CurrentSee

Group Program: Cracker:

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What are we doing wrong?

- Energy uses fossil fuels: gas, coal, etc
How can we take action?

• IDEA:

get consumers to SEE their CURRENT electric usage!

allow them to understand the difference they can make

Current See: providing a usable solution

• user friendly
• intuitive
• inspirational
Basic Idea:

• Retrieves energy data from the clients house
• Processes the information
• Relay useful statistics back to the client

Smart Meters

• Replace conventional meters
• Transmit power usage every 15 minutes
• Connected directly to power company
Smart Meters

- 37,290,374 installed as of January 10, 2013
- SDGE, PG&E, or SCE customers have one already in their homes

How Smart Meters Work

source: http://www.eia.gov/tools/faqs/faq.cfm?id=108&t=3

How is this data used

- Most do not know it exists
- Accessible via utility websites
- Cumbersome

When Does My Home Use Energy?

For more detailed analysis and graph options, go to My Energy Use.
Green Button Data

- Government backed program
  - Started last year
- Make power data accessible to consumers
- API for third party applications to use

How we use it

- Easily view your home energy usage
- Groups
  - Compete with friends
- Smartphone accessible
  - Check your usage on the go!

CurrentSee

Home Usage - SDGE to zoom in, click and drag over plot area

Consumption Graph

[Graph showing energy usage]
Partner: San Diego Gas & Electric

- In testing phases with SDGE
  - Currently have test data transmitted to our server
- View your home power usage
- Extensible to any utility

Partner: Energy Institute at UCSB

- Power usage for every on campus building
  - Green Button-style data
- Energy Competitions
  - Competitions drive change
    - Main focus of our application
What we're using

- django
- python
- amazon web services
- B
- MySQL

Operating Environment
Why?

Put data to good use
- Educate and produce efficient electricity consumer
- Use data set to find trends in electricity consumption
  - State, County, City, Neighborhood
  - Year, Month, Week, Day, Hour

Green Button Data
Green Button Data

Click

Then

Export your data
For your review in a spreadsheet program (.csv file)

- Export all

- Export usage for a range of days

For developers and third parties (.xml file)

- Export all

- Export usage for a range of days

From: 03/08/2010 To: 03/08/2010

Export
Detailed Stats

Hourly, Daily, Monthly, Yearly data graphs.

Comparisons to neighborhood averages and previous pay periods

Detailed peak hour usage stats

Setting up Alerts

Pick:
- a. type
- b. method
- c. value

Get alerts every month!
Progress

Done:
- Web server up and running
- Database setup
- Login page, registration page, database integration
To do's

Store XML  Graph the Stored Data  Show graphs and include features

Obstacles

• New technologies
• Different Platforms
• Power Companies responding

(issues with connections)
Overcoming Obstacles

- Lots of reading
- Cooperation of the power companies
- Thinking of backup options

Questions?
Why?

- 60% of oil fields are now post peak and the average rate of decline is 6.9%.
- To meet increasing demands, we need 120 million barrels of oil a day by 2030.
- Saudi Arabia has the world’s biggest oil fields, and it produces 10 million barrels a day now.

Information retrieved from ENGR101 PPT-Olivia Walling
Why?

- 1 billion 60-watt incandescent light bulbs weigh 20,000 metric tons (with packaging)
- When they are all on, they will consume 60 megawatts of electricity, requiring a new power plant just to keep them burning
- If the power plant is coal fired, it will burn 1.4 million tons of coal per year

Information retrieved from ENGR101 PPT-Olivia Walling

Progress

Done:
- Web server up and running
- Database setup
- Login page, registration page, database link

Todo:
- Store XML data
- Graph stored data
- Website Features