

Encouraging Sustainable Industrial Load Growth: How NYSERDA captured process-efficiency savings

Ned Harris
Research Into Action, Inc.

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Acknowledgements

- Co-author: Patricia Gonzales; NYSERDA
- Evaluation Manager: Marjorie McRae;
Research Into Action

Context for presentation

“By examining current and projected economic trends in the industrial sector, an efficiency program can anticipate when the next large cycle of construction, infrastructure, and capital investment is likely to occur. The program can then maximize the potential for deployment of energy efficiency technologies in the marketplace”

Agenda for Today

- What is process efficiency and why is it so important?
- NYSERDA's approach
- Barriers unique to process efficiency
- Recommendations

What is Process Efficiency and Why is it So Important?

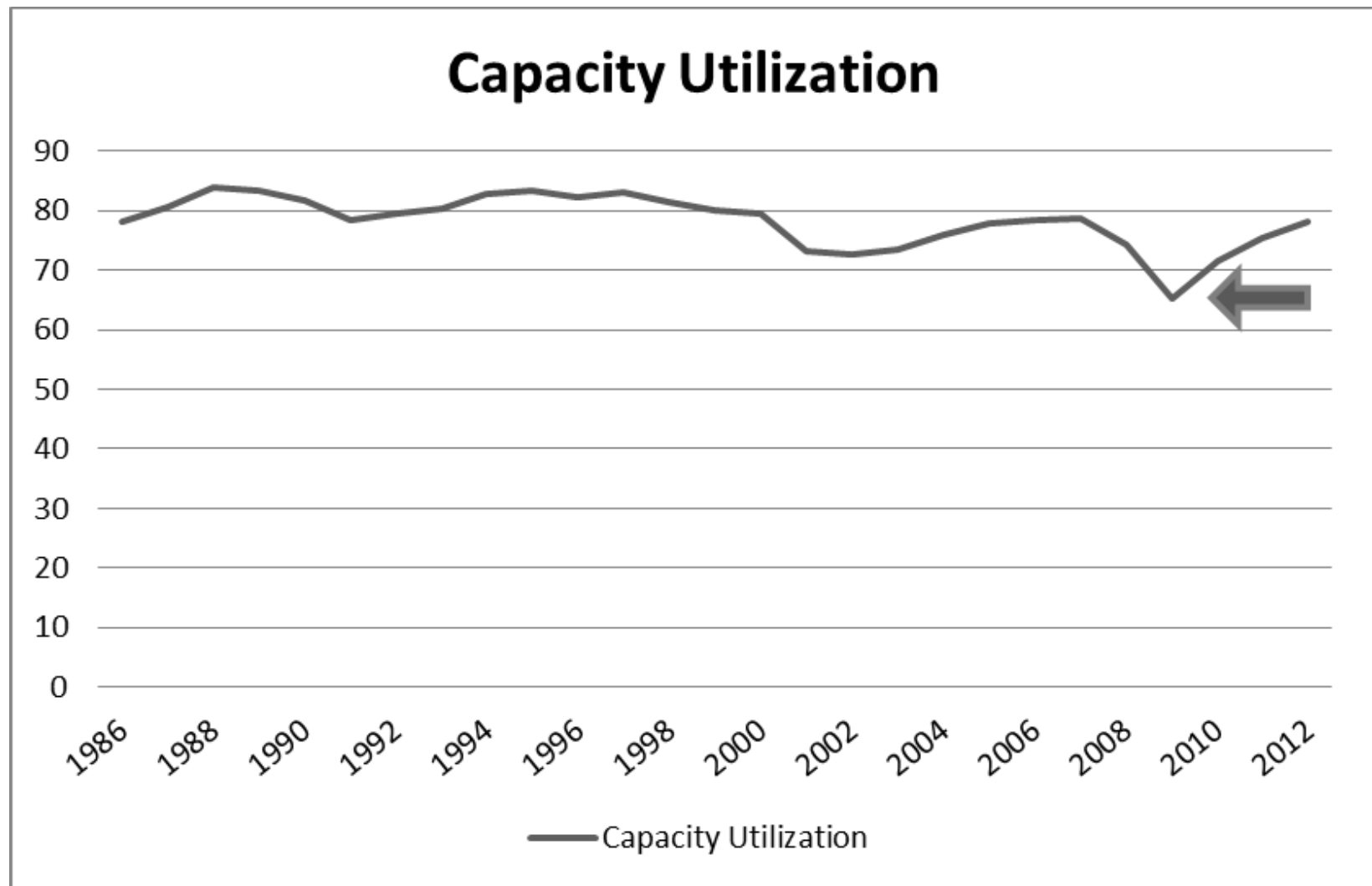
Process Efficiency is not....

- Replacement of lighting, motors, drives, and other support equipment

Process Efficiency is...

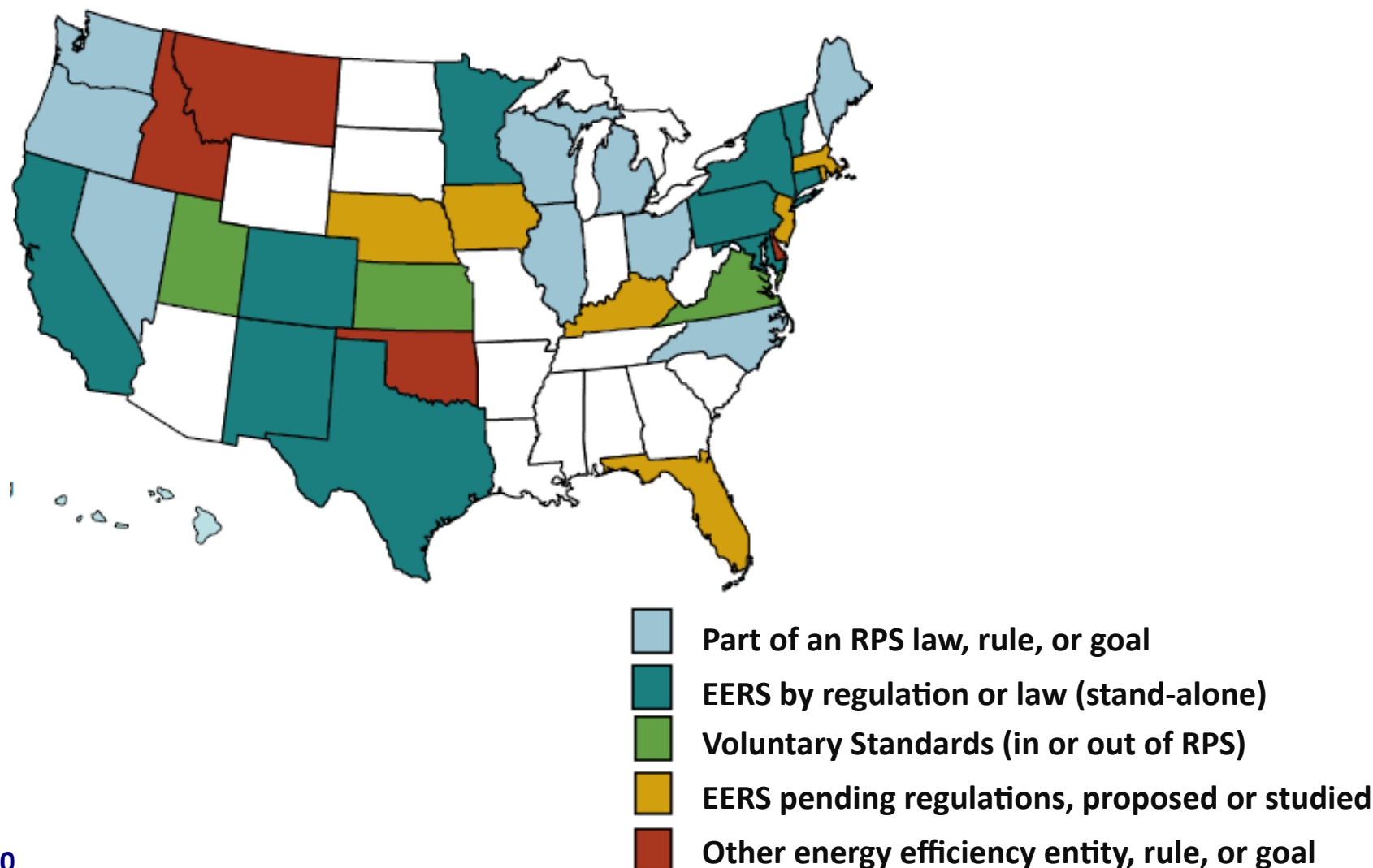
Improving energy intensity. That is, the ratio of ratio of energy use to physical output.

U.S. Capacity Utilization is Increasing



NYSERDA's IPE Program: Regulatory and Economic Context

18 States have Energy Efficiency Resource Standards



New York State

- Energy Efficiency Portfolio Standard (EEPS)
 - Reduce electricity and natural gas use 15% by the year 2015
 - NYSERDA received \$80 million (€60,615,280) per year for five new programs.
 - One of these programs, IPE, targeted energy savings goals in the industrial and data centre sectors.

Program Design and Implementation

Evaluation Interviews

Type of Respondent	Number
NYSERDA staff	29
Participating firms	53
Technical engineers	24
Equipment vendors and installation contractors	33

Program Results

Measure Category	Projected Annual kWh Savings	Percentage of Total Projected Program kWh savings
Non-Process Equipment Upgrades		
Industrial	207,714,322	56%
Data centre	13,920,773	4%
<i>Non-process subtotal</i>	<i>221,635,095</i>	<i>60%</i>
Process Efficiency Projects		
Industrial	106,283,520	29%
Data centre	42,136,556	11%
<i>Process-efficiency subtotal</i>	<i>148,420,076</i>	<i>40%</i>
Grand Total	370,055,171	100%

**Each Wave of the Evaluation
Revealed Similar Market Barriers
to Process Efficiency**

Barrier 1: Process Engineers and Energy Program Managers Speak Different Languages

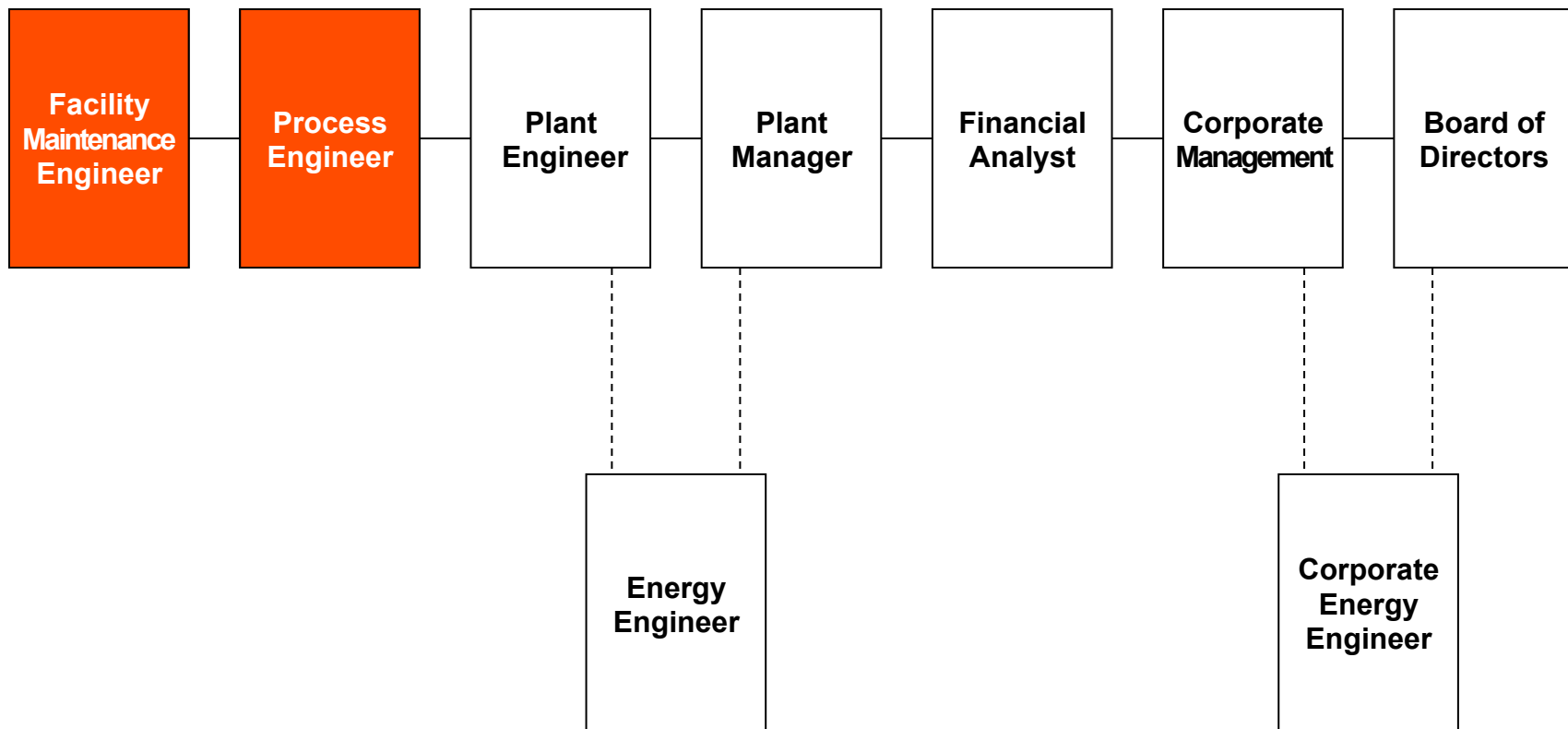
- Traditionally, process engineers have viewed process improvements as “saving time, not energy.”
- Industrial firms are sensitive about releasing confidential information
- Do not want to interrupt production processes

Barrier 2: Identifying high priority customers

NAICS Code	kWh	Square Footage	Hours of Operation	Sustainability Initiative	Capacity Utilization Rate	Priority Level
3157	9,220,657	759,000	8	Y	67%	3
3112, 5, 6	367,392	3,500,000	12	Y	55%	2
32512, 3,8	29,032,338	16,000,000	24	Y	91%	1
32621	1,430,000	184,950	24	N	55%	2
3311, 2	32,022,236	18,000,000	24	N	89%	1
31519	21,430,000	184,950	24	N	43%	2

Barrier 3: Understanding Industrial Decision Making Processes

- Who you talk to matters



Barrier 4: Challenging to Calculate

It is challenging to:

- Establish baseline measurements
- Account for variations in production schedules
- Define a unit of processing in data centres

Summary

The IPE Program conformed to several industrial energy efficiency best practices

- ✓ Build and maintain lasting relationships with customers
- ✓ Be aware of firms' investment plans
- ✓ Have partnerships to learn of new and expanding businesses
- ✓ Target specific industrial subsectors, based on an understanding of market forces
- ✓ Use technically proficient engineering consultants to assess and develop energy efficiency projects

Consider offering incentives that are calculated on a per-unit-of-production basis

- ✓ The per-unit-of-production calculation method appropriately emphasizes achieving industrial savings through process efficiency upgrades.

Questions or Comments?

Industrial and Process Efficiency Program Final Report:
[nysenda.ny.gov: "publications"](http://nysenda.ny.gov/publications)

Ned Harris,
503-287-9136
nedharris@researchintoaction.com