National Utility Rate Database

SunShot
U.S. Department of Energy

Illinois State University

National Database of Utility Rates and Rate Structure

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Director, *Center for Renewable Energy*
Professor of Economics, Illinois State University

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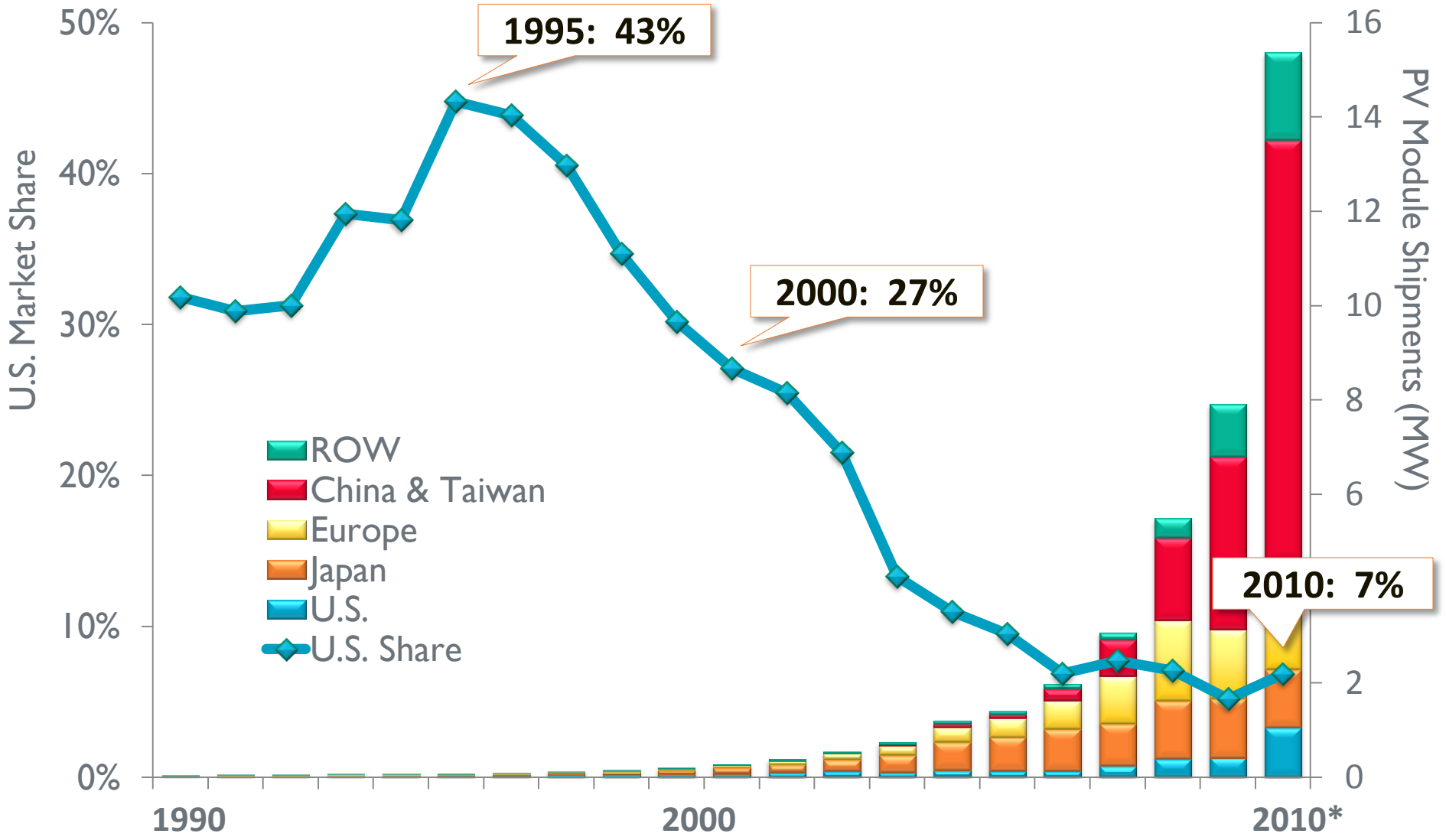
Our Sputnik Moment



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Sources: PV News (2/1993, 3/2001, 3/2006) and Navigant Consulting (2/2011)

“We’re telling America’s scientists and engineers that if they assemble teams of the best minds in their fields, and focus on the hardest problems in clean energy, we’ll fund the Apollo projects of our time.”

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- President Obama
  2011 State of the Union

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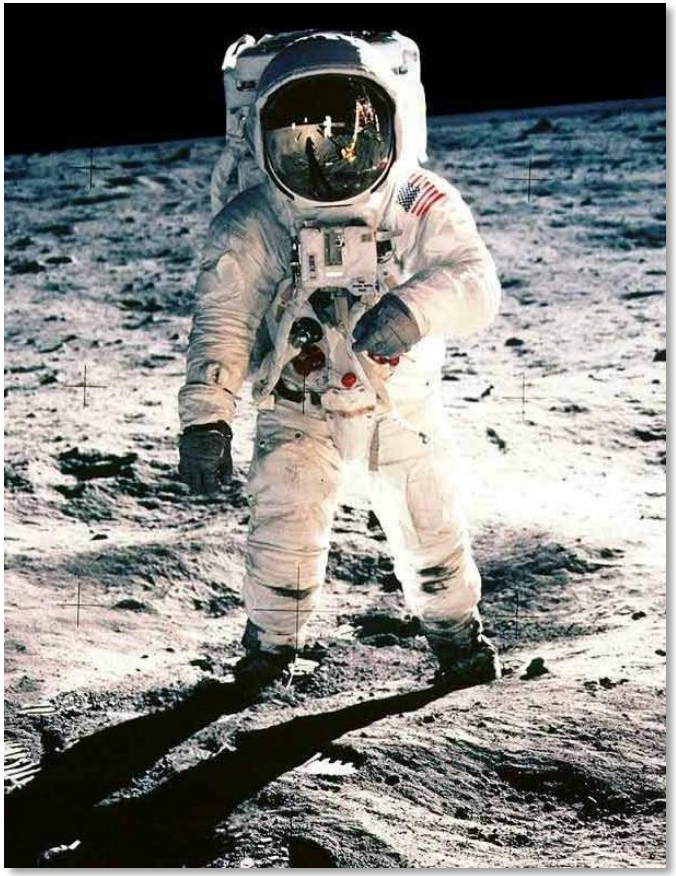
1960's Moon Shot

JFK's Challenge

America's Response



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SunShot is the Apollo Mission of Our Time

Goal: Cost- Competitive Solar

without subsidy

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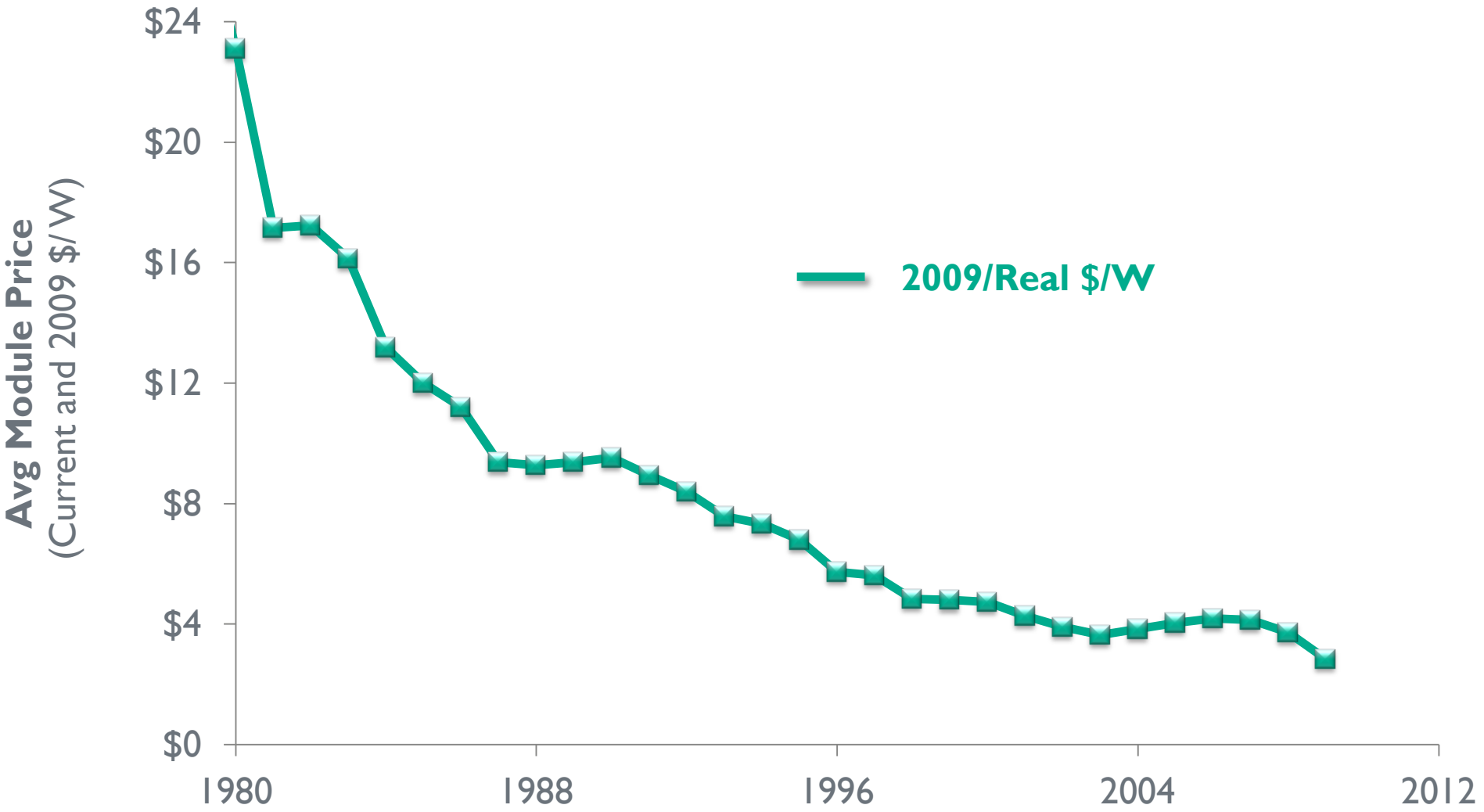
75% Cost Reduction by the End of the Decade

Module Price Decreases



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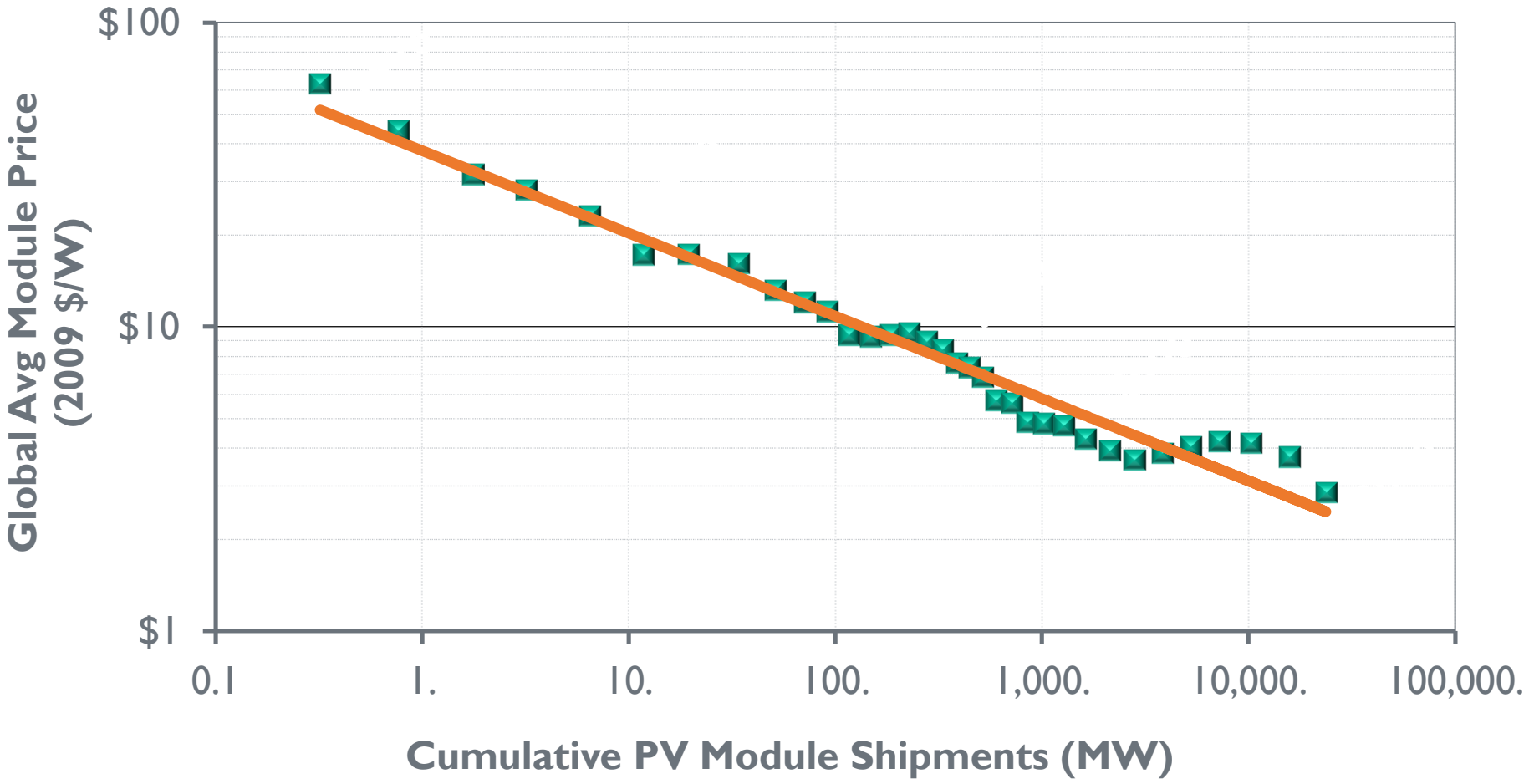
Source: Mints, P. (2011). *Photovoltaic Manufacturer Shipments, Capacity, & Competitive Analysis 20010/2011*. Report # NPS-Supply6. Palo Alto, CA: Navigant Consulting Photovoltaic Service Program.

Down the Solar Learning Curve



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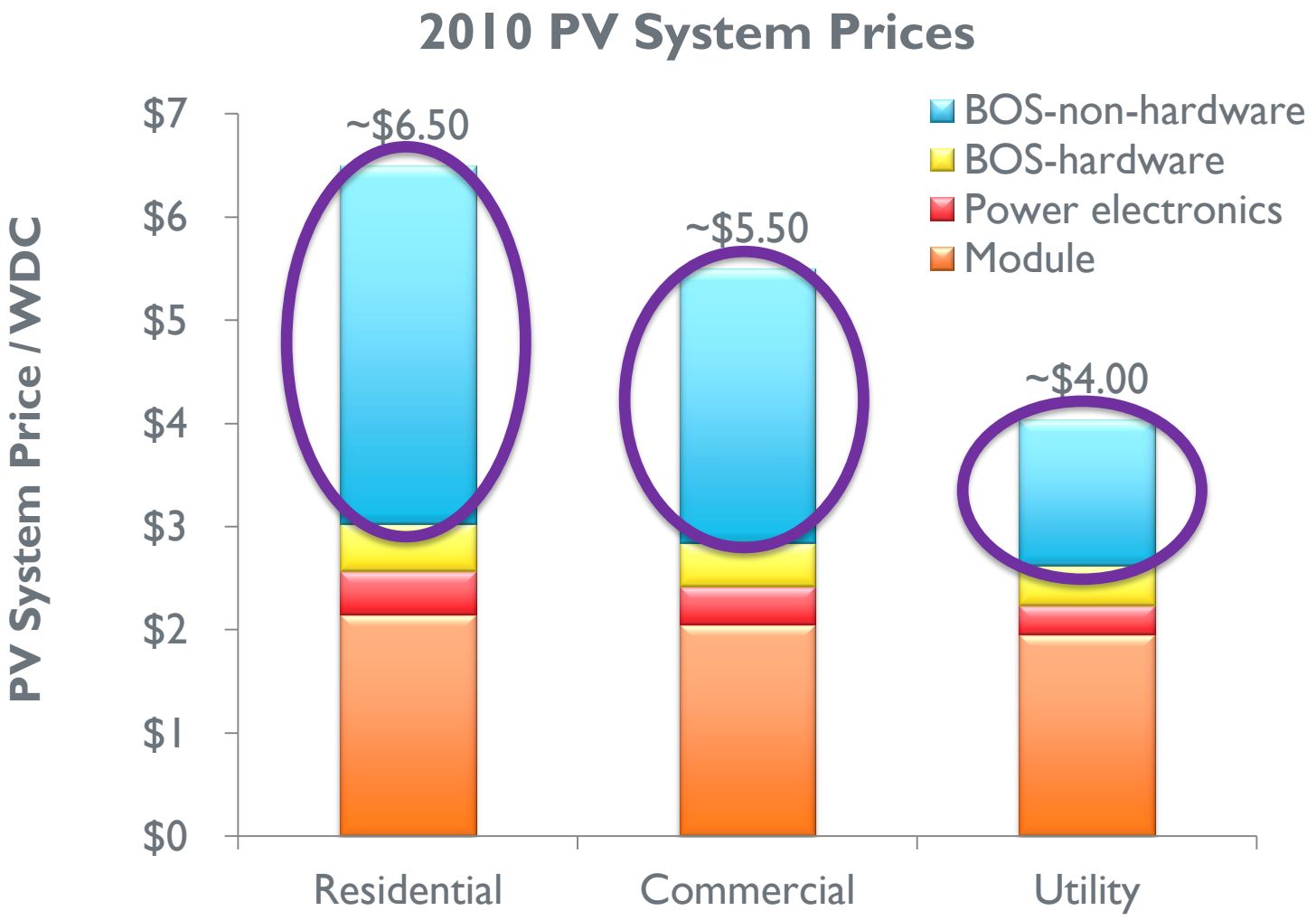
Source: Mints, P. (2011). *Photovoltaic Manufacturer Shipments, Capacity, & Competitive Analysis 20010/2011*. Report # NPS-Supply6. Palo Alto, CA: Navigant Consulting Photovoltaic Service Program.

You are helping reduce Soft Costs.

Balance of Systems - Soft Costs



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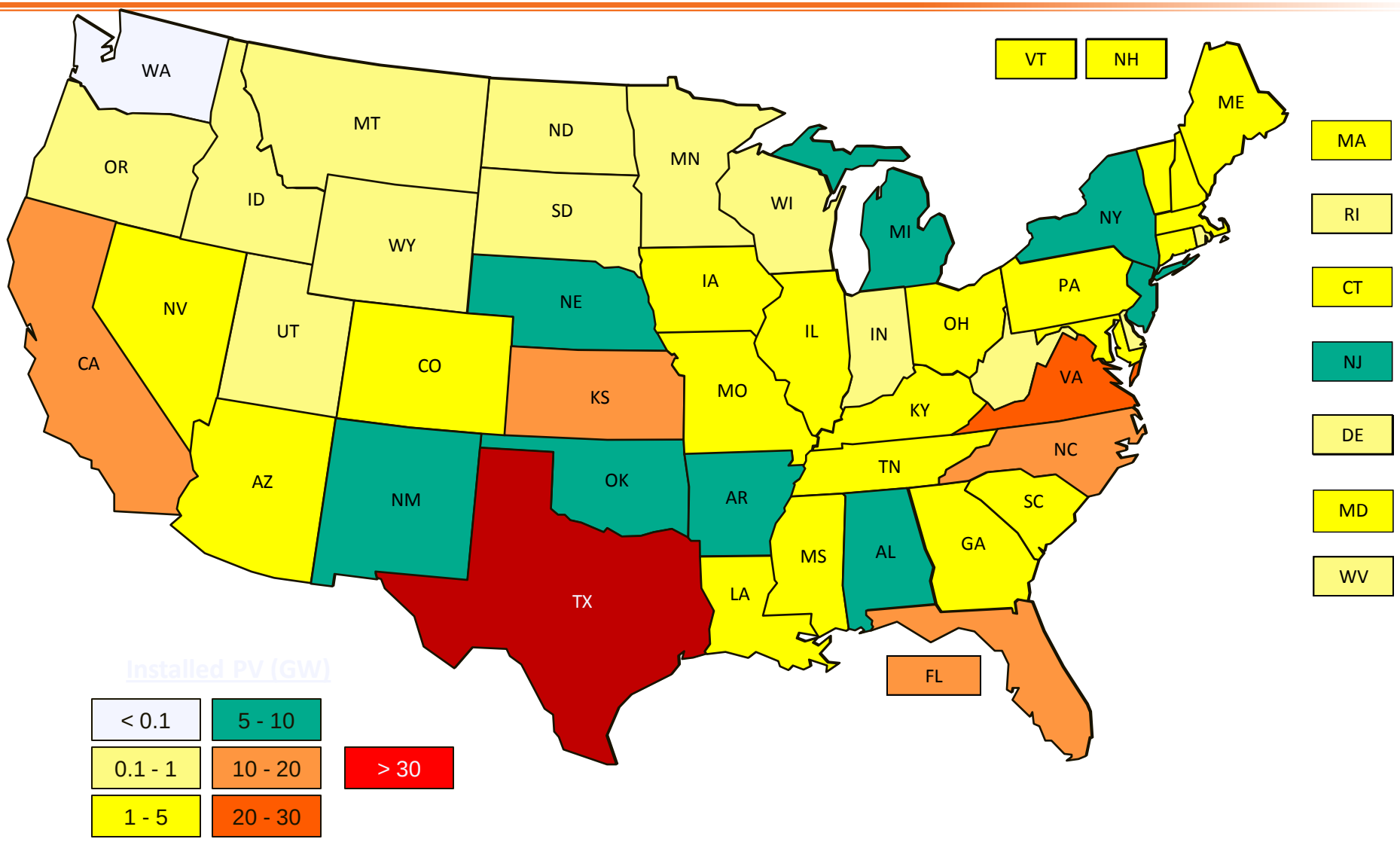
2030 Utility Scale PV with SunShot



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15-18% of America's Electricity from Solar by 2030.

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Outline

- Institute for Regulatory Policy Studies
- Key Personnel Introductions
- Goals
- Database Population
- Timelines
- Public Budget Information
- Closing

Institute for Regulatory Policy Studies

- Created in 1997, the Institute is housed within the Department of Economics in the College of Arts and Sciences at Illinois State University.
- The Institute serves the regulatory community with education, communication, and research on policy issues of interest to consumers, regulators, and utilities in Illinois and throughout the nation.
- The Institute supports the Master's Degree Program in Applied Economics with a sequence in Electricity, Natural Gas, and Telecommunications Economics.

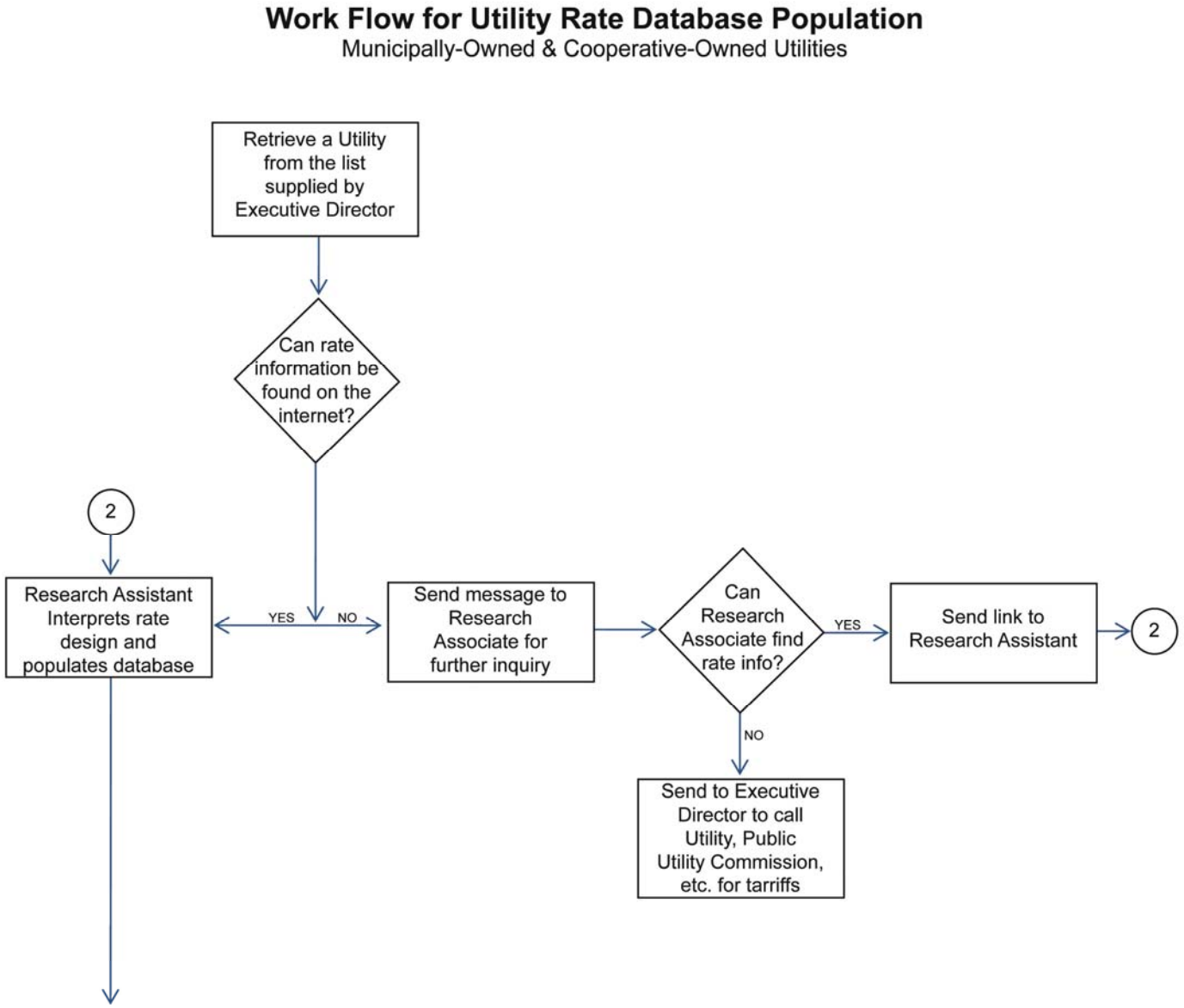
Key Personnel Introductions

- ISU Business Point of Contact - Janet Goucher
- ISU Information Technology
  - Sarah Walczynski
  - Badriram Rajagopalan
  - Jordan Thompson
  - Student Programmers
- ISU Economics
  - Nick Bowden – IRPS Staff
  - Adrienne Hahn – IRPS Assistant to Executive Director
  - Alexander Echele – Graduate Student – Research Associate
  - Research Assistants – undergraduate students

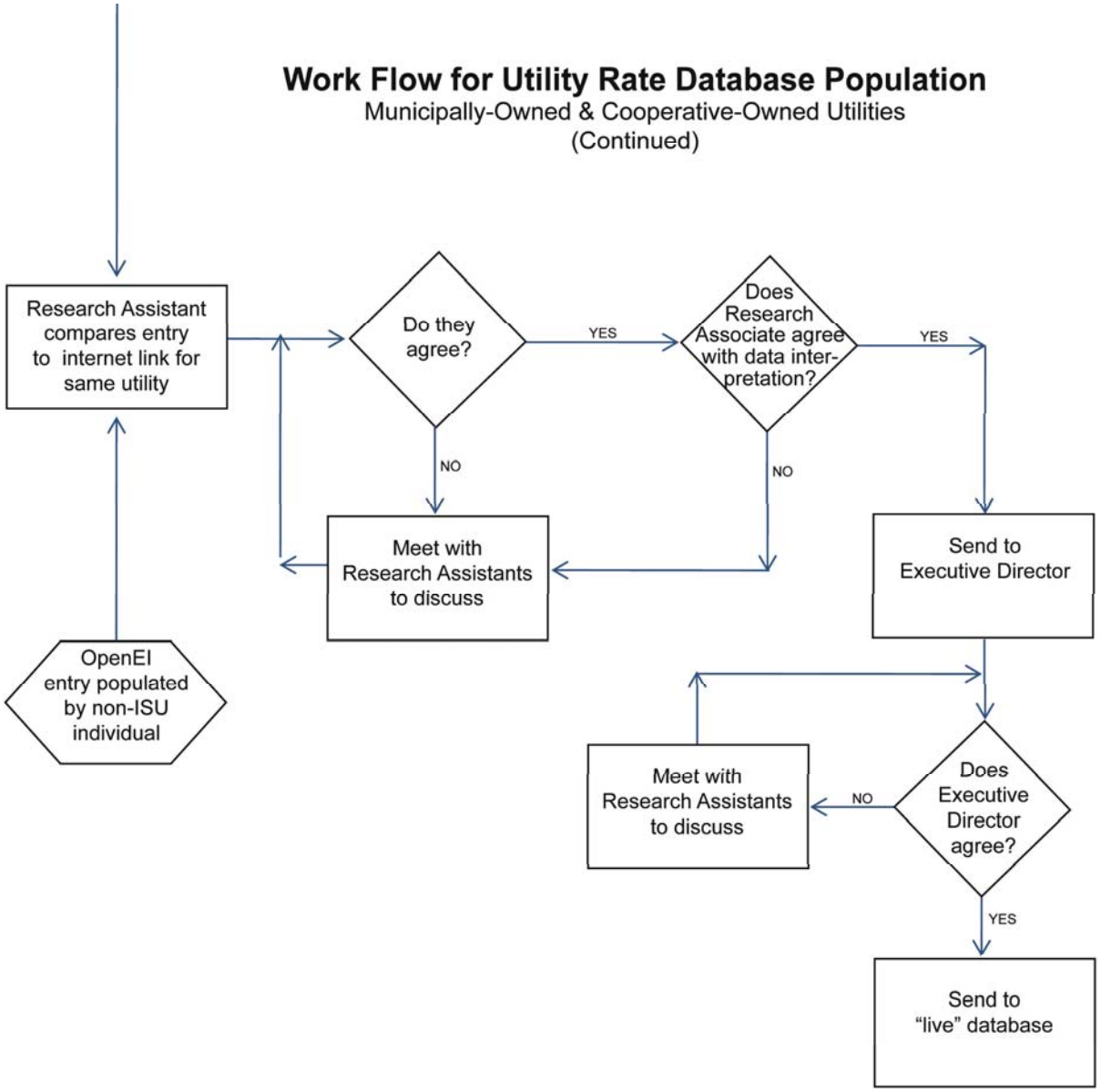
Goals

- Create systems and materials necessary to populate a comprehensive and reliable database of utility rates and rate structures.
- Create user interfaces and materials that are most appropriate to different user groups.
- Populate and keep current the database of utility rates and rate structures with proper quality control measures.
- Publicize the database and demonstrate its usefulness at solar industry events, through social media, and via other means as appropriate.
- Plan to maintain database for at least 5 years after grant funding ends.

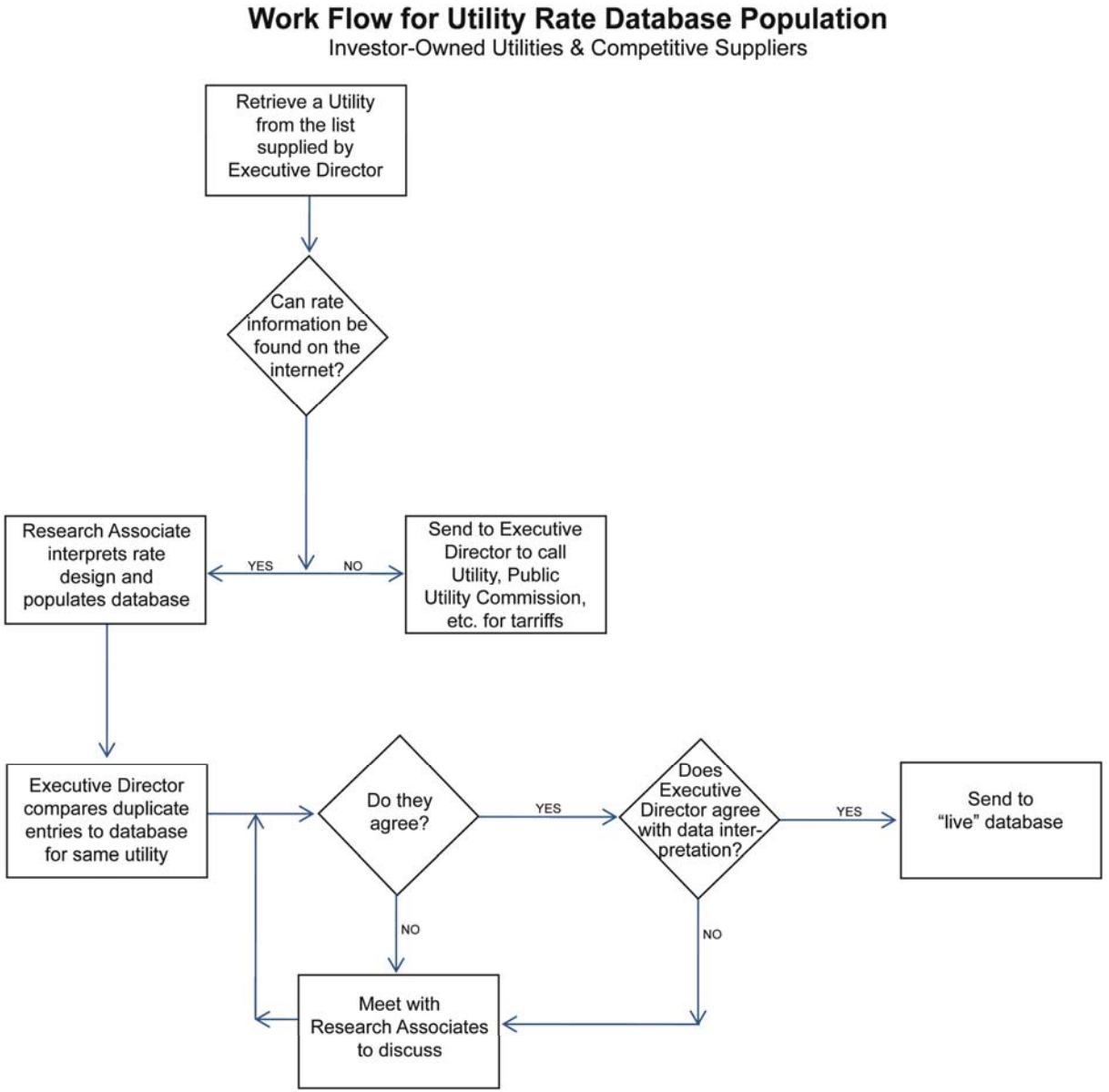
Database Population



Database Population 2



Database Population 3



en.**OpenEI**.org

OpenEI Electric Utility Rates

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en.openei.org/wiki/Gateway:Utilities

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Utilities

From Open Energy Information

The Utilities Gateway houses OpenEI's free, community-editable utility rate repository. OpenEI users may browse, edit and add new electric utility rates to OpenEI's repository. EIA provides the authoritative list of utility companies in the United States, and thus OpenEI limits utility rates to companies listed by EIA.

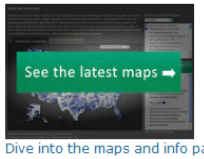
Electric Utility Rates

2798 rates have been contributed to date.

- Browse rates by zip — Search by zip code
- Browse rates by utility name
- Create or edit a rate (account required)
- Show list of all utility rates (+)

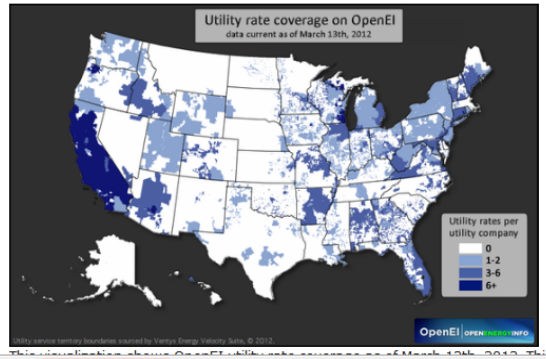
Looking for a list of all U.S. utilities by zip code? Click here to download the data as a csv. *Note: This file includes average rates for each utility, but not the detailed rate structure data found in the database above.*

How does your electric utility compare with others on access to your energy data?



Dive into the maps and info pages to see what data your utility provides you!

Utility Rate Database Visualization



Utility Rates & Companies

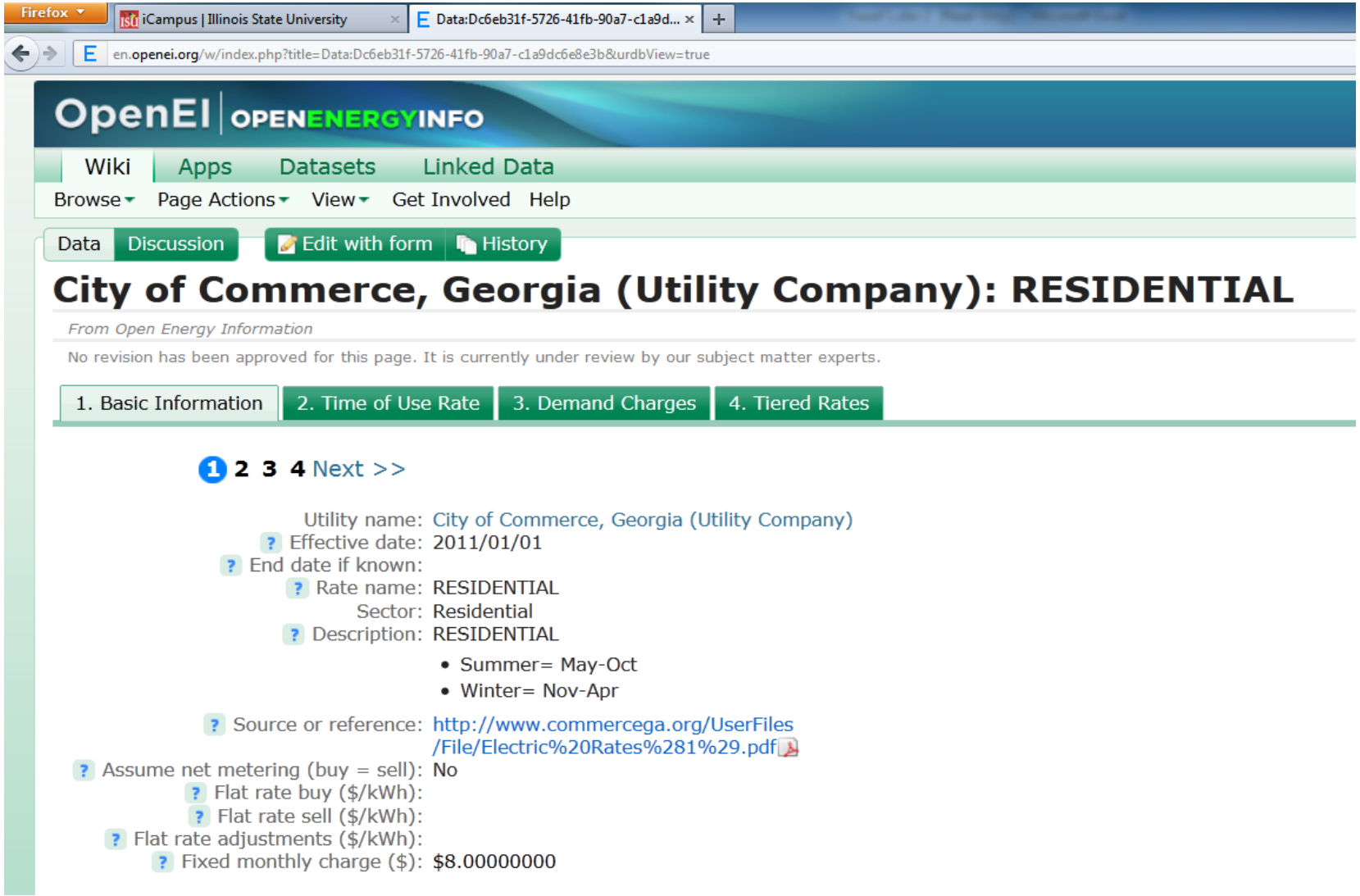
- Browse Utility Companies (3902)
- Create or Edit an Electric Utility Rate (account required)

System Advisor Model

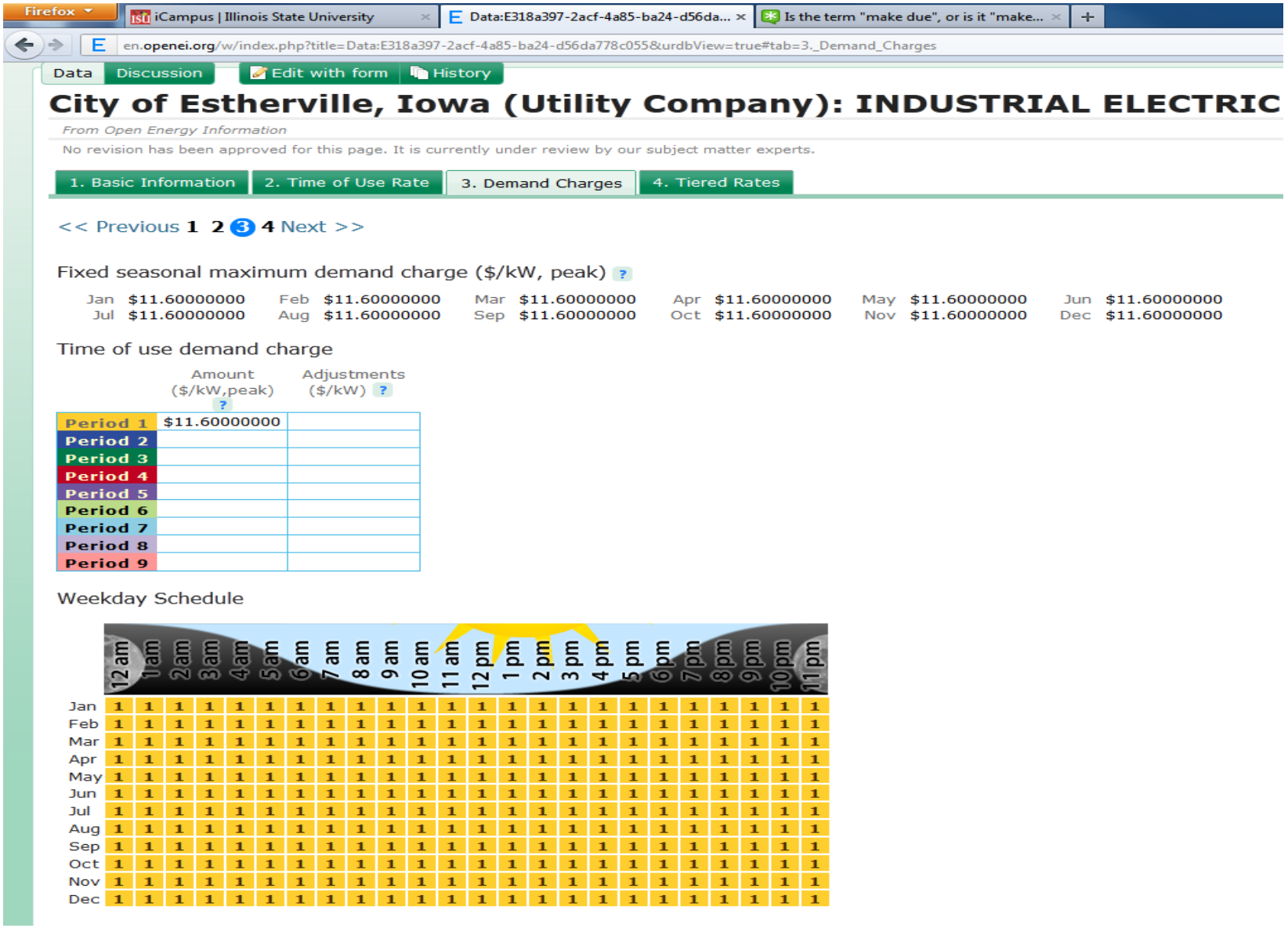
NREL's System Advisor Model now integrates with OpenEI's 2798 utility rates, which aids analysis of simple net metered rates as well as complex rate structures that include time-of-use rates, demand charges, tiered rates, fixed monthly fees, adjustment riders, and separate buy and sell rates.

Find: large | Next | Previous | Highlight all | Match case | Phrase not found

Utility Rate Basic Information



Demand Charges



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Data | Discussion | Edit with form | History

City of Estherville, Iowa (Utility Company): INDUSTRIAL ELECTRIC

From Open Energy Information

No revision has been approved for this page. It is currently under review by our subject matter experts.

1. Basic Information | 2. Time of Use Rate | 3. Demand Charges | 4. Tiered Rates

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Fixed seasonal maximum demand charge ($/kW, peak)

Jan	$11.60000000	Feb	$11.60000000	Mar	$11.60000000	Apr	$11.60000000	May	$11.60000000	Jun	$11.60000000
Jul	$11.60000000	Aug	$11.60000000	Sep	$11.60000000	Oct	$11.60000000	Nov	$11.60000000	Dec	$11.60000000

Time of use demand charge

	Amount ($/kW,peak)	Adjustments ($/kW)
Period 1	$11.60000000	
Period 2		
Period 3		
Period 4		
Period 5		
Period 6		
Period 7		
Period 8		
Period 9		

Weekday Schedule

	12 am	1 am	2 am	3 am	4 am	5 am	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	6 pm	7 pm	8 pm	9 pm	10 pm	11 pm
Jan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Feb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mar	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Apr	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jun	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Aug	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sep	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Oct	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Energy Charges 1

Firefox | iCampus | Illinois State University | electrictariffs.pdf (application/pdf Ob... | Dolly Parton - Jolene - YouTube | Data:D4a9696

en.openei.org/wiki/Data:D4a9696d-e4b6-45c1-9932-c864613c4baa#tab=2._Time_of_Use_Rate

1. Basic Information | 2. Time of Use Rate | 3. Demand Charges | 4. Tiered Rates

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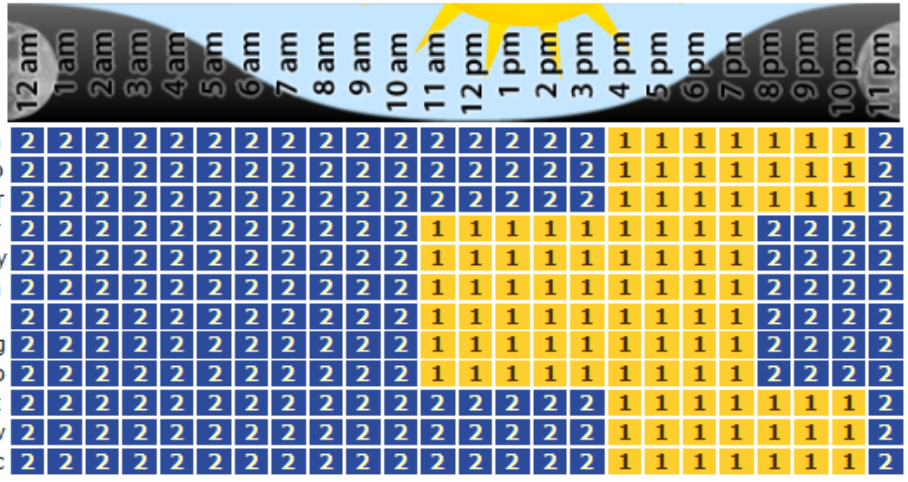
	Buy $/kWh	Sell $/kWh	Adjustments $/kWh
Period 1	$0.04640000		
Period 2	$0.02060000		
Period 3			
Period 4			
Period 5			
Period 6			
Period 7			
Period 8			
Period 9			

Weekday Schedule



Energy Charges 2

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City of Mesa, Arizona (Utility Company): Residential

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No revision has been approved for this page. It is currently under review by our subject matter experts.

1. Basic Information | 2. Time of Use Rate | 3. Demand Charges | 4. Tiered Rates

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Structure 1

	Max kWh Usage	Rate $/kWh	Adjustments $/kWh
Tier 1	1200	$0.05128000	
Tier 2		$0.04822000	
Tier 3			
Tier 4			
Tier 5			
Tier 6			

Structure 2

	Max kWh Usage	Rate $/kWh	Adjustments $/kWh
Tier 1	800	$0.03765000	
Tier 2		$0.01633000	
Tier 3			
Tier 4			
Tier 5			
Tier 6			

Monthly Schedule

Jan	Period 2
Feb	Period 2
Mar	Period 2
Apr	Period 2
May	Period 1
Jun	Period 1
Jul	Period 1
Aug	Period 1
Sep	Period 1
Oct	Period 1
Nov	Period 2
Dec	Period 2

Structure 3

	Max kWh Usage	Rate $/kWh	Adjustments $/kWh
Tier 1			
Tier 2			
Tier 3			
Tier 4			
Tier 5			
Tier 6			

Structure 4

	Max kWh Usage	Rate $/kWh	Adjustments $/kWh
Tier 1			
Tier 2			
Tier 3			
Tier 4			
Tier 5			
Tier 6			

Timelines – Year 1

	Year 1			
Activity	**Q1**	**Q2**	**Q3**	**Q4**
1. Design compatible database structure				
2. Design back-end interface				
3. Design training materials				
End of Q2 Milestone: Systems and materials necessary to populate a comprehensive and reliable database of utility rates and rate structure are ready to begin populating database				
Go/No Go Criteria: Is database, back-end interface and training materials sufficient to cover all different types of rate structures? If yes, continue project. If no, discontinue or redesign.				

Timelines – Year 1 (cont'd)

	Year 1			
Activity	**Q1**	**Q2**	**Q3**	**Q4**
4. Design user interface				
5. Design user manual				
6. Train associates and assistants				
7. Populate database				
8. Quality control and rate changes				
9. Publicize database				
End of Q3 Milestone: 386 utilities completed in database				
End of Q4 Milestone: User interfaces and manual ready; 773 utilities completed; Database presented at two solar events and over social media.				
Go/No Go Criteria: Are user interfaces and manual sufficient for all user types? If yes, continue project. If no, discontinue or redesign.				

Timelines – Year 2

	Year 2			
Activity	**Q1**	**Q2**	**Q3**	**Q4**
1. Populate database				
2. Quality control and rate changes				
3. Publicize database				
End of Q1 Milestone: 1,159 utilities completed in database				
End of Q2 Milestone: 1,545 utilities completed in database				
End of Q3 Milestone: 1,932 utilities completed in database				
End of Q4 Milestone: 2,318 utilities completed; Database presented at two solar events and over social media.				
Go/No Go Criteria: Were a sufficient number of utilities completed in the database? If yes, continue. If no, discontinue or modify collection method.				

Timelines – Year 3

	Year 3			
Activity	**Q1**	**Q2**	**Q3**	**Q4**
1. Populate database				
2. Quality control and rate changes				
3. Publicize database				
End of Q1 Milestone: 2,704 utilities completed in database				
End of Q2 Milestone: 3,090 utilities completed in database				
End of Q3 Milestone: 3,476 utilities completed in database				
End of Q4 Milestone: 3,863 utilities completed; Database presented at two solar events and over social media.				

Closing

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