

# **Energy Information Services Trial**

**Steve Phillips  
PG&E**

## The EIS Trial:

- Market Research Effort from 1994 to 1997
- Test In-Home Energy Information Services

## Three Trial Participants:

- TCI
- Microsoft
- PG&E

# Energy Information Services Trial



**EIS  
TRIAL**

**Microsoft®**

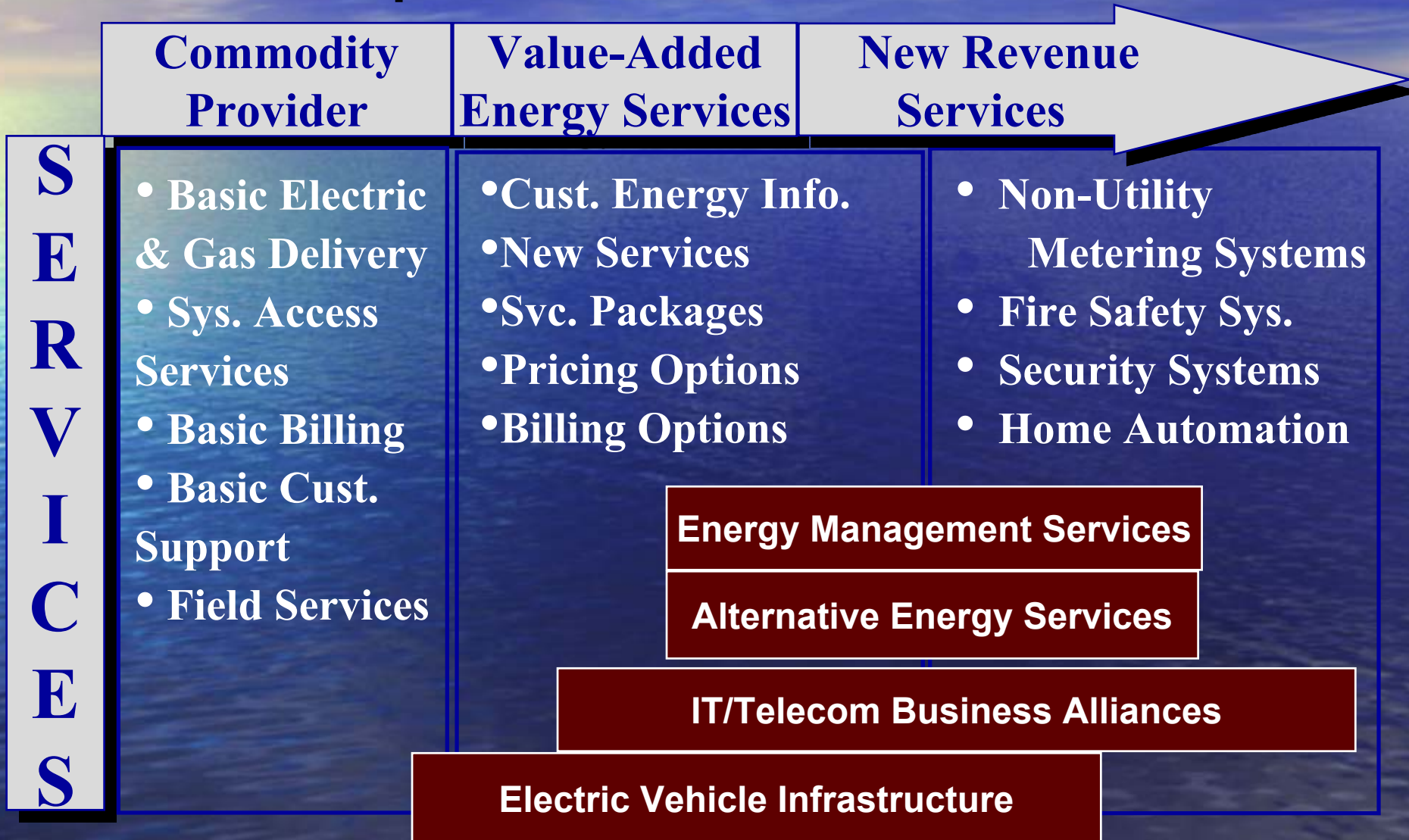




# The Usual Suspects

- PG&E
  - Steve Phillips
  - Belvin Louie
  - Dale Fong
- Energyline
  - Ron Hoffman
  - Gaymond Yee
- Diablo Research
  - Don Pezzollo
  - Charles Glorioso

# Energy Services Company Example





# PG&E's Goals in the Trial

- Determine the value of EIS to utility customers and to the Utility
  - Revenues from customers
  - Demand side management (DSM) savings
  - Operational savings
- Define and test new services that could be marketed by a utility to energy customers.
  - How are the services bundled
    - Basic plan
    - Link to security or home automation
  - New services
  - Technology

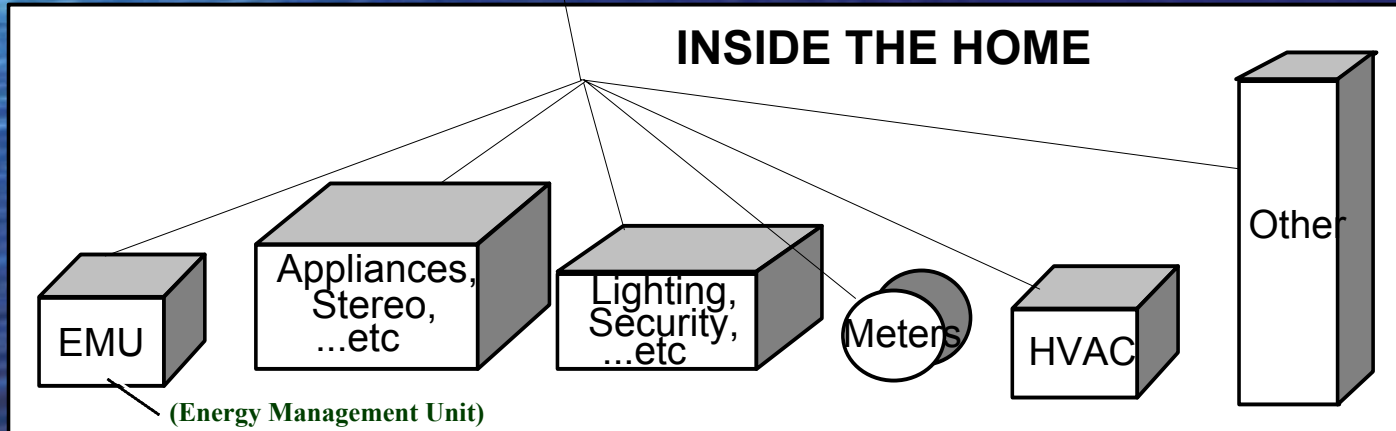
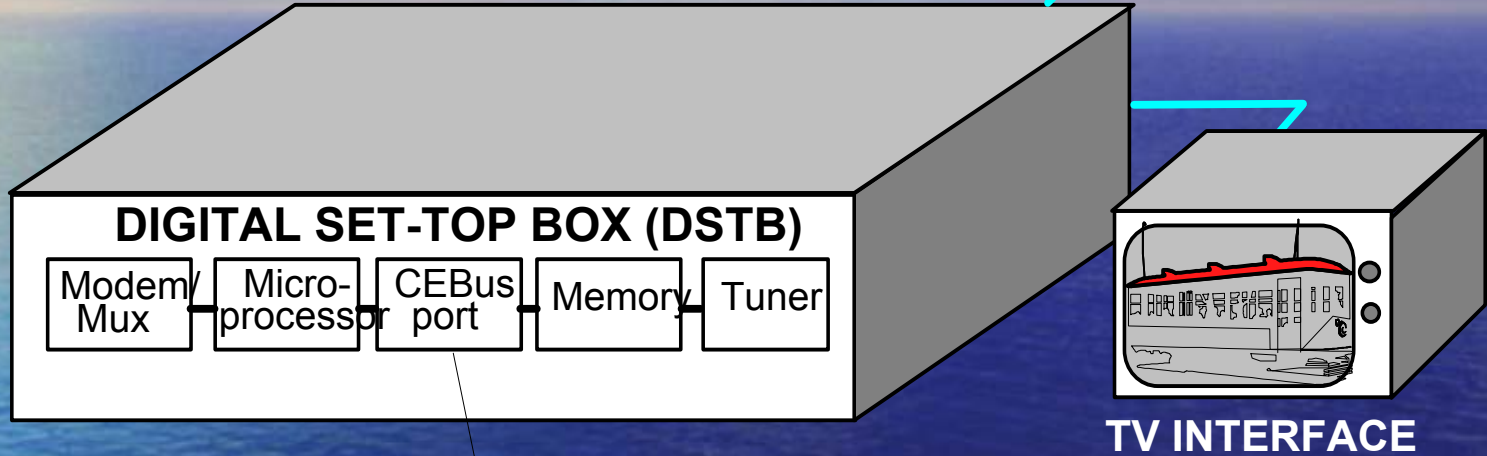
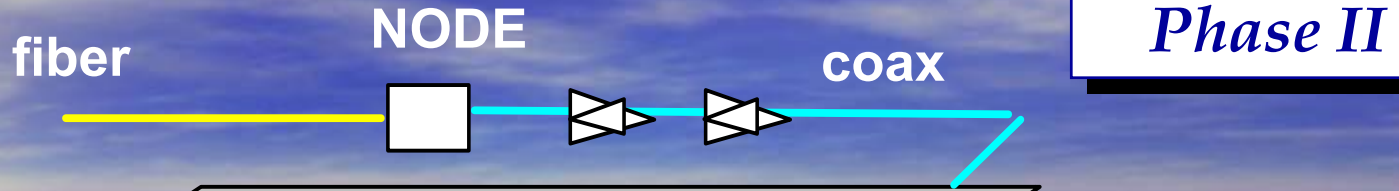
# The EIS Trial - Phase I & II

- TCI
  - Network and Set Top Box
- Microsoft
  - Operating System Software
- PG&E
  - Energy Applications Software
  - In-home LAN (Local Area Network)

40 Home Trial in Walnut Creek

# RESIDENTIAL

## NEIGHBORHOOD





# Applications

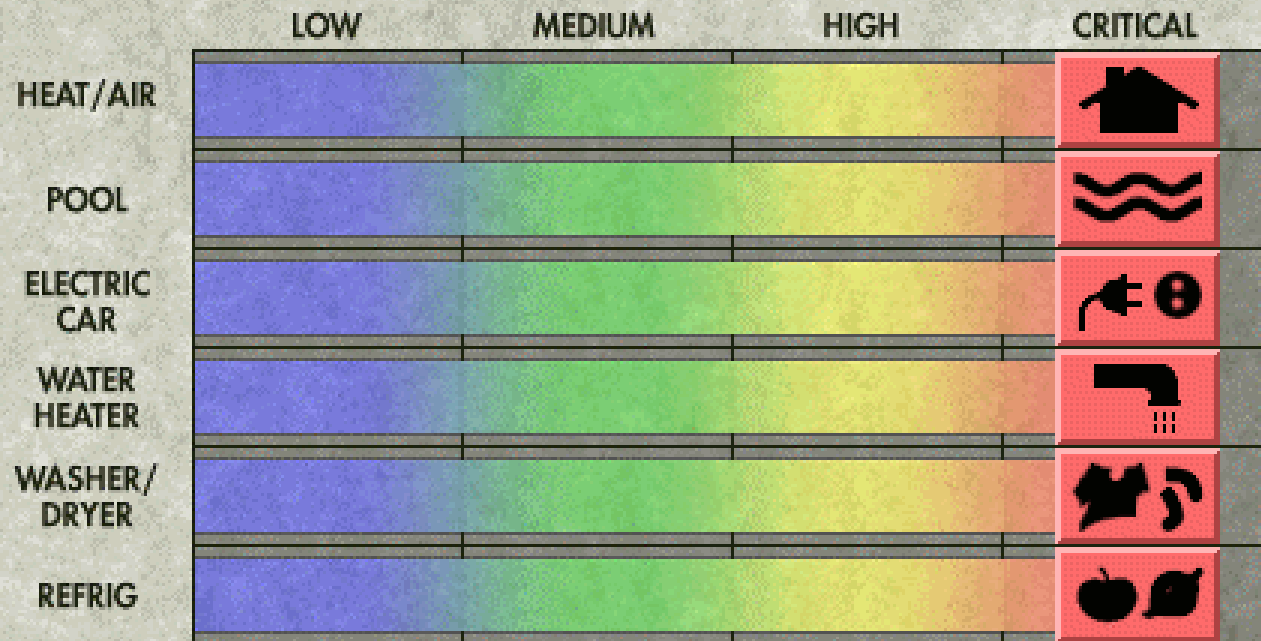
## RESIDENTIAL

- **Time of Use Pricing**
- **Demand Side Management Applications**
  - **Distributed load control**
- **Outage Detection**
- **Segregated Billing**
- **On-Line Energy Use and Forecast**
- **Electronic Billing and Bill Payment**
- **Home Automation Applications**
  - **Lighting control**
  - **Security systems**

# PAYMENTS DUE

Clarice Morgan

## HOME POWER PROFILE



MAX ECONOMY

MAX ENERGY



PROFILE



CONFIRM SETTING

CUSTOMER SERVICE

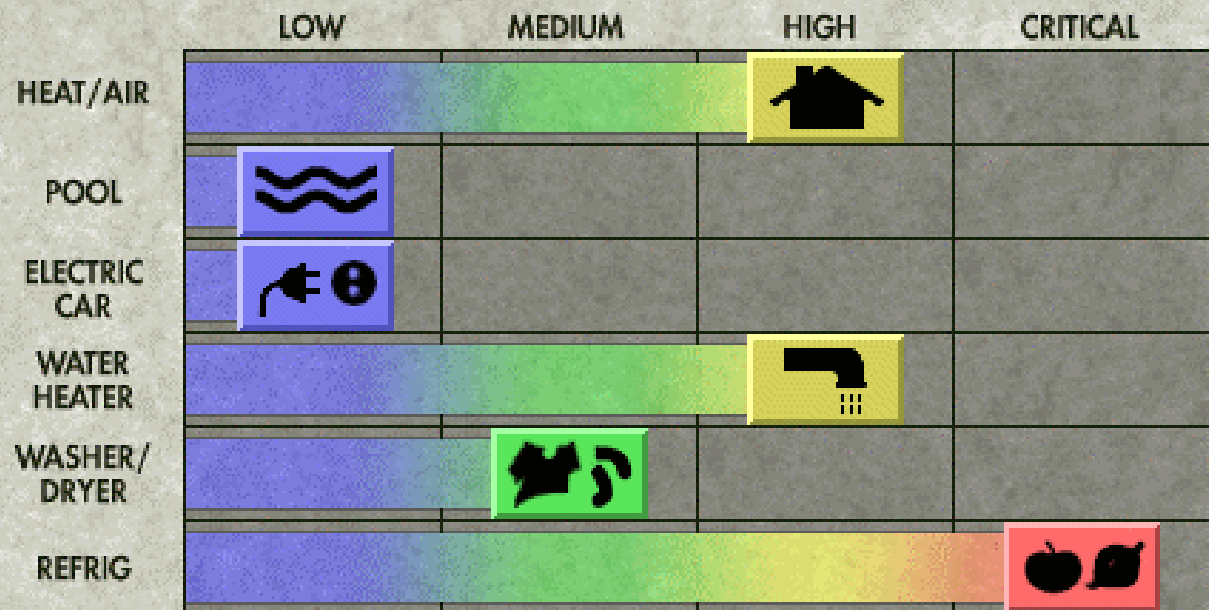
EXIT



# PAYMENTS DUE

Clarice Morgan

## HOME POWER PROFILE



MAX ECONOMY

MAX ENERGY



PROFILE



CONFIRM SETTING

CUSTOMER SERVICE

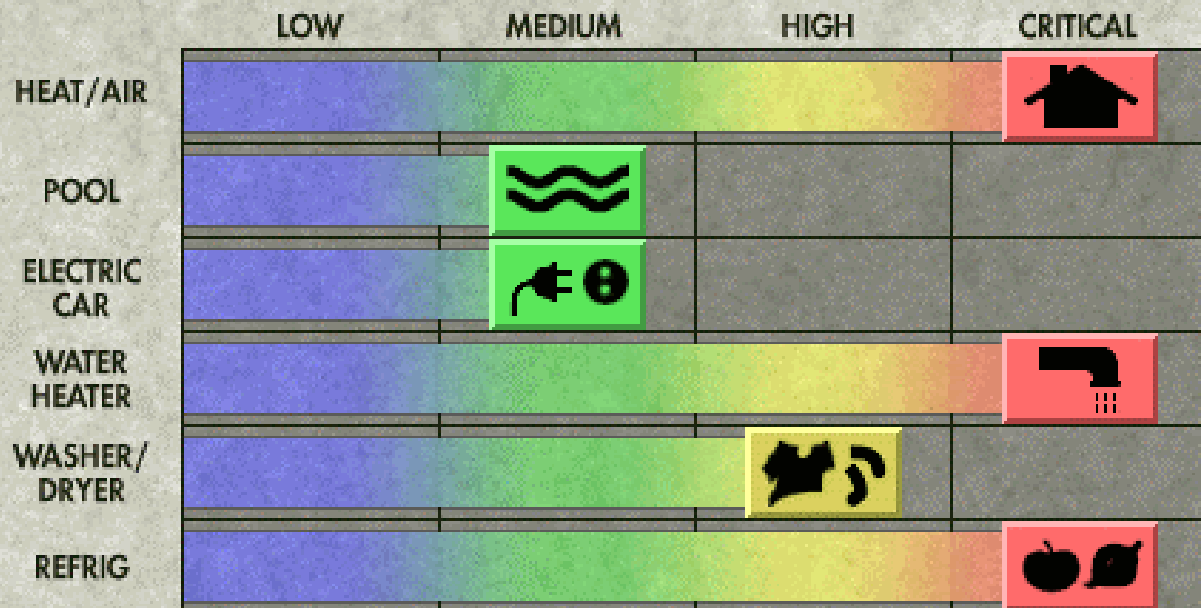
EXIT



# PAYMENTS DUE

Clarice Morgan

## HOME POWER PROFILE



MAX ECONOMY

MAX ENERGY



PROFILE



CONFIRM SETTING

CUSTOMER SERVICE

EXIT



# Energy-Management Unit



EMU

ELECTRIC  
METER

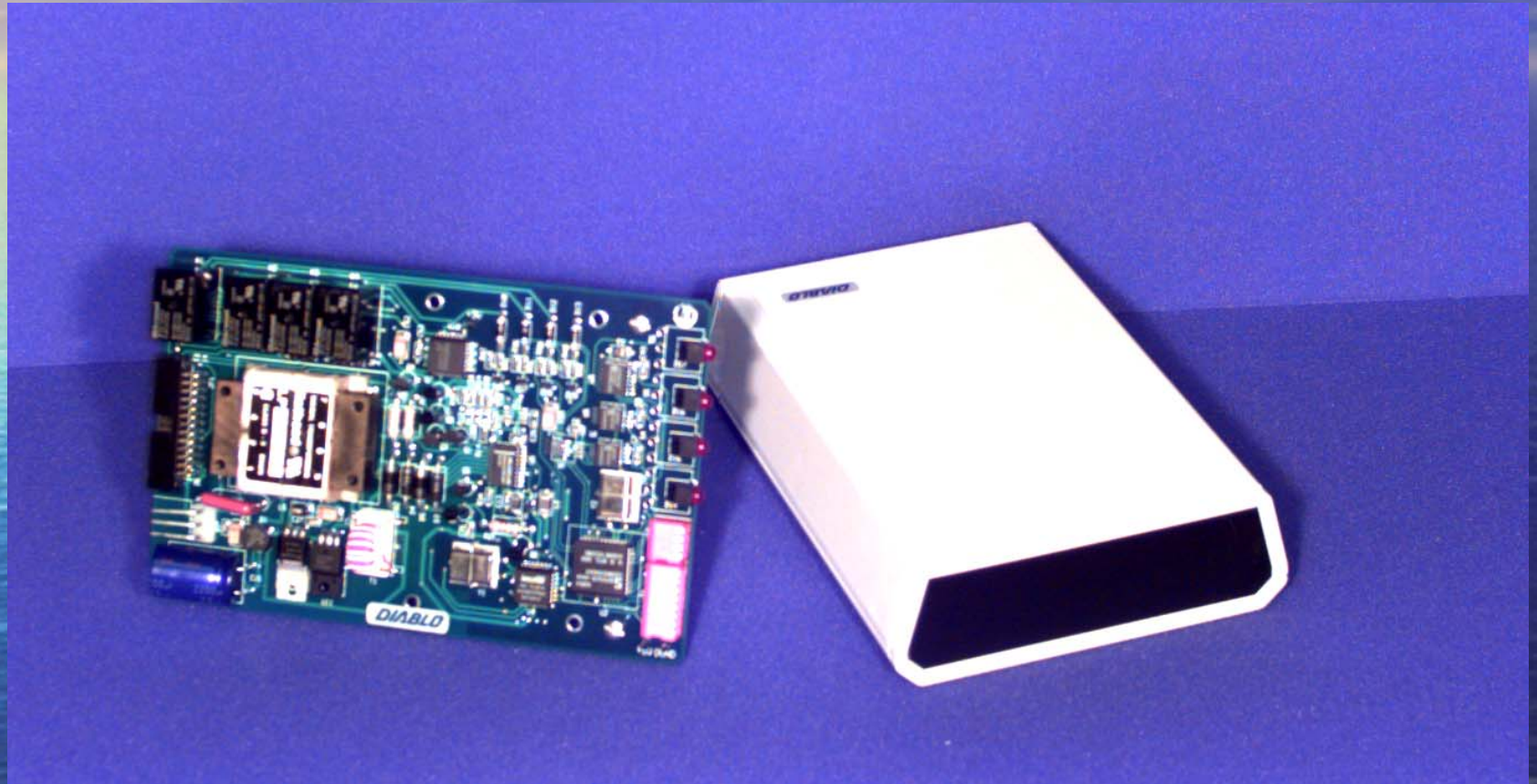


# Electric Meter

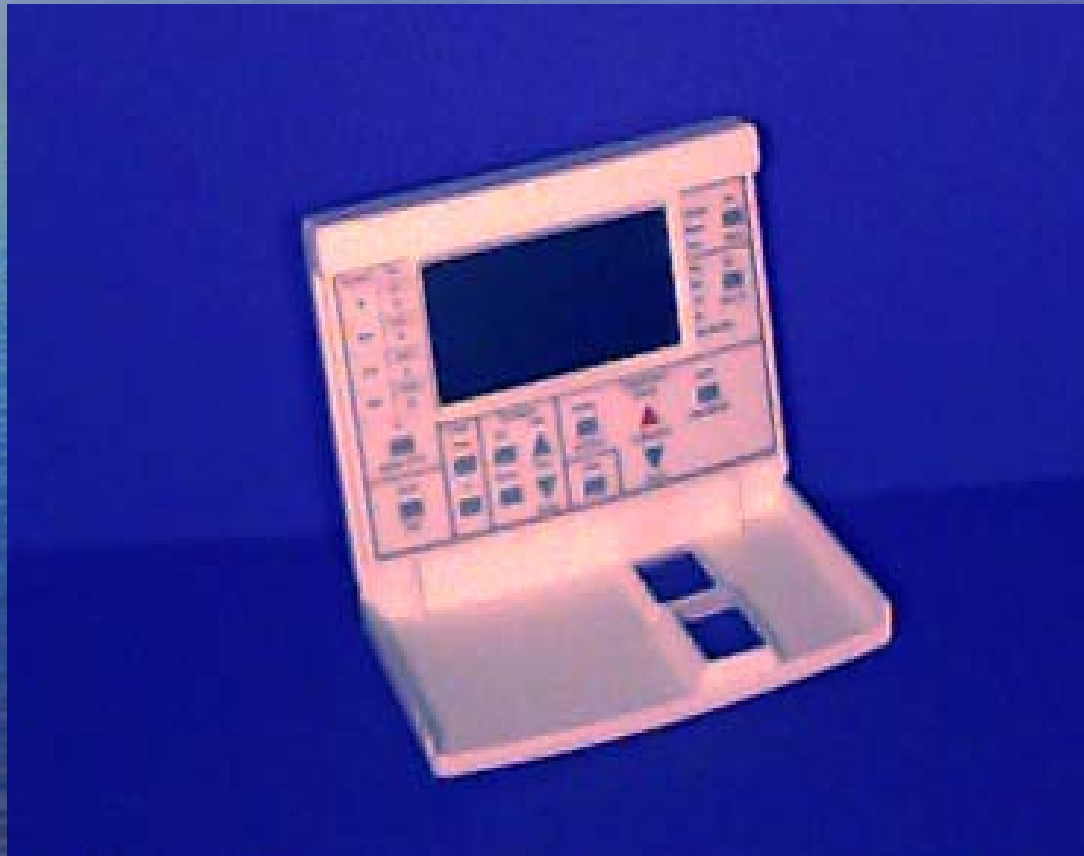




# Appliance Modules



# CEBus Thermostat





# The EIS Trial - Phase III

- Market Research Effort
- Test In-Home Energy Information Services

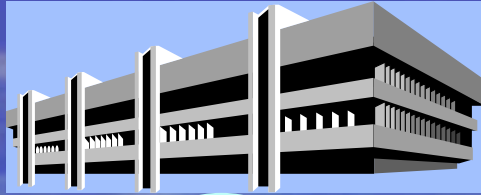
## Two Trial Participants

- Microsoft
  - Operating System Software
- PG&E
  - Energy Applications Software
  - In-home network (plc)
  - RF back channel

**\*TCI will remain associated with the Trial**



# Energy Information Services Phase III Architecture - Proposed



## EIS Services

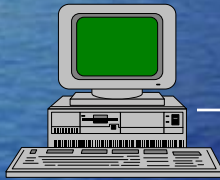
- ▲ Online Energy Services
- ▲ Electronic Bill Payment
- ▲ Customer Service

Utility Co.



EIS Web Server

Internet Modem



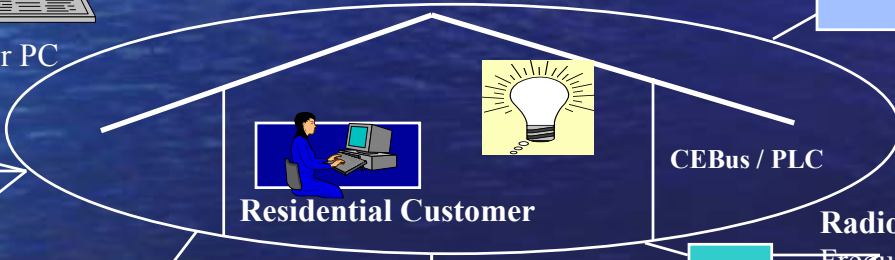
Customer PC

RF Back Channel



EMU

Energy Management Unit



Residential Customer

CEBus / PLC



Electric Meter

Radio Frequency

Base Station



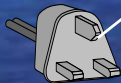
Water Meter



Gas Meter



Lighting Systems



HVAC Control



Appliance Interface Module (AIM)

# EIS Affiliate Program

- Five utilities participating at four sites.  
(5 w/PG&E)
  - Three domestic
  - Two international
- Access to technical, economic and market research.
- Affiliates will help mold and customize the applications for their customers.
- First hand experience with key competitive tools and a potential new revenue source.



**Microsoft®**

**PG&E**

 **Brooklyn  
Union**

**TCE**

 **ORANGE AND ROCKLAND**

*Pacific Enterprises*

**LANDIS & GYR**

 **VATTENFALL**

  
**POWERGEN**



# Timing is Everything!

- Trial got caught up in Energy Restructuring and had to be shut down.
- It was too soon, in California, for adopting the rate structure to incent real time pricing.
- The technology wasn't quite there yet to meet the price points required for the commercialization of the trial.



Questions?