

Mech 425 – Green IT Update

Feb 17th & 18th 2010



Green IT Project TA:
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Energy Conservation Measure : ECM
Project Feedback (parts 1 and 2)
Marks: 35.75 to 47.25 out of 50
Correct ECMs
Good Work Overall – Bonuses available?



Important Deadlines & Notes



- **Due Dates:**
 - **Thurs. 18th Tutorial mandatory**
 - Individual ECM overview cont'd
 - fix ECMs - 1/2 class (time permitting)
 - **Correct ECMs by Friday 19th - 8:30 am**
 - **Start Company Audits**
 - **Final Project Due March 12th (~3 1/2 weeks away!)**

Reminder!

Do not post information about your company or its data on Appropedia

ECM to choose from and groups



Consider what ECMs you want to use. Wait for final version.

ECMs	Group
Energy-efficient PC/workstations (Monitors / Laptops / Power Supply)	1
Phantom power reducing Power Bars (2 options ready & not ready)	2
Linear Fluorescent Retrofit (Upgrading to T8 from T12)	3
Server Virtualization	4
Motion Sensor Controlled Vending Machines	5
Telecommuting (needs to be revamped)	6
Energy Monitoring (needs to be revamped)	7
Collaborating documents electronically (needs subtle corrections)	8

Marking Explanation



Marked based on Penalty

- Start at 100%
 - marks deducted for errors
- (I assume you will help fix large errors)

Tougher Marking this round

- Need to have correct ECMs for audits
- I have to correct final errors

The more I have to correct, the less marks you get

- Corrected ECM is mandatory

Marking Explanation – Peer Review



Peer Review:

- Individually review another group (5)
- As a group, use reviews given (5)
- Individual Reviewer marks lost if:
 - I found major errors you did not/ group did not
 - No review by individual
 - late review
- Group “Reviewee” marks lost if:
 - Major errors you did not change that reviewer mentioned

Grading Rubric for Parts 1 and 2 Combined

Group Members:

Student:

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Topic:

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ECM:

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Graded out of 50 points; Final Mark

0

CONTENT: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

0

*Appropriate topic covered thoroughly

3

*Enough information given to understand topic

3

*The presentation was interesting

1

*Technically competent

3

*Page was fully annotated

3

*Complete literature search was apparent

5

*Could be reproduced

2

ECONOMIC and ENVIRONMENTAL ANALYSIS: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

0

*Followed Template – created one of value

1

*Easy to see and follow

2

*Aesthetically Appealing

1

*Correct: Econ

8

Enviro

8

Peer Review: 10 9 8 7 6 5 4 3 2 1 0

0

*Comments were helpful (Individual)

5

*Errors corrected on Appropedia page and ECM (Group)

5

**General
Comments**

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Common Pros/ Great Pros



- **Good template**
- **Covered topic generally well**
- **Colour legend/freeze frames/ other nifty formatting**
- **Printer Area- “View” → “page layout”**
- **Correct Economics for 2 -3 groups**
- **Good Enviro considerations and calcs**

Common Errors & Problems



- 1 group – uploading file error (talk to Amir)
- Refs. not dated in ECM (when accessed or source date) – need to know when valid
- NPV discounting calc. wrong (2 groups got correct)
 - different rates in each year

$$NPV = -C_0 + \frac{C_1}{(1+r_1)^1} + \frac{C_2}{(1+r_2)(1+r_1)^1} + \dots$$

$$NPV = -C_0 + \frac{C_1}{(1+r)^1} + \frac{C_2}{(1+r)^2} + \dots$$

- Correct in videoconferencing ECM example

Common Errors & Problems cont'd



- **Key – BE TRANSPARENT**

- Should not have to search for things
- equations should be easy to find (either on page or in assumptions or an equations page)

- **Spelling and Grammar errors**

- **Weak/ Strong Assumptions –**

Make sure people know this. When doing for Company, show a range of inputs if volatile assumption.

- eg. You assume measure gives 8.2% savings. What if I only do 1%, 3%, 5%? How sensitive is the analysis? Give company targets/ options.

Common Errors & Problems cont'd



- Round to nearest dollar if > \$100
- Print Area – specify letter or legal in 1st page
- Confusion between Year 0 and Baseline
- Limitations not addressed
- Lost Lit. Review marks if:
 - no implementation considerations, limitations, energy & enviro citations
- Named Cells- edit with “Formulas” -> “Name Manager”
- Commercial vs Residential Rates – ask business
- Enviro effects for correct jurisdiction (1 group US)

- **Weak or volatile assumptions**
 - Give company 2 -5 scenarios.
 - Show working for 1
 - E.g changing electricity costs
 - labour costs
 - variable replacement times
 - different % reduction in energy costs

What are the client's motives ?

Ask them questions to improve assumptions

Grading Rubric for Parts 3 and 4

Graded out of 50 points

CONTENT: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

- Recommendation report covered thoroughly
- Well written
- The presentation was interesting and followed directions
- Technically competent
- Aesthetically Appealing

ECONOMIC and ENV. ANALYSIS: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

- Followed Template
- Easy to follow
- Correct (-20 if incorrect)

WORK: 10 9 8 7 6 5 4 3 2 1 0

- Complete audit apparent
- Represented Queen's University well

ECMs to choose from and groups



ECM	Group
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Respective groups are like consultants

Remember Clients are businesses



Important to consider & ask client:

- **Leverage** – level of debt to equity financing
- **Taxation**
- **Depreciation/ Capital Cost Allowance**
- **Tax Credits, Deductions**
- **Insurance**
- **Salvage Value/ Donation/**
- **Electronic Waste Collection (WEEE)**
- **Rebates**
- **Soft Costs : Labour, Transport, Tax on product**

Contact



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No office hours. Make an appointment as a group.

Appropedia Discussion board Green IT project - for global concerns. (no confidential issues posted)

Green IT Appropedia TA is Amir Nosrat