Sizing up the Policy Information System for Energy Efficient Construction

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Synopsis

This paper explores the relevance of different concepts of 'information exchange' for analysing the UK's policymaking process for energy efficient construction.

Abstract

Policy outcomes depend as much on how various groups perceive the *process*through which policy is made as on the *content* of the policy. With the making of the 1994-95 regulations for energy-efficient construction in the UK as its focus, this paper elaborates on this point. It first identifies the diverse ways in which various parties consulted on the new regulations perceived the process of consultation. It then goes on to consider how diverse perceptions, beliefs and types of information interact to collectively shape the policy information system. Arguing that information and interests are negotiated in the process of making policy, the paper attempts to evaluate the relative influence of these different components of the system. It concludes that there is a dominant consensus shared by opposing industrial interests as well as the government. Information on factors which might militate against the ability to know whether this policy is working and whether it can work better in the long-term is relatively marginalised. A *growth* in technical information on how energy consumption in buildings is affected by a range of variables, has been accompanied by a *loss* of information relating to the scope and enforcement of performance standards developed on their basis.

1. Introduction: Four Perspectives on Information

There is perhaps a certain irony to the fact that so much information has been produced with the aim of controlling the consumption of energy. After all, economists and social commentators (Stehr, 1994) have been telling us for over thirty years that information has now replaced energy as the lifeblood of Western economies! Such claims about the role of information are typically derived simply from quantitative measures of increasing "amounts" of information-related work in these economies. Definitional problems with such estimates have sparked a wider debate on different ways in which 'information' and 'information use' can be understood (e.g., Webster, 1995). This paper explores the relevance of these conceptual discussions for understanding the role of information in making energy-related policy.

Research into the human dimensions of energy consumption has demonstrated the divide between 'lay' and 'expert' perspectives on problems relating to energy and the environment. However, relatively little work exists on the diversity of perspectives *within*policy communities in energy-and-environment sectors. Technical expertise is only one component in these sectors where government agencies, industrial lobby groups and professional associations jostle for policy influence. Policy outcomes depend not only on the *content*of the policy but also on how these various groups perceive the *process*through which policy is made. Policy-makers must therefore attend to the way in which this process is organised - different types of energy standard may entail different forms of soliciting information from industry. Focusing on the making of England and Wales' Building Regulations (1994-95) for energy-efficiency, I elaborate on the following argument in this paper:

There is a fundamental mismatch between the new general mechanism of regulatory standards, and the process through

which government consults with stakeholders and expert advisors on its intentions to revise the specific level of these standards. As a process of information exchange between government and industry, consultation continues to reflect the philosophy of traditional prescriptive regulations. The consultation process, however, would need to be reorganised if it is to obtain the kinds of information required by the new performance-based mode of regulating buildings for energy efficiency.

In the rest of this introductory section, I identify four ways of conceptualising the role of information in policymaking. In the next section, I provide an overview of the revised energy-conservation regulations for housing in England and Wales. In the third section, I analyse the process of information exchange in the UK government's consultation with affected parties on its new regulations. The concluding section summarises the paper's argument that consultation ought to be used as a forum for debate on these fundamental issues: (1.) a robust longterm strategy for raising energy standards in buildings, and (2.) the extent to which the actual enforcement of energy regulations can be reliably carried out through a building control system whose primary goal is to ensure health and safety of the inspected structures.

Before I outline four perspectives on policy information, a few definitions are in order. *Policy information*efers to matters such as the following. Is the proposed policy (building regulation in our case) technically implementable? What will be its impact (including economic, technological, social) on various affected parties? Who <u>are</u> all the affected parties, and what are their views? Is the policy appropriate in relation to the stated objectives and goals? Will it have the desired impact on these goals? Policy information includes but is not restricted to *technical information* The *information system* for a specific policy area consists of both the full range of facts, opinions, assumptions and arguments relating to the above questions - i.e., on the nature of the policy problem(s), proposed policy actions and expected policy impacts - and the process through which this information is exchanged between policy actors.

1.1. The Objective Perspective

Perhaps the simplest way to think of a piece of information is that it has a fixed meaning which is uniformly conveyed to all its recipients. Thus, building regulations specified in terms of energy ratings convey technical information about expected energy costs (or energy consumption, depending on the basis of the rating) for the home in question. During the process of setting standards, policy information is likewise exchanged between private and public stakeholders in a straightforward way. Any piece of information - for example, the impact of a rise in thermal regulations on jobs in the concrete block industry, or say, on annual domestic energy consumption - may be true or false; the point is that a diagnosis to that effect can be readily made. So far, so good. It is unlikely, though, that anyone thinks about information exchange in quite this crude fashion. Still, it is the simplest place to start in building up to a more complex picture.

The crude model of policy information systems assumes that perfect information exists and is exchanged perfectly. The most obvious problem complicating this picture is the existence of *uncertainty* where we recognise that perfect information can almost always never be found in reality. Further, people can have difficulties understanding the information which they receive. Since each piece of information is only *a* piece amidst a host of other information signals, people act to "satisfice" (Simon, 1982) rather than optimise their attempts to make sense of and act upon information.

Recognition of uncertainty improves upon the crude model, but the picture of information exchange now rests on the belief that uncertainty can itself be known within specifiable boundaries of certainty! It follows that consulting with stakeholders in making and revising policy will ensure that uncertainties are eliminated, and the best available information gathered and disseminated by government.

1.2. The Subjective Perspective

However, a further complication is introduced when we recognise that individuals and policy groups interpret information according to pre-determined interests, values and priorities, as well as other knowledge they are bound to have. People are not just neutral *producers receivers* f information; instead, they actively shape and

construct it. In the policy world, the most common way of conveying this notion is to talk about subjective *per ceptions* and *biases*. For example, the information supplied by a policy stakeholder may be seen as 'tainted' by commercial interest. Or, consumers might be seen as resistant to information they receive about energy efficiency in a policy campaign, owing to anything ranging from their personality type and thought style to their predetermined notions, suspicions or priorities.

The subjective view extends the objective diagnosis to account for the fact that barriers to perfect information exchange could be more deep-rooted than suggested by talk about 'misunderstandings'. Thus, the same piece of information may be perceived and evaluated differently by different stakeholders. By assuming that these subjective biases can be more or less objectively understood, this perspective opens the way for a new, 'corrective' level in the policy-making process. Biased evidence produced at the first level of consultation with the full range of affected parties can be filtered out by a neutral body of experts that rightfully focuses on the technical details.

1.3. The Contextual Perspective

Picking up from where the subjective standpoint leaves off, this perspective moves from an exclusive focus on *individuals*or homogeneous interest-groups to the *social* contexts in which information is produced, transmitted, absorbed or ignored. It offers a more *dynamic* perspective in that it focuses on how information is actively produced, interpreted and acted upon in specific social contexts. This means paying attention to things like individuals being barraged by diverse information signals of which words are only one part, face-to-face conversations between say, the property agent and the home buyer, training seminars and policy expert group discussions on energy efficiency, or written correspondence between government officers and lobbyists. Because people rarely absorb information in isolation, their personal (or group) biases and interests are not neatly *fixed* The specific settings of policy negotiation shape the content of policy information and interests.

Hence, one cannot evaluate a policy proposal solely on a 'technical' basis (focusing on the proposal's content) nor on a 'subjective' basis (focusing on policy stakeholders' prior subjective affiliations). It is by virtue of the process of consultation and the nature of related discussions - e.g., in an industry's trade press - on a new policy that policy information 'creates' its meaning and shapes the response of policy actors. This active property, which is distinct from passive truth-content, is what has been called the 'performative' quality of information (Lyotard, 1979).

1.4. The Systemic Perspective

Finally, we move to an yet broader level of understanding the role of information, which brings us to the main question underlying this exercise: how do diverse beliefs, assumptions and interests *interact*or 'fit' together to collectively shape the policy information system? With the knowledge of day-to-day interactions and exchanges, can we come up with a useful picture of the regulatory system as a whole? Having accepted that information and interests are negotiated in the process of making policy, we are still left with the task of making judgements on the *relative*influence about different sorts of information. What sorts of assumptions seem to dominate and what sorts are invisible?

In addressing these questions, it is useful to distinguish between two ideal-types of information system. System A is driven by the search for information that some or all participants lack at some point in time, but need to acquire. Thus, it is characterised by a combination of the objective and subjective perspectives outlined above. The desired information is available somewhere, the participants' goal is to do the right thing in order to find it. Supermarket shopping might be an example, where price and ingredient labels provide information that customers seek. System B, on the other hand, is driven by the necessity to act under "*known ignorances* not simply matters concerning which information is lacking" (Geertz, 1978/92, p.227). While various types of information may be available, most or all participants know that what they would really need or like to know is in principle, unknowable or extremely difficult to get under the circumstances. A bazaar market or door-to-door sales are example, since quality of goods is too difficult to ascertain and a standardised price simply does not exist. Information is still exchanged and decisions made in this setting, characterised, however, by a contextual perspective on information exchange.

As we shall see in this paper, the system for regulating energy efficient construction has now begun to resemble features of System B. As long as regulatory standards were solely prescriptive, the process of making them was akin to System A. That is, the government needed to verify the technical feasibility of prescriptive U-value standards and accuracy of methods specified for achieving them, and industry was (more or less) able to provide the information. New "total energy performance" standards open up new uncertainties, some of which may continue to persist after regulations have been made and even after construction is complete. How various participants perceive the *process* of making regulations is important, since what is considered to be already known, 'knowable' or worth knowing, shape the *negotiation* of the scope of performance standards.

2. Building Regulations for Energy Conservation

A recent revision in the Building Regulations (Part L for conservation of fuel and power) for England and Wales has provided the opportunity to 'size up' the policy information system relevant to energy efficient construction. Because the Building Regulations are mandatory and because wide consultation is generally considered to be a vital part of policy-making in the UK, the process of revising the level of requirements can potentially bring together the entire range of trade and professional groups influenced by - and influencing - the outcomes.

Approved in 1994 and in effect since July 1995, the new regulations made by the UK's Department of the Environment (DoE) mandate that builders provide energy ratings for new housing. (Among other revisions, especially significant was the attempt to regulate building services in the non-residential sector; however, this paper will focus on the housing sector alone). Calculated on the basis of the government's Standard Assessment Procedure (SAP) and intended to predict the energy performance of the building, the rating also serves as one among three methods of showing compliance with the legal requirement that, "reasonable provision shall be made for conservation of fuel and power in buildings" (DoE, 1995).

The SAP was developed in the early 90s for the former Energy Efficiency Office (EEO) by the Building Research Energy Conservation Support Unit (BRECSU) in order to deal with confusion created at the time by two competing, commercial schemes for energy-labelling. Lack of market demand from home-buyers for these services influenced the UK Government's commitment to incorporate energy labelling in the building regulations under its climate change policy. This decision solidifies the transformation, begun in the mid-80s, of the regulatory mechanism from *prescriptive* o *performance* tandards. Plus, it is the first step in possibly shifting the basis of the energy conservation requirements from the traditional focus on minimising heat loss from the more or less permanent building fabric (by specifying U-value limits) to one that extends to relatively short-term building services (by specifying a threshold rating sensitive to the performance of the latter).

Were it simply a matter of *extending* egulation to cover new energy-relevant targets, the shift would have been resisted by builders but perhaps attracted less criticism otherwise. The fact that the rating method allows *tradeoffs* between fabric and heating system improvements in complying with the regulations has created controversy. Even worse in the case of SAP is the procedure's dependence on fluctuating market prices of heating fuels, although it is now pegged to a three year average.

The SAP energy rating is based on calculated annual energy costs for space and water heating. Assuming standard occupancy and heating patterns, the calculation is normalised for floor area and expressed on a scale of 1-100 (the higher the number, the better the energy standard). The rating depends on a range of factors affecting energy consumption: thermal insulation of fabric, efficiency and control of heating system, ventilation and solar gain features, and relative price of fuels used for space and water heating (Stephenson, 1995). However, it is *particularly* sensitive to fuel prices and some researchers find that it is possible for a new house to have minimal fabric insulation features and yet comply with the regulations by means of an oil or gas condensing boiler (Oreszczyn and Gillott, 1995).

Since the SAP rating is the basis of one of three methods of regulatory compliance, this last mentioned concern is a real possibility. Depending on floor area, a rating of 80-85 and above is sufficient to demonstrate compliance. If the SAP rating is below 60 and the builder still chooses to comply via the SAP method, improved U-values would

be required. The only U-value limits applicable to all houses are not very stringent - $0.7 \text{ W/m}^2\text{K}$ for exposed walls and floors and $0.35 \text{ W/m}^2\text{K}$ for roofs - and may never actually be checked during building inspection.

Previous research (Shove and Raman, 1996) has examined the potential implications of the SAP shift for market influence on statutory regulation. Here, I shall focus on SAP's significance for the actual process in which government and industry exchange information on what they take to be the proper scope and implications of these regulations.

3. Consulting on Regulations: Technical Check or Negotiating Strategy?

Buildings appear to be what economists call "experience goods" because consumers cannot evaluate their quality, or, as in this context, their energy performance, until after they 'consume' or occupy the home (Weimer and Vining, 1992). Home-buyers are also supposed to lack awareness of the importance of energy efficiency, hence the solution: building researchers should give them the best available information about energy use. This is the thinking behind energy ratings as a *consumer* measure. SAP's worth in this policy context could potentially be tested against fuel bills upon occupancy, making the policy system akin to System A.

With the 1995 regulations, SAP has a second role as a *produces* tandard. The calculation procedure is now used to judge whether "reasonable provision" has been made for *conservation* of fuel and power. Here, its validity would have to satisfy a broader range of political concerns like, "is building regulation doing enough/too much for the cause of energy conservation"?. Since the SAP rating method of compliance gives builders a lot of flexibility in the choice of construction features, the regulatory system begins to acquire characteristics of System B, where some information that is desired is either very difficult to obtain or virtually does not exist. That is, it is hard to predict what measures will be chosen and if all measures will have an equivalent effect on energy use.

Before SAP became part of the Building Regulations, the government was engaged in extensive consultation with industry and other stakeholders, a process that carried on for over 3 years. Political scientists (e.g., Vogel, 1986) have argued that consultation represents a search for social *consensus* an essential value in UK political culture. The SAP case suggests that such consensus may be harder to come by, especially with new players and new issues making their mark. Overruling a storm of criticism from most parts of the industry as well as its own advisory committee, the DoE went ahead with its plan to put energy-labelling into the building regulations.

In analysing archival materials documenting the SAP consultation process, my intention is not so much to explain this departure from consensus, but to ask how different perceptions of performance standards suggest different philosophies for organising consultation. I will argue that if the intrinsic uncertainties of performance standards were to be explicitly recognised, the consultation process could benefit by serving as the forum for exploring long-term strategies for energy regulation of buildings.

3.1. Consulting on Energy Ratings: The Search for Perfect Information?

At first, the SAP consultation appears to reflect an exclusively *technical perspective* standards as simple "embodiments of information" (US Office of Technology Assessment, 1992). The rise of computer-based modelling has made it possible to act on the recognition that energy consumption depends on complex interactions between a range of factors. In the policy area of energy and buildings, there seems to be a general consensus that setting targets based on the calculated 'total energy performance' of buildings is the best way forward from an elemental Uvalue approach.

Virtually all parties in the SAP consultation claimed to support the "target" approach, finding fault with the specific parameters of SAP rather than the general principle of regulating on the basis of total performance ratings. Much ink was spilled over pointing out the contradictions of using a running cost index rather than a fabricbased measure as the basis of the target. Insulation and glazing manufacturers argued that builders would tradeoff a high-efficiency boiler against better U-values. The Technical Working Party of the Building Regulations Advi-

sory Committee (BRAC) spent most of its 18 meetings deliberating issues relating to the SAP proposal and eventually recommended against its adoption. Building researchers who had developed energy performance models themselves warned against anomalies from mixing a consumer-information system and building control. But again, there were rarely any doubts expressed about a method targeted to the building as a whole.

3.2. Divergent Interests, Imperfect Information

Much of the furore over SAP could be attributed to the fact that a standard which is intended to provide information on a complex product whose thermal performance is hard to judge in advance of occupation, itself appears to be an 'experience good'!

(1.) Being a complex procedure with multiple variables, the SAP standard makes it hard for government regulators to know how builders will comply in advance of applications for building control approval.

(2.) The original SAP procedure took site-specific factors such as building orientation into account. While this aspect was eventually dropped after consultation, builders would have also faced potential uncertainties(3.) Traditional interest-groups representing the energy efficiency materials industries - glass, insulation, timber-frame - are left to speculate on the implications of the SAP method for their markets. Since condensing boilers may provide a simple route to regulatory compliance, a new interest group representing boiler-makers has now been created.

In sum, the evaluation of SAP by predicting its impact on construction practice itself becomes a murky practice. In retrospect, the consultation process in previous rounds of revisions which mainly took the form of incremental improvements in U-value standards, could be described as a search for information that could be obtained without too much trouble from a relatively self-contained set of stakeholders (approximating System A). The current flexibility of standards means that consultation is far more open-ended and inclusive of new players, yet *less* likely to yield 'perfect' information (System B).

An objective perspective also implies that the process of consultation is simply for the purpose of soliciting people's views on matters such as the "(technical) merits of the proposals and the practicality of their implementation" or the government's estimate of compliance costs (DoE, 1993). However, one has to delve in only a bit deeper in order to understand that different participants, depending on their own professional background but also the resources of the group they represent, discern wildly different opportunities in this apparently straightfoward request for information. Responses to the Department of the Environment's formal consultation document (DoE, 1993) on the new Part L ranged from the narrowly technical to the flamboyantly rhetorical.

Some turned the 'information-seeking' exercise into an opportunity to market their products, a piece of research or a piece of 'evidence'. A few offered a clause-by-clause analysis of the Government's Approved Document that is intended to provide guidance to builders on meeting the legal requirement. Others launched into discursive essays advocating their viewpoint, typically arguing why the proposals either "went too far" or "not far enough" in raising standards. Finally, some consultees appear to have perceived consultation on the lines of a *polling*exercise, where each person casts a simple 'aye' or 'nay' vote, for or against the proposals.

Thus, one might say that the standards-setting process is 'political', meaning that actors each have a *subjective* interest which colours the way they respond, the information they offer and so forth. The Building Regulations Division's *formal*summary of the consultation responses lends itself to such an interpretation. It organises respondents by their primary interest and role within the building industry: the builders, the 'green' and 'energy-efficient' product interests, building professionals, building control, enabling the Division to judge specific claims against the background of the claim-maker.

The above is all-too-familiar to political scientists and economists who have long argued that government regulation is subject to 'capture' by various interest-groups each with an axe to grind. This is difficult to avoid since the government does not possess all the information needed to set practically achievable standards without too high a cost. Some information must necessarily be sought from the industry; the problem then arises of sorting out the wheat from the chaff in the mountain of 'evidence' provided from various interests. This is where the Building Regulations Advisory Committee (BRAC) is expected to step in and provide 'independent' advice on adjudicating

between 'scientific' and commercial claims for identifying the most appropriate standards. It is expected to interrogate the research done by the Building Research Establishment (BRE) in developing the regulations as well as the consultation responses and other interest-group evidence.

Having admitted the strong influence of 'subjective' interests in the process of standard-setting, BRAC and its technical working party on the energy regulations seem to promise a return to the haven of technically objective information. In the next section, we shall see how the consultation process is far more complex to make this possible.

3.3. Flexible Interests, Negotiated Information

BRAC is an advisory body, which at the time of its original formation in 1962 was composed mainly of people representing the professional management community in building, namely, architects, engineers and surveyors (Garnham Wright, 1983). Later on, representatives from other key parts of the housebuilding industry - block-makers and builders - were added; with the rise of energy conservation requirements (Part L), academic experts in the area also came in. Today, the committee seems to be split three ways between its academic, professional and industrial wings.

To judge whether BRAC serves as a neutral mediator, it is instructive to consider the views of committee members themselves on what they do. A few members claim that the advisory committee exists neither to promote nor to debunk regulation. Reflecting a 'technical' perspective, they say that BRAC exists to figure out what's worth regulating and how. Rather than being an *advocate*of any particular perspective, it is a neutral *advisor*. While particular members might be from industry, they are all expected to suspend their prejudices in the deliberations - if anybody slips into a position of advocacy, the others always bring them back to earth!

Some of the industry members, however, believe that their role as a member of BRAC is *precisely*to serve as a representative for their part of the industry. What some academics dismiss as a 'biased' expression of 'vested interests', these members perceive as an absolutely essential presentation of information that 'theoretical' people do not possess. In their view, academics and professionals *also* have a 'biased' perspective on regulation and its potential. Finally, some BRAC observers openly state that the BRAC consultation is a 'political' rather than a '- scientific' process, meaning that statutory standards are negotiated by the interaction between government, professionals and the represented parts of the industry.

While the above analysis introduces negotiation as an *intrinsic elements* f the regulatory process, it is still incomplete. For it still assumes that various parties each have just *one* interest, which is both *fixed* and easily identifiable to themselves and others. This makes the regulatory process, so it is difficult to see how changes can be anything other than incremental. What we have so far is a picture of what the political scientist, Charles Lindblom (1959) called "disjointed incrementalism", meaning that policy-making is influenced by multiple groups with different interests and none with enough power to bring about a significant change to the <u>status quo</u>.

Digging a bit deeper into the consultation process we find the beginnings of a more sophisticated understanding of this elaborate process. A handful of consultee comments suggest a *contextual perspective* the role of information exchange. What this means is that neither "the government" nor "the building industry" can be seen as entities with more or less homogeneous and static interests. While standard-setting *is* 'negotiated' by means of a 'political' process, participants do not simply come to the table knowing exactly what they want and how to fight for it. Nor is what they say necessarily the sum total of what they mean!

To illustrate these points, let us first consider what "the government's" interests may be in this case. An immediate problem is the fact that different agencies have different interests - thus, the former Energy Efficiency Office strongly promoted the take-up of energy ratings and higher standards, while the Building Regulations Division (BRD) had other issues to consider including the possibility of technical risks from lower U-values. Being located within the Construction Sponsorship Directorate of the DoE, BRD cannot introduce standards deemed to impose punitive costs on builders. While it tries to balance this constraint with the imperative to 'do something' for the environment, the division also has to reckon with the sharp deregulatory eye of the Department of Trade and

Industry which is known to frown upon 'undue burdens' on manufacturers. Faced with these multiple and opposing forces, the BRD seems to have no clearly defined interest in the energy area (as opposed to health and safety, its traditional remit). *Its objectives are themselves negotiated*er the course of interacting with other government agencies and lobby groups.

We have already seen how the advisory committee is made up of multiple alliances. A similar analysis could be done for the different parts of 'the building industry'. An example will be given here of the boiler industry to illustrate how its identity may be changing. Despite the potentially huge implications for their market from a mandatory SAP rating, condensing boiler-makers are curiously absent from the set of lobby groups influential in the recent revisions. This can be explained by the fact that the various manufacturers were not organised under the umbrella of a trade association which could convey their interest to the government. In fact, it was the DoE which encouraged them to organise and in this way, essentially helped them 'construct' a common interest. In general, boiler makers did not seem to think of themselves as being part of 'the building industry'; neither did makers of condensing boilers conceive of a link with the 'green interests' (insulation, double-glazing, timber-frame makers) in the industry, despite their claims to making a highly energy-efficient product. Since boilers come in a range of efficiencies, boiler makers could equally well fall on either side of the energy-efficiency fence!

In sum, the consultation process is neither solely a case of information exchange on well-defined technical details nor one of interaction of similarly defined political interests. Clearly, both of these elements are present; however, the resulting negotiation is *dynamic* ather than static.

3.4. The Policy Information System for Energy Efficient Construction

So far, we have tried to unravel increasingly more disparate levels of the consultation process for energy-related building regulations. Now it is time to ask how the diverse perspectives, interests, and assumptions fit together - or fail to do so, as the case may be - to make up a regulatory system whose boundaries may be ill-defined and subject to change, but can nevertheless be approximately identified. By looking at the whole sweep of consultation exchanges, we can address the following questions.

(1.) Is there still a dominant consensus in this regulatory system on issues which might militate against the *ability* to know what policy is working and what is not

(2.) Likewise, is there a similar consensus on the role of consultation that prevents broader debate on the long-term possibilities of regulating for energy efficient construction?

The general consensus favouring 'total energy performance' standards appears to block wider discussion on their capacity to be enforced. In one sense, the performance standard (of which the SAP rating is a first, though heavily disliked, step) represents a major new piece of information in the system. It replaces the U-value focus with a more sophisticated understanding of the complex factors affecting energy use, hence filling an *information gap* and leading to the *growth of informatio* the system. However, in another sense, the standard is a simplifying mechanism that *creates new levels of uncertainty* mstituting an *information loss* for some players (building control officers).

A few surveyors representing local authority building control - the system responsible for enforcing the DoE's regulations - were the lone voices raising the issue of checking procedures becoming more uncertain under target standards. While U-value standards could in principle, be checked during construction, performance standards must be largely approved on the basis of certain calculations done before the beginning of construction. Their '- real' outcome cannot be known until after construction is complete, by which time it becomes too late and expensive to make significant changes. Thus, a complex performance standard embodying relatively 'perfect' information on energy use simultaneously detracts from the standard-enforcer's ability to know if the calculated standard matches reality. In practice, such questions of 'knowability' have always existed; however, they could potentially become magnified under a system of target performance standards (see also Shove, 1994b). Another problem is the fact that building control originally evolved to check for structural defects and fire hazards; building inspectors therefore have little time to check for compliance with energy regulations at all.

The second question reflects on the role of the consultation process in affecting debate on policy for the longterm. Here we need to infer the *implicit norms* anderlying the interaction of government and industry players. Given its history of working closely with house-builders and block-makers on one side, and insulation and glazing trade associations on the other, the Building Regulations Division knows what kind of response to expect from each of these players. The Division's experience suggests that each sector's bark is probably worse than its bite; hence there are some apparently unpopular moves that each party will eventually accept. Likewise, recognizing the bargaining element in consultation, each of these industry players are likely to state their case in the strongest of terms, while knowing that they will have to concede some ground in practice. Under these established 'rules', regulation seems to have the ability to persuade opposed parties to settle for the middle ground.

However, it is precisely this middle ground that may also block the airing of fundamental questions that challenge *both*parties, i.e., the builders who prefer standards to be minimal and the 'green' interests who want them made more stringent overnight. A few marginal consultees raise the idea of *government setting out a long-term vision for energy standards in the building indus* by point here is that by identifying a robust standard to be achieved in say, five or ten years, government would give different parts of the industry sufficient time to develop the infrastructure necessary to meet the regulation. Consultation would appear to be the ideal forum to outline this vision and debate a feasible level of energy standard. However, the process as currently constituted, does not provide the space for taking up this suggestion.

4. Conclusion: The Need for "Information Conservation"?

This paper has tried to challenge the objective perspective on information implicit in a system responsible for making energy-related policy. Such a perspective assumes that energy performance standards are more or less akin to prescriptive standards in their implications for organising government's consultation with industry. Consultation on building regulations was originally developed as a method of checking technical details and preventing errors in the specification of prescriptive standards. Commercial bias in responses was more or less predictable in such a mode of regulation that involved relatively few players, and could therefore be sorted out from the technical evidence needed by government. Consultation on the level of new performance standards continues to be heavily focused around this philosophy that takes the basic principles for granted and seeks feedback on the details.

While technical checking is still important for writing the non-binding guidance for regulatory compliance, performance standards open up new uncertainties *and* possibilities. The consultation forum as currently constituted seems to lack the capacity to explore them. Political negotiation is locked into a debate over incremental change versus an immediate, radical increase in standards, with the former usually winning the battle. However, some new players raise the possibility of a third option, namely, of government setting out a long-term vision for energy standards in building.

A second and rather different issue which is also locked out of wider consultation debate concerns practical constraints to the enforcement of energy performance standards in a building control system oriented towards ensuring health and structural safety. With research on integrated energy performance firmly established in the system and sufficiently persuasive to the dominant players, concerns over the complexities and inspection difficulties entailed by the new standards have barely begun to be debated.

In sum, the consultation system for regulating energy efficient construction admits a wide range of policy information in the first instance, while shaping them in such a way that filters out the 'noise'. In this respect, it appears that the system needs some *conservation of (policy) information* consultation were seen as a dialogue as well as the normal check on technical detail, two basic policy issues could begin to be more widely addressed. One, the scope of performance standards in exploring a long-term strategy for energy regulation of buildings, and two, the simultaneous gulf being created between the setting of complex standards and the means by which they are implemented and enforced.

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