

Towards an Illinois Evaluation Framework

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For the Illinois DSM (Ameren Illinois & Exelon/ComEd)
Stakeholders Advisory Group)

What we will Cover

- History - Evaluation for DSM/EE & DSM/DR
- Five Frameworks (CAL, EVO, NE, WI, EU)
- Scope & Content for the Illinois Evaluation Framework

Quick History of Evaluation

Before there could be evaluation as we know it today, the basic tools had to be invented.

- Five roots of program evaluation are in agricultural research, intelligence services, public health/medicine, educational evaluation, and scientific research.
- But program evaluation as we know it today, came together in a big way in the 1960s .

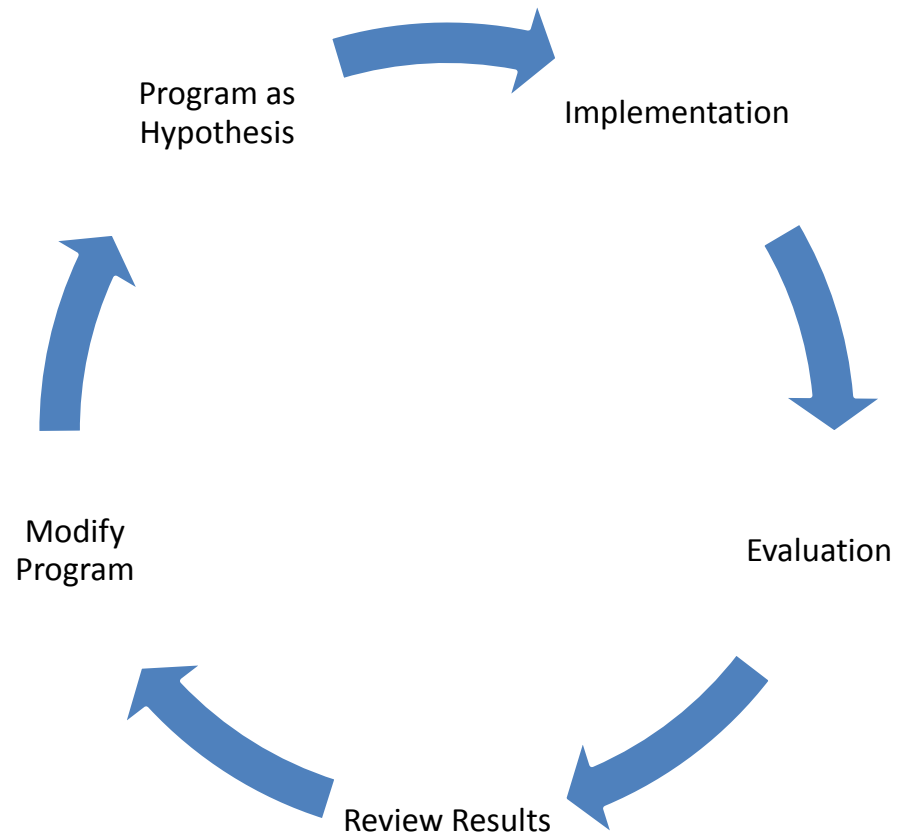
Quick History of Evaluation

- Program Evaluation came into its own in the 1960's during the War on Poverty
- Kennedy & Johnson administrations were informed by **optimism** and an emphasis on **rational problem-solving**.
- Donald T. Campbell, in the period from 1959 through 1974 put forward the model of the “**experimenting society**.”

The “Experimenting Society”

- Reforms should be implemented in the form of Programs.
- The programs are, in essence, a kind of scientific hypothesis – “if we make these changes, we should get these results”
- Evaluation assesses both the program process and the program impacts.

The “Experimenting Society”



What Makes Evaluation Work

1. An emphasis on the material world (the world is real -- what is called a “critical-realist ontology”)
2. An **evolutionary perspective** (we are engaged in a process of institutional learning – if we work hard, collaborate, and learn well, we succeed; if we fail evolution eliminates us.)
3. Reliance on the **model of research used in the physical sciences** (so, for example, evaluation designs parallel the true experimental designs used in physical science, and the use of “baseline” and/or “comparison groups” where possible.

What Makes Evaluation Work

4. Belief in the model of social experimentation (“we will try this program to try to get these results”)
5. Reliance on the concept of “cause” or “lawful production” (“if call a load event, we can count on reliable demand response”)
6. Understanding that facts are different from values, orientations and beliefs

What Makes Evaluation Work

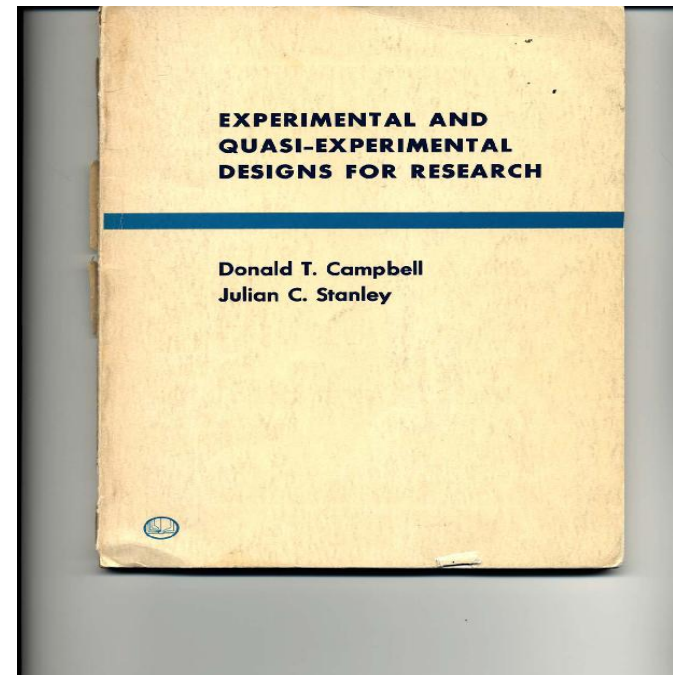
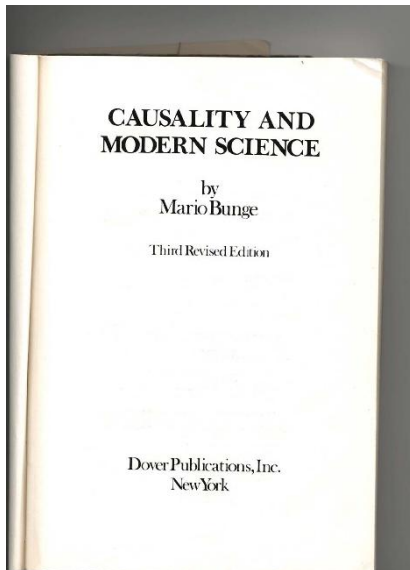
- Agreement on the common goal to pursue **truth in measurement** (sometimes called “the correspondence theory of truth”)

Evaluation Frameworks

- Early Framework: Scientific Texts and Borrowed Methods (through about 1992)
- California DSM Evaluation Framework
- New England DSM Evaluation Framework
- Wisconsin Evaluation Framework
- Energy Valuation Organization Framework
- European Union DSM Evaluation Framework - newest

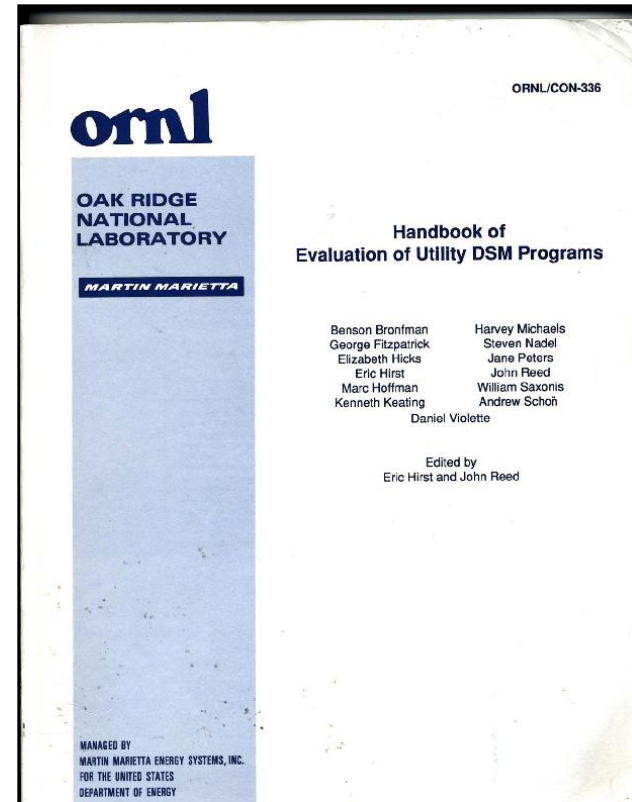
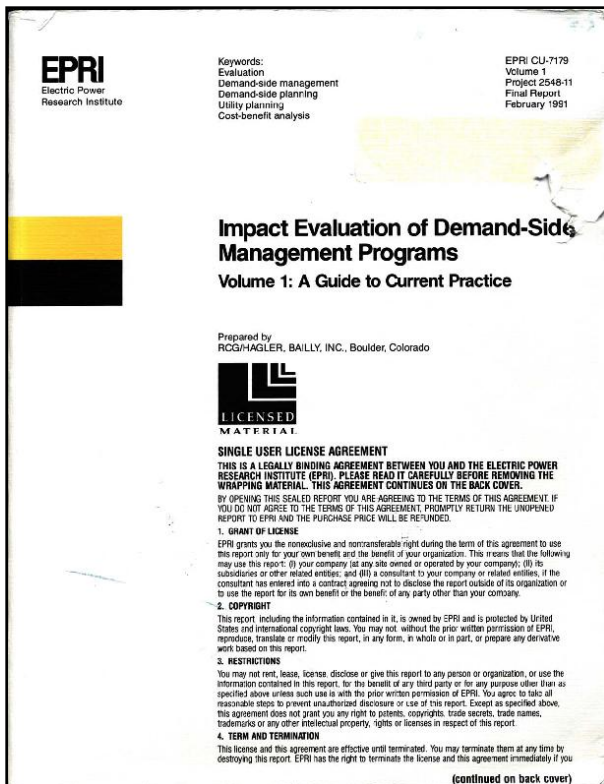
Early Evaluation Framework

- Scientific texts, and classifications of evaluation designs, statistical methods, types of causality...



Early Evaluation Framework

- First Systematic Treatment from Oak Ridge National Laboratory, Lawrence Berkeley Laboratory, Electric Power Research Institute



Evaluation Frameworks

- Work began in early to middle 1990 and continues in California, the New England States, and in the effort that became the Energy Valuation Organization (EVO).
- California Commission mandated a formal Evaluation Framework
- In New England the current framework grew gradually out of the New England collaboratives (there is also now an ISO New England framework, but that is separate).
- EVO was a federal project at LBL, but is now an independent corporation. It has been through many iterations.

Evaluation Frameworks

- The European Union effort is new, and is expected to be completed in the Fall of 2008.
- We will skip over the evolution of these frameworks and focus on the current versions

California Evaluation Framework

- 2001 - *Standard Practice for Cost-Benefit Analysis of Conservation and Load Management Programs*
- 2004 – *The California Evaluation Framework*
- 2006 – *California Energy Efficiency Evaluation Protocols: Technical, Methodological, and Reporting Requirements for Evaluation Professionals*

California Evaluation Framework

Project Number: K200391D


The California Evaluation Framework

Prepared for the California Public Utilities Commission and the Project Advisory Group


February 2004

TecMarket Works
And the project Team Members:

- Megdall & Associates
- Architectural Energy Corporation
- RLW Analytics
- Resource Insight
- B & B Resources
- Ken Keating and Associates
- Ed Vine and Associates
- American Council for an Energy Efficient Economy
- Ralph Praeli and Associates
- Innovologie



The logo for TecMarket Works, featuring the word "TECMARKET" in a bold, sans-serif font above the word "Works" in a smaller, italicized font, with a stylized bar chart graphic behind the text.



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California Energy Efficiency Evaluation Protocols: Technical, Methodological, and Reporting Requirements for Evaluation Professionals

APRIL 2006

Prepared for the California Public Utilities Commission
by The TecMarket Works Team

Under Contract with and Directed by the CPUC's
Energy Division, and with guidance from Joint Staff

California Evaluation Framework

- Currently California is in the middle of an evaluation cycle that costs more than \$50 million – just for the evaluation work.
- The California Framework and Protocols are a “living document” and are continuously evolving as evaluations are conducted and unforeseen situations are encountered.

California Evaluation Framework

- The **Standard Practice Manual** for Economic Analysis of DSM Programs and supplementary files can be downloaded free from www.cpuc.ca.gov/PUC/energy/electric/Energy+Efficiency/EM+and+V/
- The **California Evaluation Protocols** and the earlier, but still relevant **California Evaluation Framework** can also be located from this California Commission website.

New England Evaluation Framework

- Grew naturally out of the early DSM Collaboratives in the New England States.
- Gradual consensus to shift from a utility focus to statewide and regional understandings over many years.
- Move toward regional standard practices accelerated by the NE ISO's 2007 M&V protocols for its Forward Capacity Market.

New England Evaluation Framework

- ISO's Protocols focus on estimation of gross demand savings, emphasizing measurement approaches, sampling methods, and precision.
- Still much evaluation being done in NE based on informal state-level frameworks.
- Entire Northeast may be evolving toward a single evaluation protocol driven partially by RGGI.
- However, informal state-level frameworks are likely to persist in coexistence with protocols.

Wisconsin Evaluation Framework

- Uninterrupted 25-year history of EE programs.
- Evaluation has always been either closely regulated or directly managed by state agencies.
- Framework largely informal, with unwritten agreements and understandings on many issues.

Wisconsin Evaluation Framework

- Written policies developed on specific evaluation issues as they become controversial or problematic.
- Current, in progress example: written standards for estimation of net-to-gross ratios.

Efficiency Valuation Organization (EVO)

International Performance and Measurement Verification Protocol (IPMVP)

Vol. 1 – Concepts and Options for determining Energy & Water Savings

Vol. 2- Concepts and Practices for Improving Indoor Air Quality

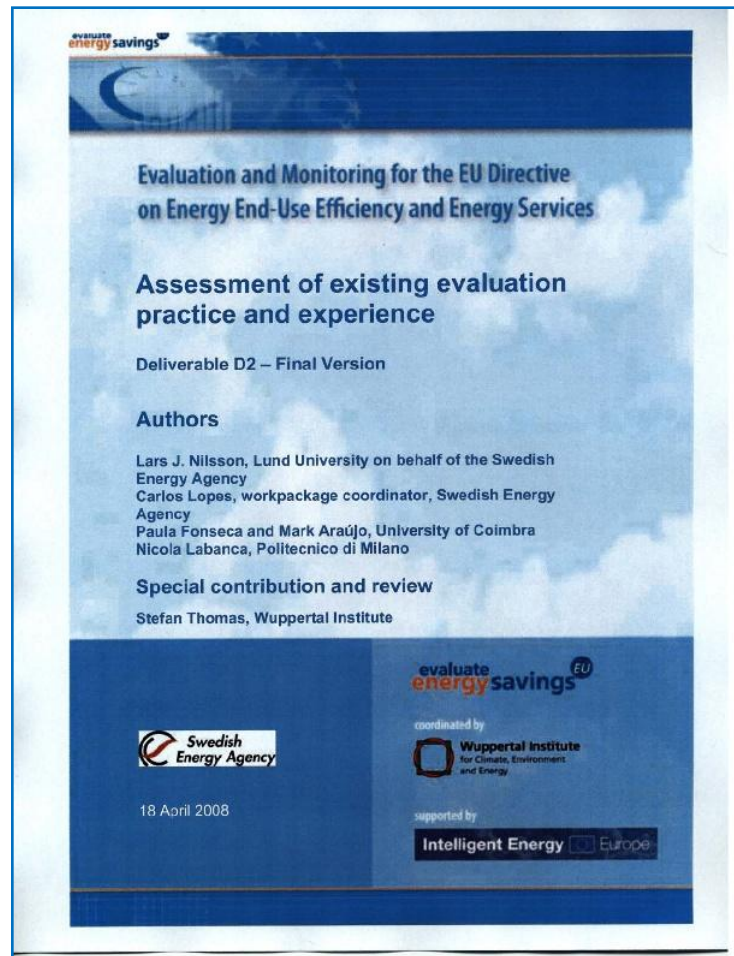
Vol. 3 – Part 1 – Concepts and Practices for Determining Energy Savings
in New Construction

Vol. 3 – Part 2 – Concepts and Practices for Determining Energy Savings
in Renewable Energy Technologies Applications

Efficiency Valuation Organization (EVO)

- IPMVP Volumes can be downloaded free (www.evo-world.org/) or ordered as bound publications for a fee
- EVO offers evaluator training through M&V and IMPVP Workshops (www.aeecenter.org/seminars/)
- EVO offers Evaluator Certification with Association of Energy Engineers (AEE:) Certified Measurement and Verification Professional (CMVP) Program

European Union DSM Evaluation Framework (EMEES)



European Union DSM Evaluation Framework (EMEES)

- The support of the twenty-one European co-operating organisations includes a collection and comparative analysis of good practice in monitoring and evaluation methods,
- a process for the development of harmonised bottom-up and top-down evaluation methods,
- the concrete development of up to 20 different methods for bottom-up and up to 15 methods for improved top-down evaluation, harmonised across the EU,
- combined top-down/benchmarking and bottom-up evaluation methods to prove achievement of the 9 % target, both ex-ante and ex-post,
- six pilot tests of real programmes, services, or other measures, using the methods developed

European Union DSM Evaluation Framework (EMEES)

- Dr. Stefan Thomas
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European Union DSM Evaluation Framework (EMEEES)

- Reports can be downloaded free from
<http://www.evaluate-energy-savings.eu/emeees/en/home/index.php>
- Incorporates information from California and EVO
- Project began in November 2006; runs till April 2009
- The final conference of the EMEEES project - **Harmonised Methods for Evaluating Energy End-Use Efficiency and Energy Services** - will be held in Brussels on 15 October 2008

Towards the Illinois DSM Evaluation Framework

- Reporting Requirements – Standardize Program Evaluation Reports (content and format)
- Statement of role of SAG in development and review of program evaluations
- Balancing of available resources and level of rigor (reliability)

Towards the Illinois DSM Evaluation Framework

- Deemed and un-deemed savings (re: ICC Orders)
- Measuring performance with respect to legislatively mandated goals

Towards the Illinois DSM Evaluation Framework

- Focusing resources and effort across programs and with respect to impact and process evaluation elements
- Type and depth of evaluation appropriate to each type of program
- Level of statistical precision and power for each type of program

Towards the Illinois DSM Evaluation Framework

- Standards for determining net-to-gross (NTG) ratios
- Specification of the process for determining deemed values (with SAG, Utilities, & DCEO)
- Specification of contents and format of evaluation work plans

Towards the Illinois DSM Evaluation Framework

- Handling “free riders” and “free drivers”
- Requirements for level of skill in each program evaluation
- Requirements for M&V installation verification

Towards the Illinois DSM Evaluation Framework

- Requirements for critical review of program data tracking systems
- Minimum process evaluation requirements

Towards the Illinois DSM Evaluation Framework

- And more...

The Evaluation Framework will be a living document.

Minimum specifications and observance of principles.