# Data and Analysis Supporting Equipment Energy Efficiency Initiatives

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*Michael McNeil, Ph.D.*
*Lawrence Berkeley National Laboratory*

# Presentation Objectives

- Lay out how detailed and robust data and analysis strengthen initiatives seeking to accelerate progress on equipment efficiency.

- Outline key elements of data/analysis, report on progress to date and indicate prospects for improvement/expansion.

- Provide an example from SEAD where data and analysis has been used to articulate progress and gaps on a global scale.

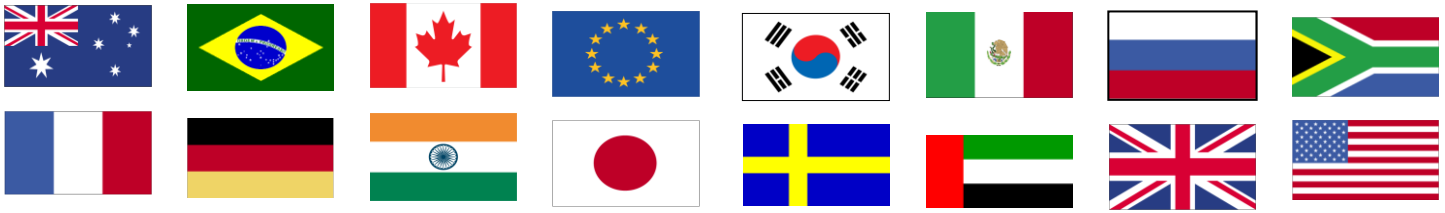
# SEAD is a multinational government collaboration whose primary objective is to accelerate global market transformation for energy efficient products


- Technical Assistance
- Best Practices
- Peer Community Support
- Showcase Leadership in Energy Efficiency

**Measures taken by SEAD partners since its launch in 2010 could save 700 TWh of electricity per year by 2030***

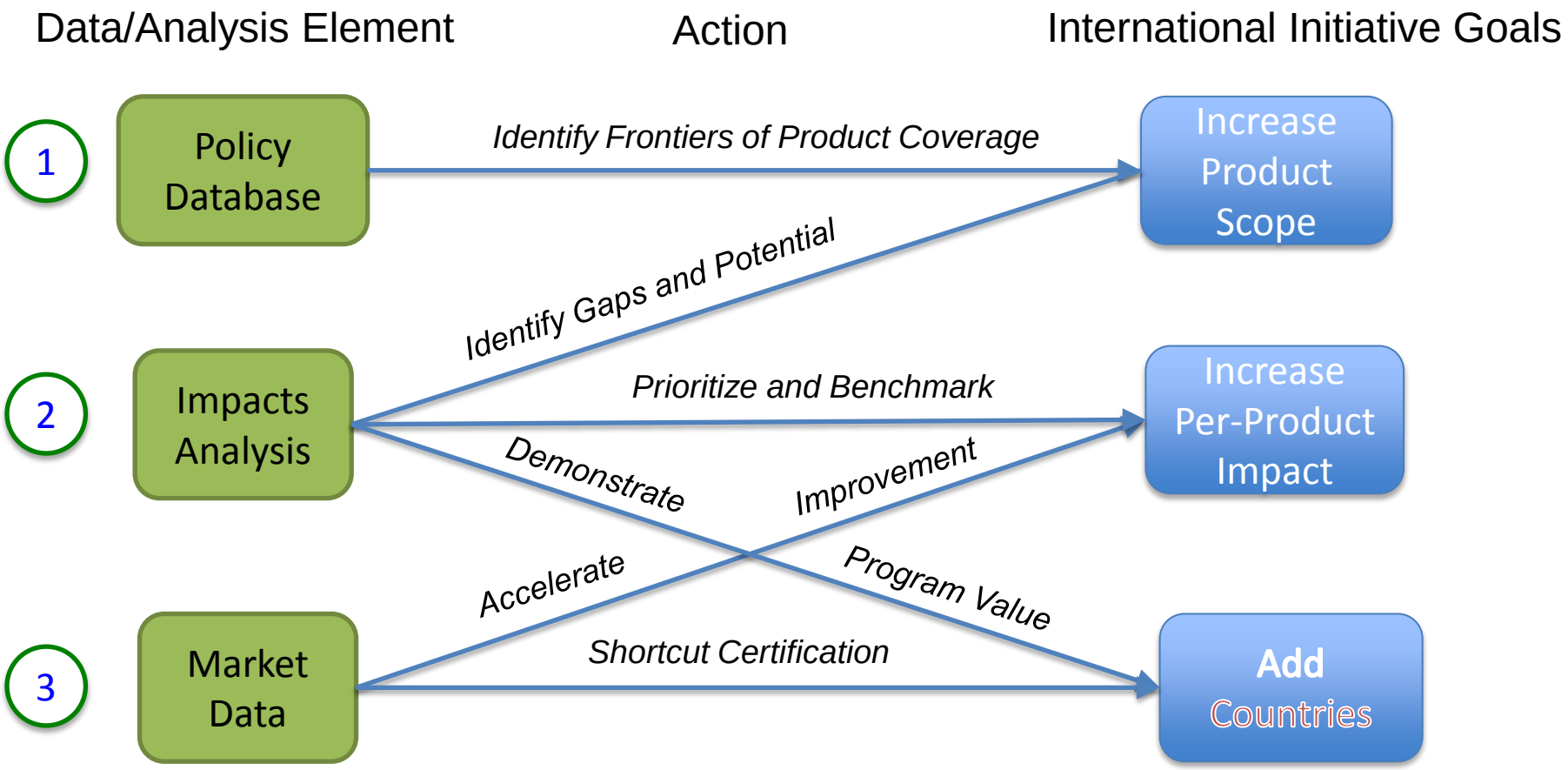
* = Energy produced by 233 mid-sized coal-fired power plants.

Participating Governments

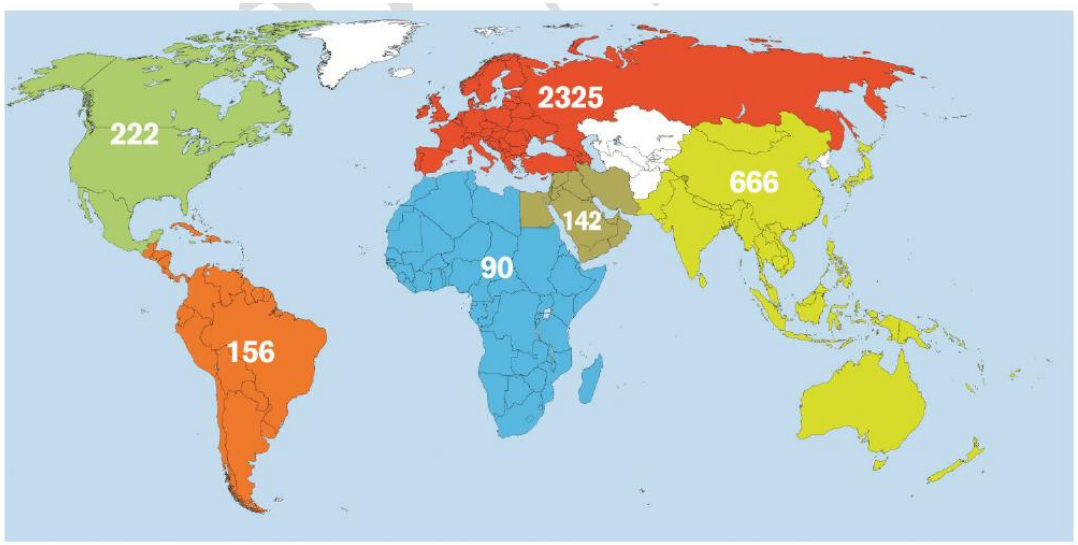


Observers

# *Data and analysis of policies and technologies is critical to provide global leadership on efficiency policy and technology assessment*



# *Element 1 - A database of efficiency policies facilitates best practices and replication*




- What are end uses most commonly included?
- What are emerging trends in end uses covered?
- Where are gaps?

Source: EES/Maia for Australia DoI

| Name | Scope | Needs |
|---|---|---|
| EES/Maia Global S&L Report | Global Equipment EE | Keep up to date |
| CLASP S&L Database | Global Equipment EE | Incorporate recent data |
| SEAD Activity Schedule | SEAD Countries | Add China, update above |
| IEA PAM Database | EE+RE Policies | Incorporate S&L details |

# *Element 2 – Stringency and Impacts Analysis helps prioritize and track progress*

***Estimated future l savings from MEPS in SEAD Countries 2010-2013***

| Fuel, Sector | 2020 $CO_2$ (MT) | | | 2030 $CO_2$ (MT) | | |
|---|---|---|---|---|---|---|
| | OECD | non-OECD | Total | OECD | non-OECD | Total |
| *Electricity* | | | | | | |
| Residential | 66 | 35 | 101 | 123 | 112 | 235 |
| Commercial | 29 | 0 | 29 | 55 | 0 | 55 |
| Industrial | 23 | 5 | 27 | 51 | 10 | 61 |
| *Total* | *118* | *40* | *157* | *229* | *122* | *351* |
| *Fuel* | | | | | | |
| Residential | 15 | 0 | 15 | 29 | 0 | 29 |
| Commercial | 0 | 0 | 0 | 1 | 0 | 1 |
| *Total* | *15* | *0* | *15* | *30* | *0* | *30* |
| ***Grand Total*** | ***132*** | ***40*** | ***172*** | ***259*** | ***122*** | ***381*** |

Source: SEAD/LBNL

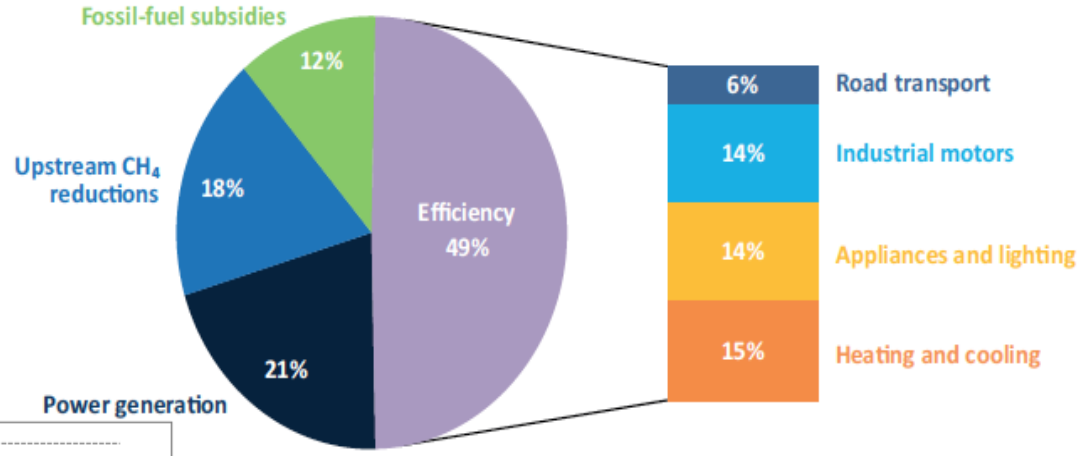
Impacts analysis starts with a list of recent policies, but requires technical specifications (stringency) of standards and estimates of efficiency baselines, product sales and use patterns.

- To date, SEAD has analyzed nearly 200 separate regulations in 13 SEAD economies, likely covering the majority of energy savings from MEPS worldwide since 2010.
- Gaps include labeling programs, and programs in non-SEAD countries, notably China.
- Cross-check with national program estimates would solidify results.

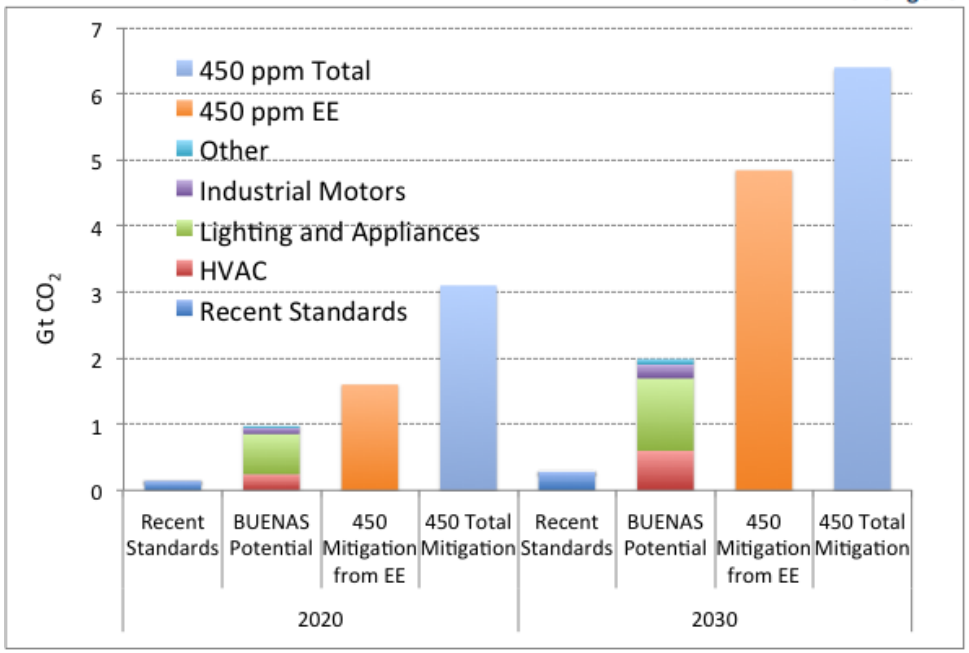
# *Reducing energy demand from equipment matters for climate change*

**IEA World Energy Outlook – "4 for 2" Report**:

Energy efficiency accounts for 49% of 3.1 Gt $CO_2$-eq estimated by 2020 in order to maintain 2C. Of this, 1.4 Gt are in *industrial motors and buildings*.




**Source: IEA**



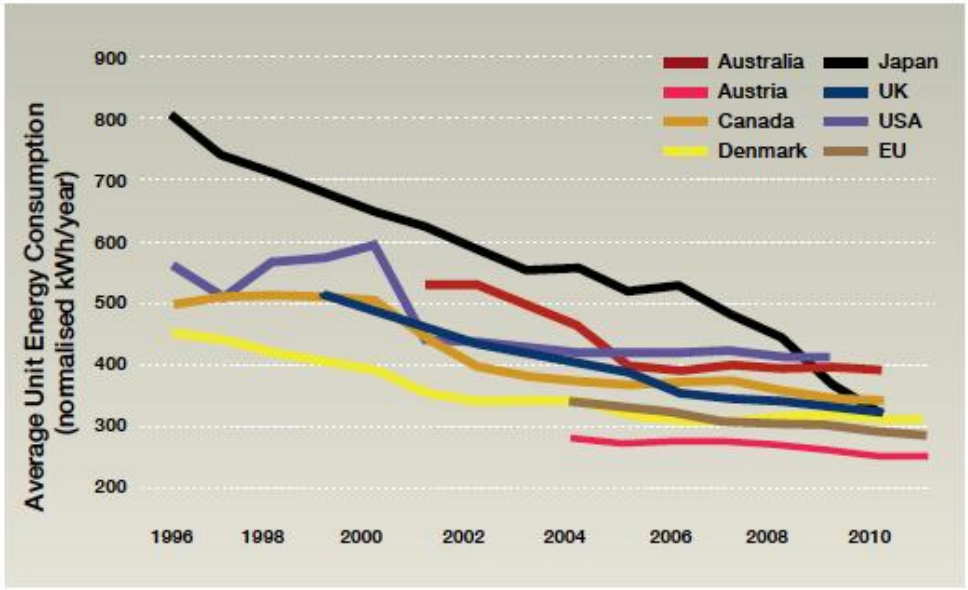

**Source: SEAD/LBNL**

**SEAD – BUENAS:** SEAD research (BUENAS) identifies equipment efficiency policies which, if implemented in SEAD economies + China could reach half of this goal and lock in even more future savings.

# *Element 3 – Market Tracking Enables Benchmarking, Lowers Capacity Barriers and Promotes Policy Innovation*

Progress: Efforts such as IEA 4E M&B have gathered data from participating countries and performed detailed analysis comparing average efficiency of markets

***Refrigerator Energy Consumption by Country***




Source: IEA 4E Mapping and Benchmarking Annex

## Challenges

- Evaluating pre-program baselines
- Obtaining sales weighted efficiency
- Test procedure differences
- Price data availability

## Opportunities

- Test procedure conversion algorithms
- Pooling resources to purchase market-research datasets
- Internet-based data ("web-scraping")

# Conclusions and Recommendations

- Data and Analysis provide value to international initiatives in two directions:

  Inward – Set priorities and focus for resource allocation.

  Outward – Demonstrate value to national governments and lower information barriers (especially for developing country governments).

- Recent work by various parties have established valuable elements of a global resource, but these elements need to be made comprehensive and kept up to date.
- Individual countries/economies as well as multiple international initiatives have common needs for Data and Analysis – should pursue economies of scale and reduce redundancy by coordinating efforts.

Thank You!

Michael McNeil, Ph.D.
Lawrence Berkeley National Laboratory

mamcneil@lbl.gov
les.lbl.gov