



FUNDING MODELS FOR ELECTRIC VEHICLES

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AGENDA

- The Milton Keynes Electric Light Vehicle InfraStructure (ELVIS) project.
- Literature Review (What is Capital Budgeting, Capital Budgeting Techniques, Models/Styles of Decision making in Organisations, Social Return on Investment (SROI), SROI Analysis)
- Research Questions
- Method (Sample Selection, Data Collection, Data Interpretation and Analysis)
- Feedback



The MILTON KEYNES 'ELVIS' PROJECT

My project is linked to the MK 'ELVIS', Electric Light Vehicle InfraStructure project.

- Has nothing to do with blue suede shoes and hound dogs, it's part of making MK "The King" of Low Carbon cities.
- To support the widespread uptake of electric cars and vans in Milton Keynes.
- Partners include; Office of Low Emission Vehicles (OLEV), MK Council, Invest MK, University Centre MK, the Open University, Cranfield University, EON, Renault – Nissan



THE MK “ELVIS” PROJECT

- ELVIS provides the opportunity for links to Electric Vehicle experts, policy makers, and users.

Uptake of Electric Vehicles by organisations involve investment decision making with regard to;

- a) The vehicles
- b) Infrastructure (e.g. charging points)

This study focuses on the investment decisions of organisations regarding the vehicles.

- How are these investment or funding decisions assessed?

CAPITAL BUDGETING

Capital Budgeting is the making of long run planning decisions for investments in projects and programmes (Horngren, Foster and Datar 2000)

Buckley (1998), Brealey and Myers (1999), Shapiro (1999), all mention four widely used capital budgeting techniques;

- Average Accounting Rate of Return
- Payback Period
- Internal Rate of Return (IRR)
- Net Present Value (NPV)

In using these techniques for evaluating cash flows for the uptake of Electric Vehicles, plug-in grant, exemption from VED, parking tolls etc would have to be taken into account.

Conventional capital budgeting follows the profit maximisation hegemony of capitalism and excludes anything thought of as wonderful, aspirational or desirable of human condition (Gray, 2006). Conventional accounting, finance, business strategy, and capitalism are, in all probability driving un-sustainability (Gray 2011).

MODELS/STYLES OF DECISION MAKING

- Four models of decision making (Buckley 1998);
 - 1) Rational model
 - 2) Bounded-rational model
 - 3) Political model
 - 4) Garbage can model.

Environmental Investments

Any capital project (compliance or non-compliance) that has a major (though not necessarily exclusive) objective, the control, reduction, or prevention of pollution is an environmental investment (White et al., 1995). Uptake of Electric Vehicles by organisations can largely be classified as such because of their environmental implications. Gray (2011), Social sustainability and environmental sustainability are two sides of the same coin.

These investments are usually seen as necessary but unprofitable and escape systematic financial analysis, (White et al., 1995)

Maunder and Burritt (1991) saw the possibility of the development of tools for the incorporation of environmental/social issues into organisational activities and actions.

Social and Environmental Cost Accounting

Accounting systems to identify, compile, analyse and report environmental information in a timely and rigorous fashion are a prerequisite to understanding the sources and magnitude of environmental costs in a firm, (White et al., 1995)

Most managers run their businesses without full information about the impact of their operations on the environment and human well-being, and thus without the ability to optimise these impacts while achieving financial returns expected by shareholders, (Lingane and Olsen, 2004)

Social Return on Investment (SROI)

This provides logical insights into the social and environmental considerations in commercial evaluation of projects.

Terminology not yet standardised in the area of measuring social impact. Lingane and Olsen (2004), provide useful definitions;

Social: refers to non-investor stakeholders affected by business; individuals, employees, communities and society.

Social bottom line: Social outcome measurement that parallels the financial bottom line. Net social benefit from business operations.

SROI: Originating from Return on Investment in the traditional sense. The social impact of business or non-profit's operations in monetary terms relative to the investment required to create that impact and exclusive of its financial return to investors.

SROI Analysis

The set of practices necessary to generate meaningful SROI figures and other quantified social metrics.

Involves four steps (Lingane and Olsen, 2004)

- Collection of ongoing social performance data.
- Prioritisation of data important enough to track.
- Incorporation of these data into management decision making and reporting.
- Valuation to understand what social value is created or destroyed.

RESEARCH QUESTION(S)

The extant literature indicates that projects/investments are either;

- 1) Assessed using the traditional/conventional capital budgeting techniques or
- 2) Viewed as necessary but unprofitable especially when they have a substantial social and environmental content and escape systematic financial analysis.

Without even taking into account social and environmental cost considerations electric vehicles have a similar total cost of ownership to their conventional petrol/diesel counterparts.

The problem to address involves the transition from framework of social and environmental investments viewed as necessary but unprofitable to mainstream. This will seek to explore;

- How organisations incorporate social and environmental cost considerations into financial decision making.

RESEARCH QUESTION(S)

The MK 'ELVIS' project would be used to address the following questions;

1. What model/style of decision making is typical for investments with a substantial social and environmental content?
2. What investment appraisal techniques are used if any?
3. What social and environmental costs are considered?
4. How are these social and environmental costs measured?
5. How might this understanding inform programmes to promote the diffusion of environmental technologies e.g. low carbon cars.



METHOD

- Using the MK “ELVIS” project as the case study for the research. Appropriate for the questions raised and according to Yin (2003) appropriate for explorative research.

Data Collection

‘Purposive’ selection of participants of those who have faced issues.

Multiple data gathering methods; combination of survey, interviews and project workshops for business users. (First one held on Oct 6th). Follow up interview with one of the participants already done.

Interviews: Semi-structured questionnaire to explore environmental investment appraisal practices of organisations (Finance Directors/Management Accountants)

Organisational Reports: Annual Reports, internal memos where possible.

Data Interpretation and Analysis

Data would be interpreted and analysed using the New Institutional Sociology (NIS) provided by Dillard, Rigsby, and Goodman (2004)

The framework depicts the socio-economic and political context better, and more directly addresses the dynamics of enacting, embedding and changing organisational features and processes.

Integrates three levels of analysis in management accounting change; Macro Factors, Organisational Field, Intra-organisational imperatives.

Data Interpretation and Analysis

- **Macro Factors**

Overarching influence of management accounting change, emphasises institutional isomorphism for legitimacy.

- **Organisational Field**

Power of industrial coalitions and groupings, competitive pressure as driving force for management accounting change, legitimacy.

- **Intra-organisational Imperatives**

Role of key reflexive organisational participants, internal sponsor, change champion, group dynamics and internal consensus building.

Thanks for your Attention

Comments and Questions Please!!

