions reductions total 9 Mt CO₂. Directive 2001/77/EC set targets for electricity generation from renewables for each Member State. For France, the 2010 target is 21% (up from 15%). Most of this is budgeted to come from wind power, with estimates of required capacity varying considerably. A parliamentary report predicted 7000–14,000 MW of wind capacity (Birraux and Le Déaut, 2001: p. 268), but more recent government estimates are around 6000 MW. This still represents a massive increase in capacity, which stood at 239 MW in 2003. An ambitious programme of expansion was outlined in the year 2000 Electricity Bill, followed by the ‘Cochet decree’ of 2001 (named after the ‘Green’ Environment Minister). The decree established a renewable energy ‘feed-in tariff’ (REFIT), guaranteeing kilowatt-hour prices to targeted suppliers.¹⁵ Modelled on the German Renewable Energy Sources Act of 2000, it offered stepped and degressive rates that are location- and time-specific, compensating for wind regimes and improvements in turbine technology. These factors promote dispersal of wind farms (rather than concentration at the windiest sites) and address the issue of excess profits, aiming to set tariffs at ‘fair and efficient’ levels (Chabot, 2000, 2001). The REFIT support mechanism was a major cause of the dramatic expansion of wind power in Denmark, Germany and Spain, and was expected to have similar consequences in France. In practice, wind power aroused controversy. At local levels, considerable opposition to planning proposals arose from anti-wind groups. At the national level, the nuclear lobby ridiculed wind power as puny, unreliable and irrelevant to both GHG arguments and ‘bulk power’ needs. In

the pro-nuclear context of the 2004 Energy Act, renewables enthusiasts feared that the ‘Cochet decree’ would be repealed by a Raffarin government bent on sweeping away the Jospin legacy. This did not happen due to commitment to directive 2001/77/EC (enacted under a French presidency) and because of pressures to develop climate policy proposals. Indeed the government took additional measures, putting out a call to tender for large onshore and offshore wind farms, but inviting lower prices than set by the REFIT. In combination, these measures put France on course for an increase in wind power capacity in relative terms (from a very low base), but in absolute terms is unlikely to meet the 2010 targets. This casts doubt over planned emissions cuts by 5 Mt CO₂ (MEDD, 2004a). The political problem for wind power in France is that it goes against the grain of national electricity sourcing traditions. The ‘meso-corporatist’ compact made by government with giant, state-affiliated nuclear industries (EdF, Areva) leaves little room for new entrants, even in the context of pan-European electricity market liberalization.

With energy crops the picture is markedly different. Here new developments do not challenge the traditional policy style. The French agricultural sector is highly corporatist, with the farmers’ lobby being disproportionately influential. CAP reform and increased intra-European and global competition have sparked a crisis for French farmers. The production of biofuels provides a golden opportunity to renew the Gaullist policy tradition of subsidizing intensive agriculture and moving towards ‘national independence’. The planned expansion in biofuel production was significant, going from some 300,000 to 1,000,000 ha of land, creating four factories and 6000 jobs. However, the objective of substituting 5.75% of vehicle fuels by the year 2010 merely conformed to the target contained in European directive 2003/30/CE on energy crops.¹⁶ The lack of ambition reflected tensions with environmentalists, who criticize intensive agriculture; with the refinery sector, where there is over-capacity in petrol production; and with the Economy Ministry over tax breaks to improve competitiveness.

5. Challenges to the national policy style

Because industry is one of the few sectors to register GHG *reductions*, it has carried a disproportionate share of the national burden. Meanwhile, the residential sector, services and especially transport are responsible for major *increases* in emissions. Households are credited with half of total GHG emissions (MEDD, 2004a). If Kyoto targets are to be met (and in time exceeded), measures to reduce emissions by the public are essential in transport and housing. Yet in these areas the ‘traditional’ policy style has little purchase. Innovation is required both in terms of measures and arguably in terms of style, but French policy-makers have been slow to recognize the challenge.

Reluctance is evident in relation both towards adopting instruments invented elsewhere and pioneering through home-grown solutions. Thus France waited for a European framework before attempting emissions trading, whereas the UK experimented with its own scheme. Moreover, precisely because of a low level of carbon intensity, France needs to make a policy breakthrough in domains beyond the familiar perimeter of industrial emissions reduction. To be fair, in relation to the ‘consumer lifestyle’ problem posed by emissions from housing and transport, policy-makers in all developed countries are stumbling in their search to find medium- to long-term solutions. Neither in the nature of the problem nor in their hesitations are the French unique. Ironically, because of success in cutting emissions from the energy and industry sectors, France faces ‘consumer

lifestyle' issues a little earlier and a little more acutely than neighbouring countries. Hence the question is whether France has no choice other than to pioneer.

Road transport emissions registered an unsustainable level of increase of 21% between 1990 and 2002. In 2003 there was a small reduction in fuel consumption and emissions due to a decline in average speeds of vehicles. This was attributed to better compliance with speed limits as a result of road safety initiatives (MEDD, 2004a). But calls to impose lower speed limits on motorways were ignored. Neither did the Raffarin administration impose extra levies on fuel, given their unpopularity in 2000 when lorry drivers blockaded cities and ports. Instead it proposed to mould purchasing preferences by the so-called 'Bonus–Malus CO₂', a scheme giving a tax 'bonus' to low-emitting vehicles. But this attempted innovation was put on hold, pending approval at the EU level. Measures to encourage 'modal shift' – away from road and towards other forms of transportation – remained modest.¹⁷

A €3-million national publicity campaign of awareness-raising was proposed to convince the public to take global warming seriously and encourage behavioural change. Here problematic issues arise over the relationships between cognitive awareness and consumer habits. For example, many people heat their houses to temperatures above 20°C, when 19°C is recommended as sufficient. Each degree reduction corresponds to a 7% saving on the heating bill. However, households not confronted with fuel poverty usually prefer to pay more for extra comfort, especially where children or old people are concerned.

Encouraging changes in consumer behaviour, as distinct from industrial behaviour, will require a different order of policy analysis and political engagement. Modifications in industrial behaviour are predicated mainly on technological fixes and market mechanisms, both of which are subtended by 'rational actor', profit-maximization cognitive frames. But in the societal domain cognitive frames are different and diverse. Firstly, choices are limited by material necessity and upstream formatting, such as infrastructural considerations. For example, *individual* households exercise a circumscribed choice between types of heating and fuel, given the sunk costs of existing systems. But *collective* decision making is required for implementation of promising innovations such as district heating, including reform of urban planning. Secondly, consumer behaviour embodies a range of non-economic motivations, encompassing values, beliefs and goals which translate into 'lifestyle'. These considerations raise difficult questions about how to steer the economy and society towards sustainable patterns of production and consumption. If Prime Minister Raffarin's (2004) claim that France is moving from 'an era of pioneer initiatives to an era of national ambition' is to be more than a mere boast, new patterns of governance will be required.

6. Conclusions

To date, climate policy steer in industrialized countries has come from a 'technocentric' approach. This is especially true of the French situation, though not uniquely so. As a generalization, the 'technocentric' approach seeks out the resource-utilization pathways that provide maximum economic growth (which also stands as proxy for social welfare). Where contextual or environmental obstacles arise, the internal logic of 'technocentrism' is to improve the technologies of production, rather than reform the cultures of consumption. The French 'meso-corporatist' policy style is consistent with this approach, since it provides arenas where public officials (vested with democratic

legitimacy) can engage industrial firms (vested with expertise) in collective problem-solving, with the emphasis on technical, ‘supply-side’ solutions.

Due to the successes of this model, the temptation exists to extend its application each time a new problem arises. Success is then dependent on the ‘fit’ between the problem and the institutional style. In the energy and industry sectors, French policy style has displayed a good ‘fit’, delivering gradual but significant improvements in atmospheric emissions over several decades. For the future, emissions trading and energy crops are (potentially at least) a good ‘fit’. On the other hand, transport and the residential sector have so far proved examples of a bad ‘fit’. The explanation for this arises from the nature of the domain in question and from the policy style’s grip upon it. This grip is relatively high in relation to technologies of production (involving industrial output and agricultural produce), but low in relation to the cultures of consumption (individual preferences regarding homes and cars). The challenge of climate change – and of the ‘sustainability transition’ in general – is to evolve from fixation on the former to integration of the latter. The dilemma for French policy making is that the meso-corporatist policy paradigm cannot be abandoned whilst it pays dividends – but the stock of ‘low-hanging fruit’ is running low. New reserves of institutional means and political will, as well as new types of civil society engagement, have to be marshalled in relation to consumer behaviour. Faced with bigger challenges, policy-makers are recognizing the need to innovate but have proved better equipped to reform policy *content* rather than policy *style*. Because of this limited policy reach, France is transforming only from inadvertent to reluctant pioneer.

Notes

- 1 For theoretical discussions of new policy instruments, see Jordan et al. (2003) and Bailey and Rupp (2004).
- 2 For discussions, see Collier (1997) on the UK and Michaelowa (2003) on Germany.
- 3 In ‘meso-corporatism’, interests are aggregated at the sectoral level (namely industrial branches such as chemicals, cement etc.), with interest-group representatives and state officials engaging in *bipartite* policy discussions (see Cawson, 1986: pp. 106–118).
- 4 This analysis is developed in Szarka (2000) and Szarka (2002: pp. 132–139, 146–165).
- 5 For the origins of the ‘dual policy style’, see Hayward (1982) and for its application to environmental policy, see Szarka (2003).
- 6 See Knoepfel (1998).
- 7 For a discussion, see Deroubaix and Lévêque (2006).
- 8 It also indicated how similar NEPIs can experience different fates. The comparable design of the UK ‘Climate Change Levy’ did not prevent it from passing into the statute book (see OECD, 2002: p. 148; Dresner et al., 2006).
- 9 Although article 2 of the UNFCCC states the objective of preventing ‘dangerous anthropogenic interference with the climate system’, the definition of the latter has remained elusive. The ‘+2 degrees C.’ metric is now increasingly invoked. See for example International Climate Change Taskforce (2005). For a more comprehensive survey of pathways to danger, see European Climate Change Forum / Potsdam Institute for Climate Impact Research (2004).
- 10 The prevalence of this argument in European industrial circles is demonstrated in the PETRAS project, for example see Beuermann and Santarius (2006).
- 11 For a discussion of the EU’s ‘U-turn’, see Christiansen and Wettestad (2002).
- 12 See Zito (2000).
- 13 Prices of quotas traded rose from €7 to nearly €30 per tonne of CO₂ between March and July 2005.
- 14 See Godard (2001).
- 15 The headline (but reducing) rate was set at 8.38 eurocents per kilowatt-hour.
- 16 The target date was brought forward to 2008 in November 2005.
- 17 For a discussion, see Szarka (2004).

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