



ELECTRONIC FRONTIER FOUNDATION eff.org

Energy Data Center: Privacy issues

CA Public Utilities Commission

Energy Data Center workshop

January 15, 2013

Lee Tien, Senior staff attorney

Electronic Frontier Foundation



"We, Siemens, have the technology to record [energy use] every minute, second, microsecond, more or less live. From that we can infer how many people are in the house, what they do, whether they're upstairs, downstairs, do you have a dog, when do you habitually get up, when did you get up this morning, when do you have a shower: masses of private data."



Privacy threats: person or **profile**?

- NALM (non-intrusive load monitoring)
 - Detection of appliance activation, class
- Use-mode detection
 - Video content on TVs, monitors
 - Popular websites being rendered
- Behavior deduction/consumption profile
 - Not merely energy data....“big data”
predictive algorithms



Three sets of issues

- Policy: what should we be doing?
- Legal: what can we do?
- Technical:
 - Evaluate privacy/security risks
 - Implementation of appropriate safeguards for use, access



Usage data policy issues

Overarching FIPPs framework

(e.g. data minimization, customer consent)

Who should have access?

- 1) Currently looking at researchers, local gov'ts
- 2) But prepare for mission creep (incentives)

Empirically establish status quo

- 1) Existing utility access protocols?
- 2) Problems encountered by researchers etc.?
- 3) Are both sides being reasonable?



Legal issues

- 1) PG&E survey of applicable law
- 2) State constitutional privacy right!
- 3) Reinforced by IPA for state entities
 - a) How does Civ. C. § 1798.24 bind PUC?
 - b) What about provisions re data disclosure to nonprofit researchers?
- 4) PUC ruling provisions re usage data*
 - a) Risk of re-identification
 - b) “Aggregated”?
 - c) Reveal “specific customer information”?



Technical issues

- 1) Security: risks of unauthorized action
- 2) Privacy: apply legal requirements to authorized actions
 - a) Understand re-identification risk for individual, customer etc. (“covered information” definition)
 - b) Understand revelation of “specific customer information” (use of “aggregated usage data”)
 - c) Use technical expertise to generate legally compliant implementation for use, access, etc.