The Disembeddedness of Environmental Integration Policy—Bioethanol as a Liquid Fuel: A case study from Europe's semi-periphery

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"The Disembeddedness of Environmental Integration Policy– Bioethanol as a Liquid Fuel: A case study from Europe's semi-periphery"

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Abstract

European Union initiatives and funding have been acknowledged as all-important factors in bringing about closer co-operation and indeed integration of Europe's regions. This is true of environmental issues and concerns too. However, the impact they exert on European locales is far from being uniform in terms of concrete policies and results. Instead, substantial variance is observed that cannot be properly grasped unless we come to a better understanding of its origin in particular constituent societies and in local arrangements. It would also seem relevant to scrutinising the western-centric character of certain key assumptions underlying the premises of EU initiatives (e.g. those attributed to the market). What interest me is to look beyond the façade of attempted or existing near-uniformity of institutional determinants in EU member countries. Instead, to concentrate on the embeddedness of environment related decision-making processes policy and in specific socio-cultural and political contexts and practices. I will attempt to do so by focusing on a particular EU region that I take as a case study, i.e. Greece. Specifically, I intend to explore how the prospect of introducing bioethanol as an environmentally friendly liquid fuel has been halted. My answer will bring out the importance of socio-political arrangements and processes. These may not be unique from an organisational point of view, but are embedded in a particular and constraining social context that leads official agents entitled and empowered to promote environmental issues abstractly and in general to actively work against them, in the concrete. Lastly, I will touch on the importance of the conjuncture to return to the underlying question about the possibility and the limits of comparative study.

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Introduction

The problem upon which I wish to focus in the relation between environmental protection and socio-economic development is this: On the one hand, the demand for environmental protection, which promotes the public character of certain goods, has, both, transformed and shaped subjectivity. In other words, it operates like an ideology. In fact, today, this demand is widely accepted, at least on the surface. On the other hand, it has not transformed, in the direction of either a unitary or a general way, the aspiration for immediate and private (in the sense of a limited to a small number of people) gains. Thus, as such aspirations have not been satisfied or achieved, they may be assumed to remain in force.

Therefore, when the two ingredients of the relation under examination, namely that of environment and development, follow diverging trajectories as they compete to draw from the same limited resources or when the development of the one factor in some way delimits the other, then collusion crops up. In such instances, the situation is clear because the contradictions are explicit.

In this paper I intend to discuss the case of bioethanol. During the last eighteen or so years this particular substance has been proposed and promoted as a liquid fuel. The rationale underlying such suggestions has been that bioethanol has been "discovered" to combine the element of environmental protection, in the sense of promoting it, to that of socio-economic development. Accordingly, its promotion has been seen to promote what has been termed "sustained development", which refers to coping with the needs of the present without restricting the capacity of the future generations to respond to their own needs (Brundtland Commission, as quoted in Cunningham and Saigo 1997: 15).

I will briefly refer now to certain features of bioethanol and to its re-invention as a liquid fuel. Following this I will take a look at the interest expressed about this particular substance in Greece and I shall attempt to show which organisational form this interest assumed. Furthermore, I shall attempt to show how the conjuncture and the time factor (or timing) conduced in the creation of opportunities, but at the same time creed obstacles, overall circumscribed the framework within which the concerned agents attempted and failed, so far, to introduce bioethanol as "green" fuel. Overall, I am interested to bring to attention the following point. Although a list of factors have conduced to the contradictory character of the relation environmental protection-development, the ones that in this particular case plays, so to speak, the decisive role are the relations that the persons concerned, groups and organisations form and the degree of trust that characterises them. It is to this element that the problem situation of bioethanol is focused upon and not upon the economic viability of this enterprise, which I considered as a given.

1. Basic Characteristics of Bioethanol

Ethanol, or ethyl alcohol, are different appellations for a widely available product that is more commonly named spirit or alcohol (the Arabic word for spirit). Presently the interest lies with bio-ethanol, namely ethanol that is produced-extracted from a varied range of agricultural raw materials. These possess a substantial sugar ingredient as in the case of molasses, wine, beat-roots, sugar cane, raisins, plums, dates, bananas, etc., but also include serials whose starch may be transformed into sugars, such as corn, wheat, rice or potatoes, as

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1 According to a more inclusive definition, sustainable development refers to the "substantial increase of the welfare and level of living for the [statistical] average person, which may be retained for a long period without impairing the environment or delimiting the capacity of future generations to meet their own needs" (Cunningham and Saigo 1997: 622).
well as various celluloid-based raw materials, e.g. wood and straw (Boukis 1991, ACE 1997).
All these are raw materials that in a natural way are renewable. Several of them are available
in substantial quantities while the celluloid-based ones are available in practically
inexhaustible quantities. This is a very important characteristic because it exactly
corresponds to the sustainability demand.

From bioethanol a substance known as ETBE (ethyl tertiary-butyl ether) may be
extracted, which is used as a gasoline additive. Both bioethanol and ETBE because of their
substantial oxygen content (35% per volume, hence they are called "oxygenates") have the
attribute, when blended with gasoline by 10% to substantially "raise" the octane output of
the fuel (McMillan 1997). Of course, it is this attribute that also defines the market for fuel
uses of ethanol and its derivatives. In addition, both bioethanol and ETBE, in blends as low
as the one just mentioned have the capacity to substantially reduce the production of
pollutants from fuel burning. Thus, they exert a benign effect on the environment. In
any case, the reduction of pollutants is substantially lower when compared with the various
improved conventional liquid fuels, but also in comparison with other renewable liquid
fuels. In this sense, bioethanol and its usage is not simply a renewable fuel, but it is also one
in which the designation "environmental-friendly" is an accurate and true one.

2. The Re-discovery of Bioethanol
The use of the particular substance is not new. The first automobiles used alcohol as fuel.
However, the low price of fossil liquid fuels (e.g. gasoline) drove alcohol out of the fuel
market – its production cost is comparatively high. Thus, until the mid-late 1970s bioethanol
was used sparingly and appears only in extraordinary circumstances. For example, the
retreating German troops in 1942 in Northern Africa distilled wines to use the outcome as
liquid fuel in their vehicles. It was only after the second petrol crisis in the mid-1970s that
the interest in bioethanol as an economically viable liquid fuel alternative for motor vehicles
was renewed (European Commission 1987, KAPE 1996a).

Today, after some hesitation (for example see, European Commission 1987), the use
of bioethanol as fuel has spread and is now seen positively. Brazil is in the vanguard of those
using fuel ethanol. That country covers about 60% of her liquid fuels needs from it
(Vallianatos-Pellegrini 1993α, 1993β, Rask 1994, 1995). It is followed by the USA, in which
a reported 8-9% of consumed gasoline incorporates a 10% ethanol (or ETBE) ingredient;
Canada follows behind (Berg 1998).

In Europe, the leader is France, in whom sugar-beats and whet are the main raw
materials, and then Sweden that uses leftovers from wood processing (SSEU, various issues).
In addition, Spain and Italy have been involved with large-scale experimentation projects.
(ADECA 1998:6).

One should note that although the "U"-turn in the use of bioethanol is rooted in the
above-mentioned rise in the price of petrol, it is not exhausted in it. Beyond the desire to

2 To be precise, in blends with a 10% ethanol ingredient substantial reduction in the emission of
Carbon Monoxide (CO) is observed; it ranges from 25-40 % (Less Pollution 1996). With respect to
Carbon Dioxide (CO2), its release during the burning of fuel ethanol is reduced by 50-70% when
compared with conventional fuels including the so-called reformulated ones. One may keep in mind
that the released CO2 is fully recycled in organic matter in the course of the development of the plants
that are used as raw materials for the production of bioethanol. In fact, the energy balance of ethanol is
positive (Bio-refinery Energy Balance 1988, European Commission 1997:19, Lorentz and Morris
1995). A third worth-mentioning element concerns the ozone releases; they show a clear reduction. I
should add that the features and evidence just presented are the outcome of repeated measurements and
from a technical point of view are considered undisputed and valid (see ADEME 1993: 28, ADEME
conserve on precious foreign currency, governments have other reasons to support the introductions of ethanol as a fuel. The following are pertinent:
(a) The need to reduce dependency from foreign sources of liquid, non-renewable fuels,
(b) the environmental pollution problem and the introduction of a legal framework that attempts to delimit pollution created by automobiles. In this respect the contemplated introduction of a CO₂ environmental tax in the European Union, is quite relevant. The Scrivener directive for the de-taxation of bio-fuels has undertaken the role of the level in this affair,
(c) lastly, an additional reason is the crisis in the agricultural economy and the (political) need to maintain the income of certain categories of cultivators as well as keeping them in employment.

3. Bioethanol in Greece during the last decade.
During the last thirteen or so years, an interest in bioethanol as fuel surfaced in Greece. A series of studies were conducted aiming to explore the fuel attributes of that product and to find out how it has been applied in other countries. At the same time, the features of the foremost candidate region for the development of alternative energy crops, namely of Thrace in north-eastern Greece were explored, but also other areas were studied on their suitability for introducing the cultivation of energy crops. The assessment of Trace's potentiality was very positive and it was declared that such cultivations would have a benign effect on the region and beyond it (KAPE 1992).

One should also mention that a series of experiments and lab comparative assessments took place that dealt with, both, the treatment and output of several different raw materials in ethyl alcohol, and with the energy output and pollutant emissions of different blends of ethanol-gasoline. Furthermore, a number of experimental cultivations did take place in different parts of the country for the purposes of studying the cultivation-related problems and to measure the output of several different energy pants. (Souter 1993, Makris et al. 1992, 1994). In one instance, in 1995, the output of such a plantation in which sweet sorghum was grown, was distilled and a modest quantity of ethanol was industrially produced.

As these activities unfolded, the potentiality of ethanol was brought forward in a series of meetings and one-day workshops that took place in the context of several networks studying environmental issues (see for instance KAPE 1996a, 1996b).

4. Organisational form, advancement of bioethanol and entanglement
It is worth noting that a number of official (state) agencies were involved with these activities, i.e. several Ministries, scientists from the Athens Technical University (EMP), the Centre for Renewable Energy Resources (KAPE), the state refineries company (ELDA), the National Rural Research Institute (ETHIAGE), a number of agricultural co-operatives and elected perfects. Private companies' participation was very limited.

I think that it is important to note that the above-mentioned activities were financed in their entirety from various funds and resources whose funding authorities were receptors of various EU programs and funding. The only exception has been one case in which an

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3 According to the Scrivener directive, it is suggested that bio-fuels be taxed with no more than the 1/10th of the tax of conventional (non-renewable fossil) fuels. (Excise Duties 1998), In effect, it suggests the de-taxation of biofuels. France, as well as some other EU member-states, have accepted this directive and have aligned their national legislation accordingly.

4 The reader is notified that, firstly, that the information presented therein to a significant extent was obtained through participant observation and, secondly, anonymity is necessary to secure participants interests.
interested private company undertook the task of cultivating a particular crop and distilling the produce; the expenses incurred were in the area of €13,000.

That virtually all financing was from EU sources is telling of the perception of local planners and others in position of authority: simply put, they were not willing to allocate or/and invest any funds on what was seen a "spend away money", as one such person put it. It also indicates that all such activities were officially condoned only if the funding was exogenous to the country indicating the very low level of commitment in advancing environmental friendly solutions.

The whole project was co-ordinated in an informal and loose way by two-three persons that operated as a surrogate development agency agent, particularly so during the last nine or so years. This small group saw in the development of bioethanol the solution to a number of the country's problems. Its members, who had an already distinguishing career, therefore could be considered as experts, occupied upper-middle-level administrative positions in organisations whose official institutional role was environmental protection, for example KAPE or ETHIAGE. Despite their middling (even "upper-middle") hierarchical position they retained a significant amount of autonomy, for instance as department heads or directors, and were quite effective in drafting proposals that were submitted directly to EU agencies that were then accepted, as a rule. This further raise the status of these experts as they appeared to comply with the organisations' expressed purpose, i.e. to promote scientific research, and were also very efficient in bringing in substantial project funding from the EU and its agencies. Hence, their real position was enhanced as people who, as one interviewee put it, "deliver the goods".

This situation of relative autonomy and of attraction of financial resources allowed the co-ordinators to make contacts, or rejuvenate earlier ones, and to form networks with other experts from other organisations, with research and other concerned parties, and with a few private manufacturing companies. It is important to note that participants in these networks saw the promotion of environmental solutions and projects that had a clearly social orientation to link up with the promotion of their own particular private interests.

The persons that co-ordinated the bioethanol cause, because of their academic credentials and long career, and because they backed their views with ample evidence and, in addition, due to their effectiveness in securing EU financing enjoyed, as I said, a heightened status. Proof of this claim is that other officials, whom this author met, considered them as "serious" and held them in esteem. The end-result was that the pro-ethanol administrators were listened upon by their hierarchically superior; their expertise was considered as the accepted truth. Accordingly, this group operated as an informal axis centre of authority and prestige.

I should note the pro ethanol group's knowledge about agriculture-related aspects of bioethanol, e.g. best plants and strains in terms of sugar or amylum, cultivation techniques, and areas of cultivation were extensive. However, they were ignorant about the manufacturing of ethanol, its commercial and entrepreneurial aspects. Accordingly, they had to rely on other agents for these.

Two were the special issues about which this small group thought that bioethanol could usefully be utilised and upon which they constructed the case-platform for ethanol.

The one is the problem of the crisis that has surfaced in Greek Agriculture. A crisis long in the brewing that, as it appears will expand and may intensify as the various EU contributions and subsidies are curtailed or/and revoked, or end and, in parallel to this process, the element of competition increases and intensifies. The intensification of competition is an outcome of, both; inter EU-community developments, as well as the result of the relatively new World Trade Organisation (WTO, ex-GATT) agreements. The pro ethanol group held, on the basis of a series of assessments (example: ) that the turn to environmental cultivations (in particular towards particular corn and sorghum strains) and the processing-distillation of their produce into bioethanol in areas of cultivation would
supply farmers with an income that corresponded to the one they currently accrued. In this way, they held, farmers shall remain occupied and the rural population will be held in the countryside, thus offsetting a probable rural exit and a rise in unemployment. In addition, a number of by-products and even spin-offs could be secured through the ethanol turn. For instance, animal feed could be obtained from solid leftovers, soil fertilisers could be salvaged, good quality CO₂ could be produce, the distilling plants could generate their own electricity (by using "baggage" as fuel) and become energy self-sufficient, and so on.

The second is the problem of environmental pollution and its consequence upon public health. In this context, measures that could be taken is to reduce the various pollutants released by gasoline-powered auto vehicles; as already suggested, bioethanol has a benign effect in this direction.

In effect, the production of bioethanol as a fuel, and the possibility of a vertical integrated development (i.e. with substantial backward linkages) that could accompany the development of this product could function as a development lever that would have a local and even possibly a national impact. Bioethanol was seen to have a usefulness for the growth of the economy of particular regions, such as Thrace (in Greece's Northeast), without impairing the local environment, while, at the same time advancing the welfare of the residents of heavily polluted Athens (the capital and largest city), or of other cities. The product was to be used as a non-polluting fuel, primarily in fleets of busses.

The co-ordinators, and those more closely linked to them have formed a small informal exclusive, cross-departmental group that was activated across organisations, since the persons involved served in a number of different organisations; I will call it "group A". This group was formed within a dynamic context and aimed to accomplish the aim of introducing bioethanol as a "green" fuel. Of course such type of groups are known in the literature as "cliques" (Dalton 1944). In due course, a second group was formed that was antithetical to the first, which I will name "group (or clique) B".

I would like to remind the reader that M. Dalton identifies five types of clique: vertical symbiotic, vertical parasitic, horizontal aggressive, horizontal defensive and random (1994: 335-41). In the case under discussion a further distinction may be drawn between a clique of younger persons ("clique B" with most of its members being around 40) and that of older ones ("clique A"). The first is incoming and aggressive. It primarily attempts to strengthen itself by occupying top administrative positions and thus utilising the hierarchy for its own ends. The second clique is in age terms the departing one (most of its members are over 60), and as a matter of fact defensive as it attempts to close and protect the position of its members. It defended itself best by completing the work it has undertaken, but this it strives to achieve in an aggressive way.

It is interesting that both cliques were formed and became active within state bureaucracies, which in contradistinction to Dalton's early reference to cliques as formations that are active within the bureaucratic organisation of private enterprises. In fact, both cliques were formed and activated by certain officials of state agencies that had a particular responsibility with matters pertaining to environmental protection and with environmentally friendly development. In this sense, "green" issues are for both members of both cliques a vital aspect of their specific "habitus", but of course are not the only element in it.

The formation of each clique was embedded, in part, within specific political affiliations. The political ties were more lose in the case of clique "A"; tighter in the case of clique "B", which was seriously disadvantaged as it was lacking the authoritative members

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5 From the work of Melville Dalton the following definition of the clique may be extracted: A clique is a small, informal and exclusive group of persons, who is formed in a dynamic context and aspires to realise some aim by playing a substantial-leading role. Dalton points out that by clique we usually refer to morally unacceptable practices because of the lack of transparency associated with its activity. However, the term need not have a negative connotation (1994: 334-5).
of the former. Nevertheless, it appears that in both cases political kinship was of fundamental importance for their initial formation. In both, the initial formation and accordingly, distinction between an in-group and an out-group, was running along political affiliations. Later, partly political affiliation played a most vital role in the attraction that clique "B", in particular, generated. Having said that, I should point out that there is no one to one identity between party political affiliation and membership to one or another of the cliques.

The 'hard' core of clique "A" had tasked itself to propagate its views and positions, but also to attract to these high state functionaries and members of the government. It is telling that those among the latter that accepted them were referred to as "initiated" – a term that describes this informal and lose, yet real, relationship. A relationship and even relation that was established on the basis of a special quasi-proposal forwarded by clique "A" members for resolving certain of Greece's problems. In other words, the attraction drawn towards clique "A", and the clique itself, took place in an ideological basis, without negating the existence and impact of other intentions and aims on the part of the so-called initiated.

The conjecture appears to have been helpful to the cause of bioethanol, particularly during the 1993-1996 period. Then, because of the deteriorating health of the then prime-minister A. Papandreou, and the situation of standstill in which the bulk of the high government functionaries have adopted, those disagreeing with the advancement of bioethanol did not risked opposing it openly. On the other hand, the loosening of the central government apparatus facilitated the ideological intrusion of clique "A" to certain high government officials, that so happened were close or members of the contending successor's of Papandreou and subsequent prime minister, namely K. Simitis.

The vision of clique "A" projected was that of a "green" modernisation. In the particular conjuncture, when the label of the "modernisers: was crucially important in drawing the inter-party divisions of the ruling political party (PASOK), it was very hard for the political personalities who identified with modernisation – a catch-all ideological pronouncement and particularly, a rallying point – to refuse or negate what the acknowledged experts of clique "A" were suggesting.

The result of the aforementioned initiation emerged during the fall of 1994. It was the time when the "Greek Action Plan for Climatic Change" was drafted by an Athens Technical University team for the Greek Ministry of the Environment. The plan was the country's official position in the Berlin Conference for the Environment. With this document Greece undertook certain obligations one of which was to consume (and therefor produce) "at least" 50,000 metric tonnes of fuel ethanol per year, by the year 2000 (Ministry of the Environment 1994). The particular point was included as a concession following the pressure that influential members of clique "A" exerted to include a clause for the consumption of at least 1000,000 of fuel ethanol per year. It is important to note that the decision to include such a clause was taken at a time when the responsible high government functionaries accepted without substantial questioning the basic correctness of the views of experts that were members of clique "A"; the latter exerted a hegemony upon matters of their concern.

This decision-reservation to the extent that it placed bioethanol on the development agenda was a victory of key importance for clique "A". With it a concrete and tangible target was set that had an end date and functioned as a point of orientation and reference. At the same time, clique "A" members had concretised their aims and intentions so their contacts with other officials and attempts to influence them had verve. The target now was to build up a showpiece bioethanol plant that would have the capacity to produce quantity of ethanol as set by the plan. In parallel, they were attempting to persuade certain agricultural co-operatives and some potential investors about the usefulness and feasibility to go ahead and introduce in the foreseeable future, respectively, appropriate cultivation and industrial investments.
On the basis of this above-mentioned decision, clique "A" went along to concretely resolve the issue of financing the construction of such an industrial plant. The solution came with the Second Delors Package. Under it the "Operational Programme for Energy" was established. Clique 'A' did manage to include in the first call of that programme (it came out in December 1996) a provision for the creation of one or more manufacturing units. These could have, according to my estimates, an annual output of up to 42,000 metric tonnes of fuel ethanol per year. This figure is quite close to the set consumption target of 50,000 metric tonnes of ethanol per year.

The initial success of clique "A" to include fuel ethanol in the development agenda was not repeated nor continued. My explanation was that the primary reason should be sought in the luck of trust. There was no trust or trusting relations among the would-be agents of such a project, neither the public sector nor those from the private sector.

With every occasion clique 'A' highlighted the need to create:

(a) A legal framework that would regulate issues such as the exact quality specifications and the detaxation specifics, more broadly it will set the parameters that would form the bio-fuels market;

(b) Of a formal agency that would have the features of a "social partners" type of coalition, that would actually organise the fuel plant cultivation and undertake the production and distribution of ethanol. The idea was for such an agency to take the form of a Société Anonyme type of company that would include, as partners, agricultural co-operative, primary feedstock products, i.e. industrial distillers and other interested parties.

I should point out that although this, at the time, was not particularly clear; it was possible and indeed feasible from, both, a technical and an economic point of view to proceed with these two tasks in a parallel fashion. Alternatively, these could be promoted at least at close step so that the setting up of a new enterprise, the introduction of the new cultivation and the building of the distillation facility would shortly follow the establishment of the legal framework. As a matter of fact it appears that had things progressed in such a way, the initiative and the momentum would have been in the pro-ethanol camp and the project may have taken off and, indeed, succeeded.

Nevertheless, the would-be investors did not have the slightest trust towards one-another. Nor did they trust the leading members of the clique "A", which in their mind figured as the official responsible state agency.

It is quite interesting here that despite its declarations about the need to promote bioethanol in the spirit and organisational form off the partnership, clique "A" did not took up any specific initiatives in that direction. It did not attempt to co-ordinate in a concrete way the inter-linkages of the co-operatives with the investors and their future clients, i.e. gasoline wholesalers and, secondarily, retailers. In fact, it avoided undertaking such a role, presumably to avoid future accusations of not being impartial and suchlike. However, this position of theirs was not understood by prospective investors who steeped in expecting the central state to occupy the vital role and organise the project, read in this luck of state
initiative a non-existent devious plan to involve them into some unknown travail with negative for them results.

In fact this was an issue raised time and again among the particular group of potential investors to which I had access. These suspected that there was a devious attempt on the part of clique A\textsuperscript{"} members to use their company, while in the end another company (with which some secret deal would have been struck) would be awarded the lion's share in the project and they would be left out. It is worth noting that such suspicions and fears were not paranoid, but were bred and indeed funned by clique "A" members who, unwittingly, shifted in their accounts about how the setting up of the agency would proceed. The latter, who themselves had a rather blurred idea of how things could proceed, in their talk in discussions changed the composition of participants and partners, of their share, board majorities were blurred, and overall emitted a picture that could be interpreted negatively. As this information were passed on a feeling was cultivated among this team of potential investors that some kind of entrapment was underway and all remaining trust vanished, despite the fact that the lure of high profits was still there. Again, access to this anecdotal information has been made possible through my personal involvement with the project and a particular ethanol distillery company.

Potential investors were also extremely suspicious of each other. These, basically ethanol producers (the ethanol these produced was basically for human consumption), five in all, shared a history of mistrusting each other. This mistrust was rooted in a long history of competition and feuding for securing raw materials and customers. Of these five, only two had direct knowledge and involvement of the fuel ethanol prospect. In addition, one company may have had a grudge against another for securing a super profit through "moonshining" practices (i.e. smuggling) when their competitors could not emulate them.\footnote{9} One important issue, which only exacerbated these traditions of mutual mistrust, was the desire of each would-be-partner to acquire majority control in the new enterprise. The stress on majority control reflected the small-scale, family and even personal character of ethanol producers. These felt that only in such a way they could safeguard their particularistic interests. It reflected a particular string of entrepreneurial attitudes, mentality and culture. One that was virtually embedded in the socio-economic circumstances from which these agents stemmed and which made it so difficult for them to operate in a different (larger) scale. Indeed, it could be argued that this issue of attitudes/mentality/culture was a most difficult, almost insurmountable, obstacle to the advancement of the project.

The end result was that despite this the would-be partners were well aware of the forthcoming opportunity, they did not cultivated and established a working relationship between them. In fact, their relationship remained at a very superficial and distant level and as the repeatedness and density of contacts remained very low they did not cultivated the necessary trust without which no economic dealings and transactions is possible.

5. Corporate profitability and priorities

The end result was that when the call for the creation of a fuel ethanol plant was announced the necessary agreements had not been reached among the would-be partners and in fact distrust had deepened. Accordingly, no investor took the trouble to apply for a grant despite the fact that an applicant that fulfilled the call's specifications and there were a few available, would in actual practice receive the funds for setting the plant \textit{gratis} (by means of overpricing).

\footnote{9} Alcohol taxation in Greece is very high, as it is the case in most countries in the world. If the current average price of one liter of pure alcohol (\textit{surfine} quality at 96°) is drachmas 1200, tax is about drachmas 1030. It is obvious that alcohol contraband presents a huge opportunity for a substantial instant profit and despite strict policing it is known to occur from time to time.
Clique "B" as an argument against clique "A" used the fact that no interest with respect to the call materialised. The former pointed out that the lack of interest highlighted the fact that conditions had not matured for the introduction of fuel ethanol in the country. This argument had a degree of plausibility and accordingly it became relatively easy to take bioethanol away from the renewables' agenda.

If the conjuncture had played a major role in neutralising clique "B", it now played a benign one in fostering the "killing" the ethanol project. Thus, a series of transfers and appointments between the "initiated" followed the election of K. Simitis as the prime minister; taking them from the posts they commanded and which were significant for the project. The places of the "initiated" was taken over by persons who held markedly fewer credentials and formal assets as experts than the members of clique "A", and who just happened that remaining in hierarchically lower position. However, the new entrants, in contradistinction to those, which they replaced, felt strong in their new positions and were not willing to allow the experts, but hierarchically their inferiors, tutor or guide them. They insisted in imposing their views even if these were not well founded. It goes without saying that the underlying feuding between clique "A" and the upcoming clique "B" was funnelled and reached the point of open clash.

That the new situation was conflict laden can be seen found in the following example. How was it possible for the hierarchically inferior, yet senior for several decades full university professor to follow without appraisal and evaluation the views of the young research centre director who happened to hold just Master's degree that happened to conflict with his own!

In the particular conjuncture, clique "B" which was marked by a mutual assistance element binding its members together, went ahead to adopt a more active role. It argued that, as there was not a tangible investors' interest in the advancement of bioethanol the emphasis on renewable energy sources should shift to more realistic, down to earth, projects. As the influence of clique "B" increased it also drew in some, younger, officials that possessed academic credentials and could be considered experts that left clique "A", with which they have been associated, after its debacle.

Despite this development, it its claims and arguments clique "B" systematically avoided touching on technical issues over which clique "A" had a clear dominance that it never lost. Instead, it attempted to change the policy on renewable resources through the issuance of directives and orders, which could influence by the top positions it now controlled in the hierarchy of the pertinent state organisations. Thus in the second call of the Energy Operational Programme, which came out in the summer of 1997, bioethanol was not explicitly mentioned. Theoretically proposals to create a very small experimental laboratory producing bioethanol (that could have a production capacity of up to 1,500 tonnes per annum; compare this with the 50,000 tonnes per annum capacity included in the first call) were possible. No potential investor filed an application, as it was expected.

The last battle of clique "A" was given with the occasion of the approval of a EU funded comparison and demonstration programme of urban buses that would run on fuel ethanol (the sums involved were modest: € 300,000). According to the programme, two Athens buses, one that would run with conventional fuel and another on fuel ethanol, would move along the same lines for a period of six months. The project's approval made clique "A" members believe that there was a good chance to propagate the benign character of fuel ethanol and its use to the wider public. That this could lead to popular approval of it, which, in turn, would provide the basis for, renewed initiatives with the introduction of bioethanol. However, clique "B" members blocked the financing of the project and by administrative methods did not release the funds - they should have done so by November 1997 and this did not occurred. In the end the programme was abandoned and, presumably, the funds were returned to Brussels.
It would appear that despite these debacles the maintenance by clique "A" members of their position within the organisation was an obstacle for the intentions of clique "B". The former, who as already mentioned, enjoyed a high prestige, used it to voice their views and to denounce clique "B" for lack of expertise and overall dark intentions. This practice, one may assume, created difficulties for clique "B" members' pursuits so their response was to fire their opponents. The result was that clique "A" for all practical purposes ceased to exist.

6. Discussion and conclusion

The element of social embeddedness (Granovetter 1985) of the cliques that fought over the introduction of fuel ethanol as a renewable liquid fuel shows that their decisions, relevant actions or the absence of action, were based not so much upon the influence exerted by a general moral position to defend the environment. Neither were they dependent on impersonal institutional arrangements, nor by particularistic interests. Not that these did not exert an influence nor had an impact, for they did. However, I think that that which, because of its nodal character, played the decisive role are the concrete micro-level interpersonal and inter-group relations alongside with the macro-level political element within which they were concretised. Had these relations been characterised by density, had the potential to allow the building of trust among would-be partners materialised and, therefore, an agreement could then have been reached that would advance the bioethanol project.

My point is that it is this element of trust, its presence or absence that is the most important for the introduction of fuel ethanol, i.e. of a patently pro-environmental policy. In our example, trust and, I should add, the conjuncture emerge as the most important factors for the development of struggles about which clique and policy will prevail, and of cause for the future of bioethanol. In this contestation the weapons and armaments included the institutional framework, know-how, the hierarchy available resources, the co-ordinating environmental agency and the materialisation of the project. 

In the end of the day, the problem in the relationship between development and environmental protection, in the case under scrutiny, was not one of a narrowly technical, financial, bureaucratic red tape or organisational, or personal character, irrationality or completing novelties and interest. The impact of such factors is not all ruled out. Because the outcome vitally depends on the relations that agents enter or do not enter into, the problematic in the relationship under examination is a primarily socio-political phenomenon.

Bibliography: