GEOG 470 Electricity Worksheet Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please note that all red ink text below are just examples. Please delete them before you send this sheet to me as an e-mail attachment.

Due date as per syllabus, via e-mail attachment as a Word or Excel file. (Excel preferred) Note that this is the first of two parts of your personal energy project. Part 2 will be the rest of your energy use, and a formal write up of your findings together with some international comparisons.

Instructions: Read your electric meter at the start of a seven day period. Most meters are easy to read because they are digital. If yours is dial-based, consider using the following as a guide: [https://mmurphy.wikispaces.com/file/view/How+to+Read+Your+Electric+Meter.pdf](https://mmurphy.wikispaces.com/file/view/How%2Bto%2BRead%2BYour%2BElectric%2BMeter.pdf) If your residence has no meter (rare other than in dormitory rooms), you may just need to use your kill-a-watt device alone, foregoing the possibility of “ground truthing” your meter results with your measured estimates from the kill-a-watt device.

Next, make a list of all the items in your household/apartment that use electricity. Measure each of their usage using kill-a-watt meter. For items whose power use cannot be measured with the meter, estimate it by going online and looking for the technical specifications of the appliance, or when either not practical or dangerous, the website: <http://michaelbluejay.com/electricity/howmuch.html>

After you have done all of your kill-a-watt measurements and estimates for each item and its cells, add up all values at the weekly level and compare it with the usage at your meter for a week. If you live in a household with other people, then obviously you will need to estimate your role in the total electricity use. (The simplest result is to look at the total use amount at the meter and divide by the number of people. This works ok unless there are obvious differences between residents). Discuss likely reasons for any discrepancies between your estimate and actual metered kilowatt-hours. Note: this sheet can be transferred to Excel if you wish, and the number of rows will probably need to be increased, depending on how many things use electricity in your household.

Words of advice: use common sense and be systematic and thoughtful as you do this project.

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| --- | --- | --- | --- | --- | --- | --- |
| appliances: (list by type, model & location) | power utilized when on (watts) | Average #hrs. “on” per day | watt-hrs. per day | kWh per week | notes | Estimate?(if so, footnote the method used) |
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| light bulbs: (list by type & room) |  |  |  |  |  |  |
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|  lights subtotal |  |  |  |  |  |  |
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| other items |  |  |  |  |  |  |
| HP Pavilion Computer | ~20 wattsThese lines are an example!! | 4 | 80 | .56 | power range 16-90 w. | 1 |
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| Phantom loads: |  |  |  |  |  |  |
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| Totals |  | --- |  |  |  |  |

Meter reading at beginning:\_\_\_\_\_ meter reading at end:\_\_\_

How many kWh did your house utilize during the seven day period?\_\_\_

How much does this vary from your estimate of kWh per week?

Discuss:

Footnotes: (students note that this is an example of how to write an explanatory footnote about methods of estimation)

1. recorded hours of daily usage for seven days, used kill-a-watt device to measure average power utilization for one 4 hour session, which was .08 kWh or 80 watt-hours. Computer is left off when not in use.