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HOW AND WHY ACTORS USE LCA IN THE CONTEXT OF WASTE POLICY? JUSTIFYING THE USE OF LCA THROUGH PLURAL SYSTEMS OF LEGITIMACY

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ABSTRACT

For several decades, LCA has been used to support decision-making. However, little effort has been placed on understanding how actors apply LCA, the arguments mobilised when justifying its application and the controversies surrounding its application. The aim of this work is to understand the legitimacy of LCA in the context of European waste management regimes. LCA is used as a test of the environmental efficiency of waste treatment options, and as a tool for private sector actors to gain a greater market share. Criticisms of the use of LCA highlight the limitations of LCA to act as a test of environmental efficiency and the friction which arises when LCA is used to subjugate the civic nature of waste management decisions.

INTRODUCTION

Life cycle assessment (LCA) is used as a tool used support waste management decision-making in a "scientifically robust manner" (European Commission, 2011:1). Boons and Howard-Grenville (2009) suggests most scientists involved in industrial ecology, of which LCA is a tool, hold the view point that acquiring information will lead to its application. However, the authors remark that, in the face of social science based research, this is an untenable position as actions taken by individuals and organisations can only be understood by taking the social context in which they transpire into account.

In waste management, the decision to recycle, incinerate or landfill a waste stream is often studied by LCA. Such a decision is often accompanied by controversy and dispute among the industrial sector, residents and governmental authorities. Hence, in terms of understanding the role of LCA in waste management decisions, we should look at the use of such a concept in the context of a social framework of action. Taking this as a point of departure, this paper suggests that LCA should be seen in the context of the *complex society* in which we find waste management decision situations transpiring. A society is complex when its actors possess the competencies to identify the nature of a situation and navigate situations which arise from different systems of legitimacy (Boltanski & Thévenot, 2006).

This paper aims to understand the justifications actors give in the defence of their use of LCA, and the legitimacy of LCA in the context of European waste management regimes. More specifically, the objectives of this paper are to: a) identify the chain argumentation actors

utilise in the justification of their use of LCA; and b) discuss the possible limitations of LCA in the context of coordination in waste management regimes.

APPROACH AND METHODS

The economics of conventions

This paper utilises the economics of conventions, and the model of the economies of worth focuses on the construction of agreement in situations of public dispute. This model shows that to avoid perpetual disagreement "persons can appeal to a principle of coherence, in their behaviour and in the arguments they use to justify that behaviour" (Boltanski & Thévenot, 2006:79). Boltanski and Thévenot (2006), identify six systems of legitimacy allowing an ordinary sense of what is just within the construction of a political philosophy: the *inspired*, the *domestic*, the *fame*, the *civic*, the *market* and the *industrial*.

Godard and Laurans (2004:9) suggest that "the usual way to arbitrate disagreements is to make use of such agreed tests which, in following conventional but precise rules distinctive to each justification order, imply observable results that 'anyone accepts', at least temporarily, as incontestable facts." The authors characterise the requirements of 'pure tests' corresponding to each systems of legitimacy. For instance, in the industrial, agreed tests include "sophisticated scientific and objective methodologies and measures of phenomena", which use indicators such as the rate of the use of natural resources and technical rates of efficiency (Godard & Laurans, 2004:28). For the civic, tests relate to the democratic quality of institutional bodies and the degree to which stakeholders are represented.

It is important to assess the legitimacy of LCA on two fronts. Firstly, whether LCA is an effective and 'pure' test to measure and compare the environmental efficiency of waste treatment options. Secondly, if actors bring in any other systems of legitimacy into their criticisms of the application of LCA to waste management decision situations.

Methods

Semi-structured interviews were undertaken with national level actors (major governmental institutions [ministries and agencies], industry associations and private sector actors) and local level waste management actors (waste management authorities) in England (seven national and six local) and France (nine national and nine local). Semi-structured interviews allow for a dialogue with actors, required to understand the justifications they give for their support of, or against, the use of LCA.

JUSTIFYING THE USE OF LCA

In England and France, it was not surprising to find justifications embedded in the *industrial* system of legitimacy. The justification of actions resulting from LCA studies highlights the role of LCA as a *test* used to measure the worth of arguments in relation to the higher common principle of *efficiency*. Additionally, aspects such as a *standardised methodology* that facilitates *transparency* in the *measurement* of environmental efficiency highlights actors' aspirations to replicate the scientific method in the name of producing robust evidence for decision support. Furthermore, LCA was justified as a tool that can provide evidence that projects the possibility of future interactions among waste management processes.

In England and France, justifications for the use of LCA based in the *market* system of legitimacy were also evident. Industrial actors aspired to achieve a higher state of financial worth, by using LCA to differentiate the environmental credentials for their bids in order to achieve a greater market share.

CRITICISM: CHALLENGING THE LEGITIMACY OF LCA

Boltanski and Thévenot (1999) highlight two forms of criticisms in disputes. Actors' criticisms and arguments can be related to the same system of legitimacy (internal) or can be based in two or more systems of legitimacy (external).

Internal Criticism

The internal critiques of the LCA were identified as limitations in the application of LCA to waste management and the subjectivity of LCA.

In England, previous criticisms on the application of LCA to waste management can be found (see Eunomia Research (2004)). However, neither national nor local level actors questioned the application of LCA to waste management. Indeed, actors acknowledged that completing an LCA was part of the 'natural' process that should be carried out. However, in France, actors suggested that it was the role of the producers to undertake LCA (in the context of eco-design), waste management decision had already been made, recycling was being implemented and there was no need for LCA in waste management decisions. In England, whilst the majority of actors recognized the subjectivity of LCA, all actors noted their experience showed the benefits of conducting an LCA outweigh its limitations.

In France, some actors at the national and local level expressed a degree of distrust of LCA as a test of environmental efficiency. Actors' previous experience with LCA had led them to be weary of LCA results. LCA was perceived as subjective and more of a communication tool to forward actors' vested interests.

External Criticism

External criticism of LCA was evoked through the introduction of principles and objects relevant in the civic system of legitimacy. In England when the use of LCA to support the Best Practicable Environmental Option (BPEO) became mandatory in waste management decision-making. It was noted that the BPEO was a technocratic process used to steamroller a sceptical public into options which they dislike or distrust (House of Commons, 2001). In this case, the underlying principle of efficiency was not challenged. However aspects such as consultative decision making and the public interest were introduced to criticise the role of LCA in the BPEO and waste management decision-making. The presence of these aspects confront the legitimacy of LCA as a test in waste management decision-making, as LCA was perceived to be a tool that was used to bypass the civic nature and legitimacy of waste management decisions. The BPEO (and LCA) was subsequently removed as a statutory requirement in waste management planning.

In France, external criticism stemmed from the two different states of legitimate political relations within the civic system of legitimacy: the individual and *their own* particular affiliations and interests, and the individual and *the common* interest. The impression that the black box nature of LCA could allow for the manipulation of data led to some actors to stress

that LCAs have been used to implement the issuer's aim. Actors' criticism stems from LCA being used to pursue the 'individual will' and not the common interest.

DISCUSSION AND CONCLUSIONS

If LCA is to be a more socially coherent tool, one should recognise that *industrial* reasoning is not the sole legitimation of action. If LCA is envisaged in the context of participative democracy and decision making, actors involved in the LCA process may recognise that the knowledge produced has limitations. Furthermore, such an acceptance may reify the notion that we can act on incomplete knowledge. Such an approach is intended to broaden and deepen debates and thereby strengthening discussions.

Thus, a pertinent question may be; how could LCA be used in order to improve the efficiency of waste management systems, but also influence actors' behaviours in a more equilibrated way? One of the directions LCA could evolve is to take into consideration the complexity of society, one that represents what is possible within society with the aspirations of actors constrained by several tests; to address external criticisms by modifying the test of LCA or to include tests and parameters emanating from the civic system of legitimacy.

LCA is touted by the European Commission as a science based approach to support environmentally sustainable based policy-making in waste management. Whilst this is a legitimate line of argumentation (based in the industrial system of legitimacy) it does not consider the other possible forms of justification upon waste management regimes are based. LCA was criticised when it was used as part of a technocratic process that allowed scientific models to detract from the civic dimension of waste management decisions. Against this backdrop, we should think of new opportunities for LCT to evolve as a more socially coherent concept.

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