OPEN ACCESS

1st World Sustainability Forum
1-30 November 2011

www. wsforum.org

Review

A Review on Policy 4A.x: Tackling Climate Change in London

Amin Hosseinian-Far [1,*], Hamid Jahankhani [1] and Elias Pimenidis [1]

[1] University of East London. ACE. 4-6 University Way, London E16 2RD, UK

E-Mails: A.Hosseinian-Far@theIET.org; Hamid.Jahankhani@uel.ac.uk; E.Pimenidis@uel.ac.uk

* Author to whom correspondence should be addressed; Tel.: +447720377693; Fax: +442082232963

Received: / Accepted: / Published:

Abstract: London Plan is the London mayor's long term plan for tackling different shortcomings of the London city. Tackling climate change is been outlined in one of its policies named Policy 4A.x. Making energy use more efficient, using renewable energy sources and Combined Heat and Power (CHP) are proposed for the challenge. The plan has been out since 2004 for review and many scholars have commented on many aspects of the plan. This paper evaluates the Policy 4A.x since 2004. It longitudinally analyses the environmental, financial and social aspects of the policy. Moreover it discusses the financial domain of the plan in more depth.

Keywords: The London Plan, Policy 4A.2, Influence Diagrams, Financial Assessment

---

1. Introduction

London Plan is the London mayor's strategic plan which considers many aspects of London as city. The strategic term refers to the fact the strategies should be implemented considering a long term scope. The policy has been out for expert discussion since 2004. Since then there has been various reviews and comments on different aspects this plan. The plan comprises of number of policies which each discusses one aspect that should be improved; for instance one policy may assess the transport quality of London, while another policy discusses the climate change. Policy 4A.1 and 4A.2 are named "Tackling & Mitigating Climate Change" where the strategies for CO2 reduction are outlined (Greater

London Authority, 2011). In the followings the policy 4A is outlined in more details, followed by its reviews.

2. Policy 4A

The main policy area is named 'Climate Change'. This policy area encompasses the following considerations:

Tackling Climate Change	Sustainable Energy
Water	Air
Waste	Noise
Minerals	Contaminated Land
Hazardous Substances	

Each of these categories include number of policies each; for instance policies 4A.1, 4A.2, and 4A.3 shape the 'Tackling Climate Change' category, while 'Hazardous Substances' include policy 4A.34. The Climate Change category overall consists of 34 policies starting from 4A.1 to 4A.34 (Greater London Authority, 2011).

The thought of this research is on Policies 4A.1 and 4A.2. 4A.1 integrates use of less energy consumption trough proper designs, constructions and reconstructions (Policy 4A.3), use of decentralised energy producers e.g. Combined Heat and Power-CHP (Policy 4A.6), use of renewable energy systems e.g. Solar Power (Policy 4A.7), and a proper approach to integrate the above three (Policy 4A.9). The cross-sectional nature of the policy runs us into with a complex scenario (Greater London Authority, 2011).

Policy assessment is the first step to study the feasibility of the policies. Despite various funded studies by Greater London Authority (GLA), the policy has been out for review since 2004 and many academics and industries have also given their comments on various aspects of the London Plan. Tackling and mitigating climate change policies also have not been an exception.

3. Reviews

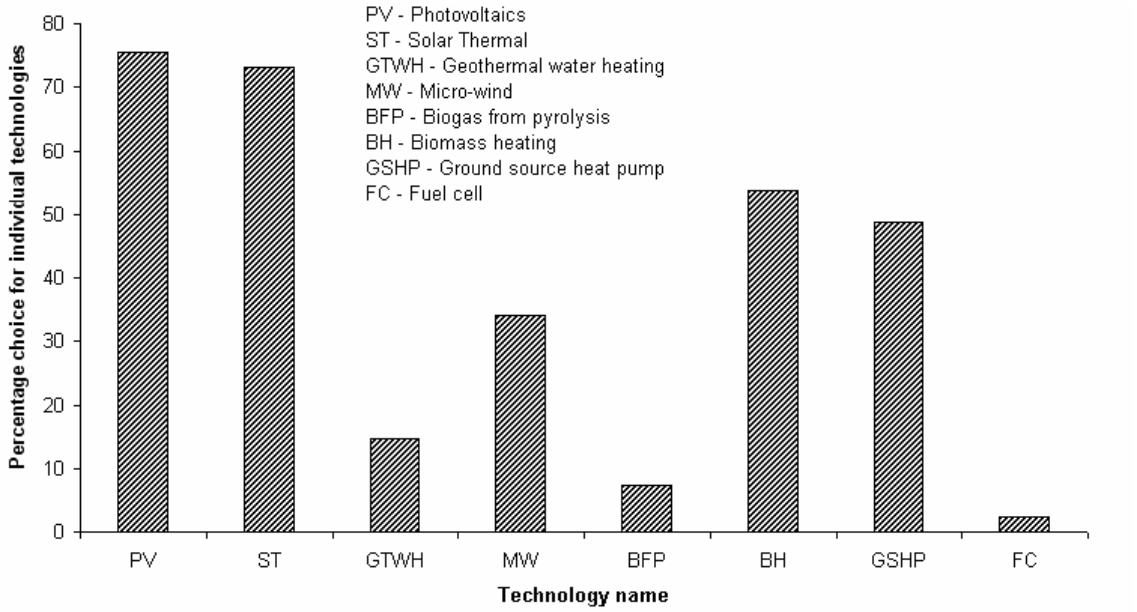
London Plan Policies 4A.1 and 4A.2 reflects on the means that the London Climate Change can be mitigated. Use of Combined Heat and Power (CHP and CCHP) which means use of decentralized energy producers, isolating homes, and use of renewables in order to come of up with a 60% reduction in its CO2 by 2050 compared to 1990 base. The 60% itself is under question by many reviewers as there is not a rationale ground for such a percentage (Greater London Authority, 2011). Bather (2010) reflects on the decentralized energy systems. Bather also order the preferred decentralized energy choices as:

1. Consideration of current combined heat and power systems
2. CHP/CCHP which is run by RE (Renewable Energy systems)
3. Gas and hydrogen consuming CHPs which can also consume the electricity generated by RE
4. Communal heating/cooling consuming RE
5. Communal heating/cooling consuming natural gas (Bather, 2010)

Bather's study imitates more details of one aspect of the plan policy. Regional Policy chapter 9 also outlines the properties that consider the three major criteria and RE to reduce 10% of the CO2. These

properties should be at least 1000sq.m in size (Government Office for the East of England, 2008). Figure 1 illustrates the preferred energy source that can be used according to a questionnaire survey:

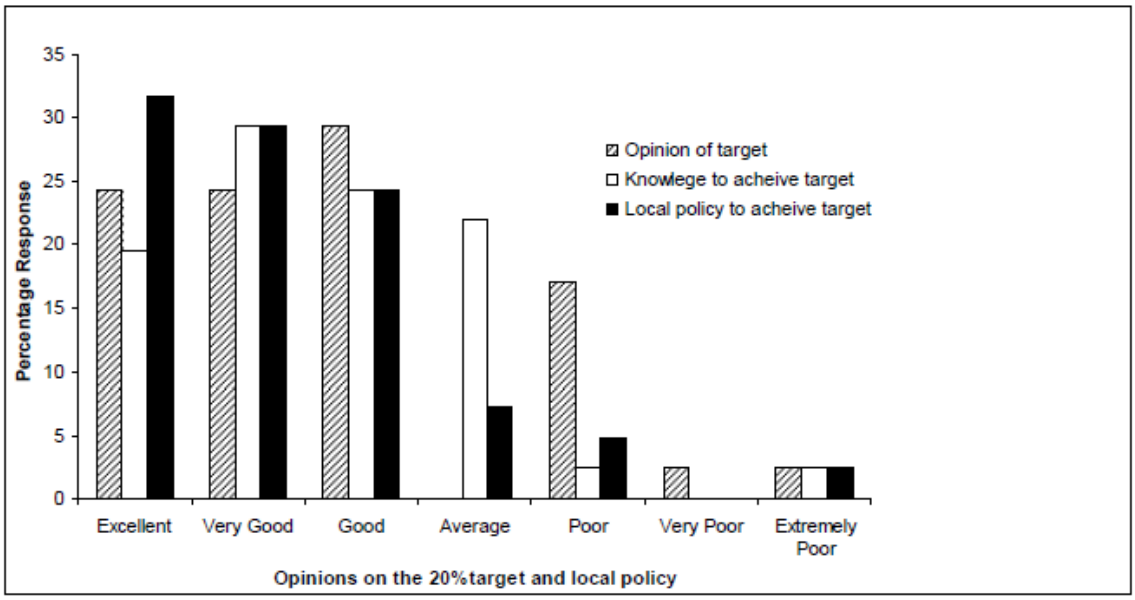
Figure 1: Consideration of 20% CO2 Reduction and the preferred technology (Moore, no date)



This study also outlines that how the public opinion can match the public policy to match the 20% target (Figure 2):

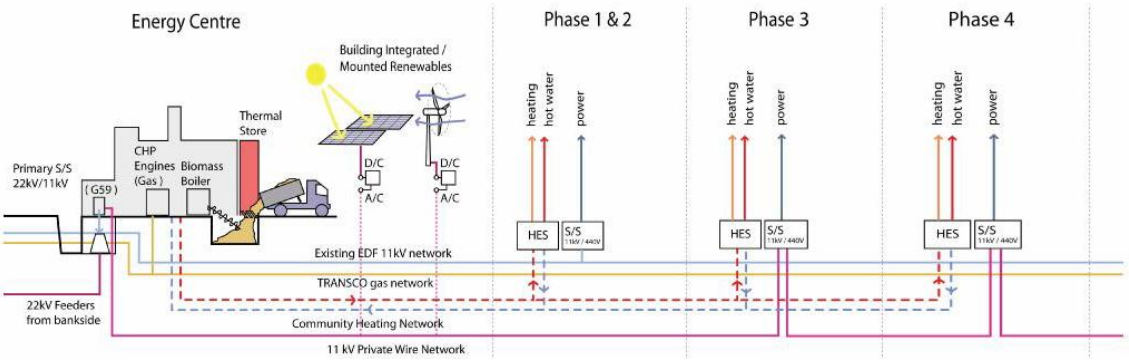
\

Figure 2: 20% CO2 reduction target and local policy (Moore, no date)



Bowman & Gleeson (2008) consider the London Plan at the Regional Level in the hierarchy of planning. It also proposes the implementation phase of the planning (Figure 3):

Figure 3: Implementation for Energy Planning (Bowman & Gleeson, 2008)

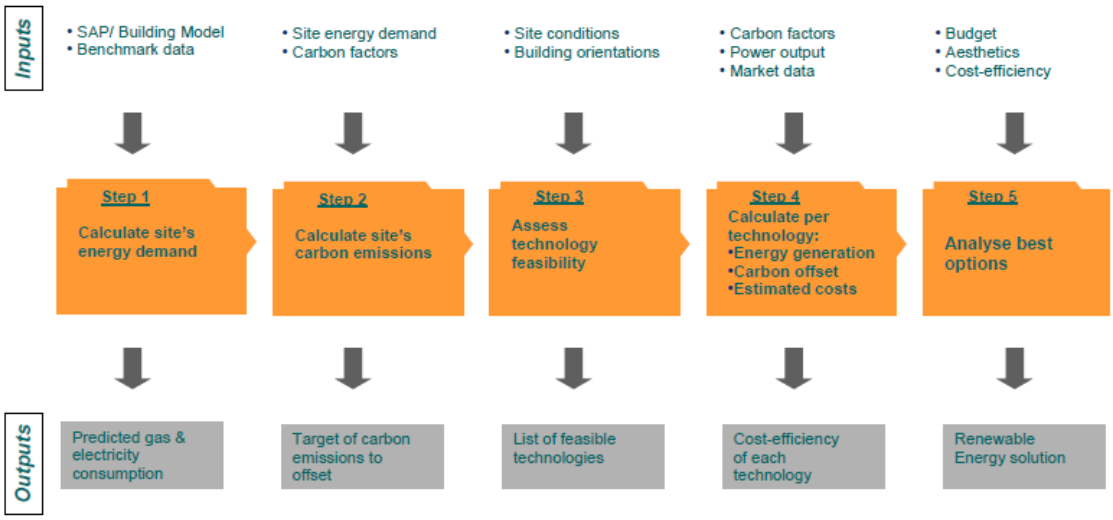


Different borough councils in London also proposed different requirements that they need for their local implementation. This outlines the need for more details requirement study for the London Plan. For instance Islington borough requires additional requirements set for the use of biomass at the required properties. These are not outlined in the Sustainability related policies of the London Plan (Islington Borough Council, 2008).

Different reviews resulted in a biodiversity guidance plan that was presented in 2008 by the time mayor of London Ken Livingston (London Mayor's Office, 2008).

Excavation of current reviews shows that studies have been performed extensively in the main two domains of sustainability-Environmental and Social Domains; but analysis of the costs for each plan policy is not fully outlined within the reviews. There are various methodologies proposed for assessment and implementation of plan policies. Bowman & Gleeson (2008) proposes five steps for RE energy assessment (Figure 4):

Figure 4: 5-step RE assessment methodology



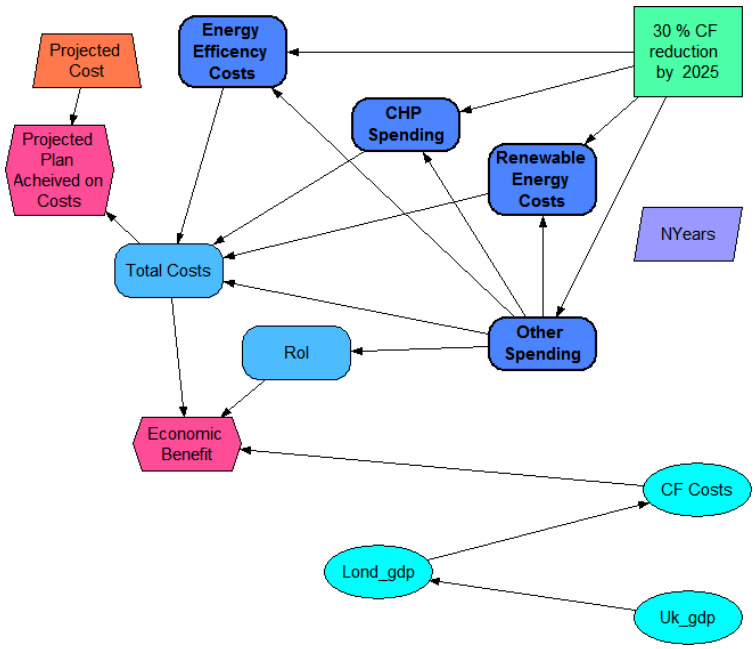
Nonetheless financial assessment and review needs more consideration. There are different methods for evaluating the financial aspect of the plan policies (Hosseinian-Far et al 2011). The choice of the methodology depends on the research context. In different narrations the use of intelligent multi-agents systems, system dynamics, expert systems, etc. are proposed. One of the techniques that specifically assess 4A.2 policy is by means of probabilistic networks. Although Bayesian networks or influence

diagrams (ID) are used on different case studies, but they have not been used for modeling this area of the London Plan. This contribution is beneficial to policy makers in London and other polluted cities. In 2009 and 2010 there were some further policy changes drafted by the London Authority, but the Climate change policy 4A.2 is not affected.

4. Financial Assessment of the policy using ID

Influence diagram is used in order to model the money matters of 4A.2 (Figure 5):

Figure 5: Extended ID for Policy 4A.2 (Hosseinian Far *et al* 2011)



The assessment is still under review. The model is trying to compare the 800 Million pounds as the investment and the actual savings and the costs of the plan. Currently the model is under evaluation using reversal and removal of the nodes. Even the merge of different policies can be reflected in an Influence Diagram as it is expandable.

5. Conclusion

Requirement analysis and review and a policy would worth in order to avoid the shortcomings and later miscalculations. London Plan has been out since 2004 and various reviews and comments have been received by Greater London Authority (GLA). Despite the various appraisals shows that the financial assessment of the plan is less considered.

Influence Diagrams are appropriate techniques for assessing the financial aspect of the policy 4A.2. The complexity and the boundary paradigm of the system under consideration are the factors that justify the use of an expandable Influence Diagram Network.

Conflict of Interest

"The authors declare no conflict of interest".

References and Notes

1. Bather, M. 2010. *Review of the London Plan and the Mayor's Energy Strategy in relation to decentralised energy policies.* Retrieved Sep 2011, from London Development Agency: http://www.londonheatmap.org.uk/Content/uploaded/documents/Review%20of%20London%20Plan%20Policies%20and%20Mayoral%20Strategies.pdf
2. Bowman, S., & Gleeson, S. 2008. *Energy in Planning.* Cibse.
3. Government Office for the East of England. 2008. Retrieved Sep 2011, from DECC.
4. Greater London Authority. 2011. *London Plan.* Retrieved 2011, from London.Gov: http://www.london.gov.uk/priorities/planning/vision/london-plan/replacement-process
5. Hosseinian Far, A., Jahankhani, H., & Pimenidis, E. Using Probabilistic Networks for London Plan Knowledge Representation. *CIS2011*. London: IEEE 2011.
6. Hosseinian-Far, A., Pimenidis, E., Jahankhani, H., & Wijeyesekera, D. C. Financial Assessment of the London Plan Policy 4A.2 by Probabilistic Inference and Influence Diagrams. *EANN/AIAI Joint Conference.* 2011, Corfu-Greece.
7. Islington Borough Council. 2008. *Sustainable Design and Construction Statements: Guidance on Content for Planning Applications in Islington.* Retrieved Sep 2011, from ukcip.org.uk: http://www.ukcip.org.uk/wordpress/wp-content/PDFs/LA_pdfs/sdc_and_energy_statement_guidance.pdf
8. London Mayor's Office. 2008. *London Plan Best Practice Guidae 6.* Retrieved Aug 2011, from http://www.london.gov.uk/mayor/strategies/sds/docs/bpg_biodiversity_final.pdf
9. Moore, A. No Date . *Microgen-London: An Assessment of the 20% renewable taget from onsite microgeneration in the proposed London Plan update.* Southhampton: University of Southhampton-MSc thesis.