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Transcript Exhibit(s)

2014 SEP 15 PM 2 15

Docket #(s): L-00000D-14-0292-00169

Arizona Corporation Commission

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SEP 15 2014

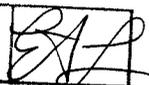
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Exhibit #: 1-4



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TO: Docket Control

Copy to: John Foreman, Chairman
Jodi Jerich, Executive Director
Thomas Campbell, Esq. – Counsel for Applicant

RE: APS / Ocotillo Modernization Project
L-00000D-14-0292-00169, LS Case No. 169
09-12-2014, Prehearing Conference

DATE: September 15, 2014

FROM: Marta T. Hetzer

The Committee's transcript order of the above-referenced Prehearing Conference is being distributed as follows:

Docket Control – Original transcript with exhibits

Executive Director – One Certified Copy with exhibits.

Chairman Foreman – One Certified Copy with exhibits.

To Applicant - One Certified copy with exhibits to Thomas Campbell, Esq.

To City of Tempe Public Library, City of Tempe Kiwanis Recreation Center, and Noble Library

- one certified copy with exhibits mailed CRRR to each library

Please advise if you have any questions or comments.
Thank you very much.

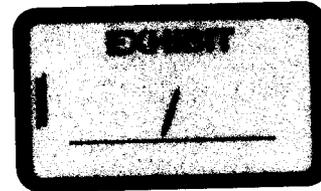
1
2
3 **BEFORE THE ARIZONA POWER PLANT**
4 **AND TRANSMISSION LINE SITING COMMITTEE**

5 IN THE MATTER OF THE APPLICATION
6 OF ARIZONA PUBLIC SERVICE
7 COMPANY, IN CONFORMANCE WITH
8 THE REQUIREMENTS OF ARIZONA
9 REVISED STATUTES 40-360 ET SEQ., FOR
10 A CERTIFICATE OF ENVIRONMENTAL
11 COMPATIBILITY AUTHORIZING THE
12 OCOTILLO MODERNIZATION PROJECT,
13 WHICH INCLUDES THE INSTALLATION
14 OF FIVE 102 MW GAS TURBINES AND
15 THE CONSTRUCTION OF TWO 230-
16 KILOVOLT GENERATION
17 INTERCONNECTIONS AND OTHER
18 ANCILLARY FACILITIES, ALL LOCATED
19 WITHIN THE BOUNDS OF THE EXISTING
20 OCOTILLO POWER PLANT SITUATED
21 ON PROPERTY OWNED BY ARIZONA
22 PUBLIC SERVICE COMPANY AND
23 LOCATED AT 1500 EAST UNIVERSITY
24 DRIVE, TEMPE, ARIZONA, IN MARICOPA
25 COUNTY.

DOCKET NO. L-00000D-14-0292-00169

Case No. 169

PROTECTIVE AGREEMENT



14
15 The Residential Utility Consumer's Office ("RUCO") has requested access to certain
16 documents, data, studies, and other materials, some of which Arizona Public Service
17 Company or its affiliates ("APS" or "Company") considers to be of a proprietary,
18 confidential or legally-protected nature ("Confidential Information").

19 In order to facilitate the exchange of Confidential Information between APS and
20 RUCO, including any independent contracting consultants retained by RUCO in this matter,
21 (collectively referred to as the "Parties"), the Parties agree to the terms of this Protective
22 Agreement ("Agreement") as follows:

23 § 1. **Confidential Information.** Any document, data, information, study, or any
24 other written, printed, transcribed, audio-taped or video-taped material furnished in this
25 matter that RUCO or APS or its affiliates claim to be confidential, proprietary, or of an
26 otherwise legally protected nature, as well as any copies, notes, materials, extracts, or
27 summaries in any form whatsoever, mechanical, electronic, or otherwise, derived or prepared
28 from said document, data, information, study or other item, shall be designated and referred

1 to herein as "Confidential Information." All Confidential Information provided under the
2 terms of this Agreement shall be marked by the Party producing such information (the
3 "Producing Party") with a written designation indicating its confidential nature. Where a
4 Producing Party claims that only a part of a document or other informational submittal
5 contains Confidential Information, that Party shall designate and mark only the confidential
6 portion of the document or other informational submittal as "Confidential Information."

7 To the extent either Party discloses Confidential Information verbally, such
8 Confidential Information shall be memorialized in writing by the Producing Party within five
9 (5) business days of its verbal disclosure, and the writing shall be marked with the
10 appropriate designation. Any such Confidential Information disclosed verbally shall be
11 safeguarded as confidential under the terms of this Agreement by the Party who receives
12 such information (the "Receiving Party") during the five (5) business day period during
13 which the written memorial may be provided.

14 Parties agree that they shall designate as Confidential Information only such
15 information that they believe in good faith to be legally protected. Access to and review of
16 Confidential Information shall be strictly controlled by the terms of this Agreement.

17 The Confidential Information produced pursuant to this Agreement may include
18 information designated by APS as "Competitively-Sensitive Confidential Information."
19 "Competitively-Sensitive Competitive Confidential Information" is Confidential Information
20 that may, if disclosed, allow others the opportunity to gain an advantage in the competitive
21 power market. APS does not share information designated as "Competitively-Sensitive
22 Confidential Information" with all parties to this docket. Although APS will allow RUCO to
23 review such information as Confidential Information subject to the terms of this Agreement,
24 RUCO shall not, under any circumstances or at any time, provide information designated as
25 "Competitively-Sensitive Confidential Information" to any other party to this matter.

26 § 2. **Non-Disclosure.** Except as set forth in Paragraph 3 or with prior written
27 consent of the Producing Party, Confidential Information shall not be disclosed to or
28 reviewed by any person other than (1) any employees, contractors, or other agents of the

1 Receiving Party who have executed a non-disclosure agreement in the form attached hereto
2 as Exhibit A and have certified by their signatures thereto that they have read this Agreement
3 and have consented to be bound by its terms; and (2) attorneys, outside experts, consultants,
4 or advisors of the Receiving Party who (a) have been retained or employed to assist in the
5 Receiving Party's participation in the above-captioned docket, and (b) have executed a non-
6 disclosure agreement in the form attached hereto and incorporated herein as Exhibit A and
7 have certified by their signatures thereto that they have read this Agreement and have
8 consented to be bound by its terms.

9 This Agreement shall not prevent the Receiving Party from using Confidential
10 Information provided by the Producing Party in reports or documents that aggregate all
11 information gathered from all parties to this docket, provided that the Producing Party's
12 individual Confidential Information is indiscernible from the aggregate report. In addition,
13 where the Producing Party designates information as confidential solely because it is
14 customer-specific information or discloses specific prices, this Agreement shall not prohibit
15 the Receiving Party from the public disclosure of such information in an aggregated form,
16 provided that no specific customer information or individual price can be ascertained.

17 **§ 3. Non-Signatories Entitled to Review.** Confidential Information provided
18 pursuant to the terms of this Agreement may be provided to the paralegals and employees of
19 any signatory to this Agreement only to the extent such disclosure is necessary to the
20 disposition of this docket. Such disclosure may be made only if the non-signatory employee
21 receiving the Confidential Information is provided with a copy of this Agreement and agrees
22 to be bound by its terms. All signatories to this Agreement will be held responsible for
23 ensuring that any non-signatory subject to this Paragraph complies with the terms of this
24 Agreement.

25 **§ 4. Use of Confidential Information.** No person who is afforded access to any
26 Confidential Information under the terms of this Agreement shall use such information for
27 any purpose other than for preparing and presenting the Receiving Party's position in the
28 above-captioned docket, including preparation for and the conduct of any administrative

1 proceeding. All persons entitled to review or afforded access to Confidential Information
2 shall keep it secure as trade secret, confidential, proprietary, or legally protected information
3 in accordance with the purposes and intent of this Agreement, and no such person shall use
4 any Confidential Information in a manner that may result in or require disclosure of such
5 information to any persons not permitted access to such information under the terms of this
6 Agreement.

7 **§ 5. Measures Taken to Prevent Unauthorized Disclosure.** Any person who
8 receives Confidential Information in accordance with the terms of this Agreement shall
9 maintain such information in a manner reasonably calculated to prevent its unauthorized
10 disclosure or access.

11 **§ 6. Performance Under Agreement Does Not Result in Waiver.** Execution of
12 this Agreement by the Parties and the performance of their obligations hereunder shall not
13 result in waiver of any claim, issue, or dispute concerning the proprietary, confidential, or
14 legally protected nature of the Confidential Information provided. In addition, nothing in
15 this Agreement is intended to require the production of any Confidential Information by any
16 Party. By releasing Confidential Information pursuant to this Agreement, the Parties
17 respectively retain in all respects every privilege and claim to confidentiality each heretofore
18 has had and hereafter may have with respect to all such Confidential Information. The
19 limited provision of Confidential Information by the Providing Party under the terms of this
20 Agreement shall not constitute public disclosure of it.

21 **§ 7. Use of Confidential Information in Pleadings.** Where references to
22 Confidential Information are required in any pleading, brief, argument or motion, such
23 references shall be made by citation of title or exhibit number or some other description that
24 avoids disclosure of the substantive Confidential Information contained therein. Any use of
25 or substantive references to Confidential Information shall be placed in a separate section of
26 the pleading, brief or motion and submitted to the Chairman of the Arizona Power Plant and
27 Transmission Line Siting Committee ("Chairman"), Administrative Law Judge ("ALJ") or
28 the Arizona Corporation Commission ("Commission") under seal. Any information filed,

1 submitted or designated as under seal as provided herein shall not be subject to public release
2 or inspection (other than inspection by a person authorized by the terms of this Agreement,
3 or by the assigned Chairman, ALJ or Commission and the Commissioners or their aides),
4 except by order of the Commission. All of the restrictions contained in this Agreement apply
5 to materials prepared and distributed under this Paragraph.

6 **§ 8. Disclosure of Information to the Public.** The Confidential Information
7 provided pursuant to this Agreement shall not be disclosed to any person not authorized to
8 review it under the terms of this Agreement or made part of the public record in the above-
9 captioned docket, or in any other administrative or legal proceeding, unless the Receiving
10 Party provides the Producing Party with five (5) business days written notice that it
11 challenges the Producing Party's designation of the information as legally protected and
12 intends that certain specifically identified information shall be subject to wider dissemination
13 or public disclosure. Upon the expiration of five (5) business days from the date such
14 written notice is received by the Producing Party, any Confidential Information specifically
15 identified in the notice as subject to public disclosure may become part of the public record
16 in this docket, unless the Producing Party initiates a protective proceeding under the terms of
17 Paragraph 9 to this Agreement.

18 **§ 9. Protective Proceedings to Prevent Disclosure to the Public.** In the event
19 that the Producing Party seeks to prevent disclosure of Confidential Information pursuant to
20 Paragraph 8 above, the Producing Party shall file, within five (5) business days of receiving
21 written notice of the Receiving Party's intent to disclose such information, a motion
22 presenting the specific grounds upon which it claims that the information should not be
23 disclosed or should not be made a part of the public record. The Receiving Party shall have
24 an opportunity to respond to the motion. The motion may be ruled upon by either the
25 Chairman, Commission or an assigned ALJ. The Producing Party may provide to the
26 Chairman, Commission or the ALJ the Confidential Information referenced in the motion
27 without waiver of its position that the information should be kept confidential under the
28 terms of this Agreement. Any Confidential Information so provided shall be filed and kept

1 under seal for the purpose of permitting inspection by the Chairman, the Commission or the
2 ALJ before ruling on the motion.

3 Notwithstanding any determination by the Chairman, ALJ or the Commission that any
4 Confidential Information provided pursuant to this Agreement should be made a part of the
5 public record or otherwise disclosed, such disclosure shall not occur for a period of five (5)
6 business days after such determination so that the Providing Party may seek judicial relief
7 from the Chairman's, ALJ's or the Commission's decision. Upon expiration of the five (5)
8 day period, the Chairman, ALJ or the Commission may release the information to the public
9 unless the Providing Party has received a stay or determination from a court of competent
10 jurisdiction that the Confidential Information should not be disclosed.

11 **§ 10. Disclosure to Third-Parties.** In the event the Receiving Party wishes to
12 provide the Producing Party's Confidential Information to a person who is not included
13 within the scope of Paragraphs 2 or 3 herein (a "Third Party"), the Receiving Party shall
14 make such request of the Producing Party in writing. If the Producing Party consents in
15 writing to providing such Third Party with Confidential Information under the terms of this
16 Agreement, the Third Party shall have access to such information only upon the Third
17 Party's execution of Exhibit A to this Agreement. If the Producing Party does not consent to
18 providing its Confidential Information to the Third Party, the Parties shall submit their
19 dispute to the Chairman, assigned ALJ (or to the Commission's Chief ALJ, if no ALJ has
20 been assigned to this docket) or the Commission for resolution in accordance with the
21 procedure set forth in Paragraph 9.

22 **§ 11. Return of Confidential Information.** Confidential Information shall remain
23 available to the persons who have received such information under the terms of this
24 Agreement until all Commission proceedings relating to the above-referenced docket are
25 concluded and are no longer subject to judicial review. Within 30 days after such time has
26 passed, the Producing Party may submit a written request for the return of all Confidential
27 Information, including copies thereof and notes pertaining thereto made by any person who
28 received such information under the terms of this Agreement, and the Receiving Party shall

1 cause all persons to have received such information under the terms of this Agreement to
2 return it to the Producing Party within 15 days of such request. If such request is not
3 received within the stated 30 days, the Receiving Party shall, within another 30 days, cause
4 all Confidential Information in the possession of any person to have received such
5 information under the terms of this Agreement, including copies thereof and any notes
6 pertaining thereto, to be destroyed or returned to the Producing Party, and shall certify in
7 writing to the Producing Party that this has been accomplished. To whatever extent
8 Confidential Information is not returned or destroyed as provided herein, such information
9 shall remain subject to the provisions of this Agreement.

10 **§ 12. Non-Termination.** The provisions of this Agreement shall not terminate at the
11 conclusion of the proceedings conducted in the above-referenced docket. Even if no longer
12 engaged in such proceedings, every person who has executed Exhibit A or who is otherwise
13 subject to this Agreement shall continue to be bound by its terms unless released therefrom
14 by the Company in writing.

15 **§ 13. Objections to Admissibility.** This Agreement is intended to restrict and
16 control the production, use, and dissemination of Confidential Information that may be
17 provided by either Party to this Agreement. The production of any document, information,
18 data, study or other materials pursuant to this Agreement shall not limit the right of any Party
19 to object to its relevance or admissibility in proceedings before the Commission or any
20 judicial body.

21 **§ 14. Designated Contacts.**

22 A. RUCO's designated contacts for written notice pertaining to this Agreement
23 are:

24 Daniel W. Pozefsky
25 Chief Counsel
26 Residential Utility Consumer Office
27 1110 West Washington Street
28 Suite 220
 Phoenix, Arizona 85007
 dpozefsky@azruco.gov

 Robert B. Mease
 Chief Accounting and Rates
 Residential Utility Consumer Office
 1110 West Washington Street
 Suite 220
 Phoenix, Arizona 85007
 rmease@azruco.gov

1 B. APS's designated contacts for written notice pertaining to this Agreement are:

2 Linda J. Benally
3 Attorney
4 Pinnacle West Capital Corporation
5 Law Department
6 400 North 5th Street, MS 8695
7 Phoenix, Arizona 85004
8 Linda.Benally@pinnaclewest.com

Melissa Krueger
Senior Regulatory Attorney
Pinnacle West Capital Corporation
Law Department
400 North 5th Street, MS 8695
Phoenix, Arizona 85004
Melissa.Krueger@pinnaclewest.com

7 Gregory Bernosky
8 Manager, Regulatory Policy, Consumer Advocates
9 Arizona Public Service Company
10 400 North 5th Street, MS 9708
11 Phoenix, Arizona 85004
12 Gregory.Bernosky@asp.com

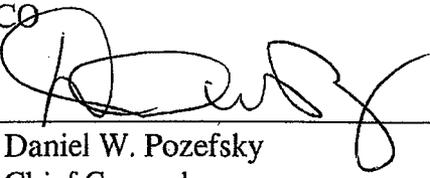
13 **§ 15. Breach of Agreement.** APS, in any legal action or complaint it files in any
14 court alleging breach of this Agreement shall, at the written request of the Commission,
15 name the Commission as a defendant therein.

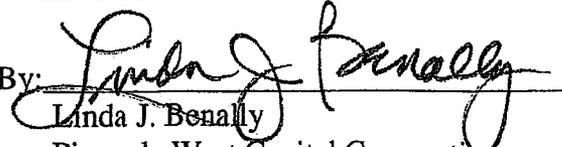
16 **§ 16. Remedies.** The Parties acknowledge and agree that an exclusive remedy of
17 money damages would not be a sufficient remedy for any breach of this Agreement, and that
18 in addition to all other remedies to which the Producing Party may be entitled, each such
19 Producing Party may be entitled to: (a) apply to the Chairman, ALJ or the Commission, as
20 appropriate, for sanctions against the other Party and its legal counsel; and (b) specific
21 performance and/or injunctive or other relief as a remedy. Any equitable relief sought or
22 secured hereunder shall not bar recovery of other remedies available at law or in equity,
23 including money damages.

DATED this 27th day of August, 2014.

1
2 RUCO

ARIZONA PUBLIC SERVICE COMPANY

3 By: 

By: 

4 Daniel W. Pozefsky
5 Chief Counsel
6 Residential Utility Consumer Office
7 1110 West Washington Street, Suite 220
8 Phoenix, Arizona 85007
9 602-364-4835

Linda J. Benally
Pinnacle West Capital Corporation
Law Department
400 North 5th Street, MS 8695
Phoenix, Arizona 85004
602-250-3630

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1 **EXHIBIT "A"**

2 I have read the Protective Agreement dated August 27, 2014, executed by
3 authorized representatives of Arizona Public Service Company and RUCO *In the Matter of*
4 *the Application of Arizona Public Service Company, in Conformance with the*
5 *Requirements of Arizona Revised Statutes 40-360 et seq., for a Certificate of*
6 *Environmental Compatibility Authorizing the Ocotillo Modernization Project, which*
7 *Includes the Installation of Five 102 MW Gas Turbines and the Construction of Two 230-*
8 *Kilovolt Generation Interconnections and Other Ancillary Facilities, All Located Within*
9 *the Bounds of the Existing Ocotillo Power Plant Situated on Property Owned by Arizona*
10 *Public Service Company and Located at 1500 East University Drive, Tempe, Arizona, in*
11 *Maricopa County, Docket No. L-00000D-14-0292-00169 and agree to be bound by the*
12 terms and conditions of such Agreement.

13 Lon Haber

14 Name

15 [Signature]

16 Signature

17 RUCO

18 Employer or Firm

19 1110 W Washington St Suite 200

20 Business Address

21 special projects Advisor

22 Position or relationship with RUCO

23 8-29-14

24 Date

1 EXHIBIT "A"

2 I have read the Protective Agreement dated August 27, 2014, executed by
3 authorized representatives of Arizona Public Service Company and RUCO *In the Matter of*
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10 *Public Service Company and Located at 1500 East University Drive, Tempe, Arizona, in*
11 *Maricopa County, Docket No. L-00000D-14-0292-00169 and agree to be bound by the*
12 terms and conditions of such Agreement.

13 Riley Rhorer
14 Name

15 Riley Rhorer
16 Signature

17 K. R. Saline & Associates, PLLC.
18 Employer or Firm

19 160 N. Pasadena, Suite 101, Mesa, AZ
20 Business Address

21 Consultant
22 Position or relationship with RUCO

23 8/28/2014
24 Date

1 EXHIBIT "A"

2 I have read the Protective Agreement dated August 22, 2014, executed by
3 authorized representatives of Arizona Public Service Company and RUCO *In the Matter of*
4 *the Application of Arizona Public Service Company, in Conformance with the*
5 *Requirements of Arizona Revised Statutes 40-360 et seq., for a Certificate of*
6 *Environmental Compatibility Authorizing the Ocotillo Modernization Project, which*
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9 *the Bounds of the Existing Ocotillo Power Plant Situated on Property Owned by Arizona*
10 *Public Service Company and Located at 1500 East University Drive, Tempe, Arizona, in*
11 *Maricopa County, Docket No. L-00000D-14-0292-00169* and agree to be bound by the
12 terms and conditions of such Agreement.

13 Christopher M. Fecke-Stadt

14 Name

15
16 

17 Signature

18 K.R. Salme & Associates, PLC

19 Employer or Firm

20
21 160 N. Pasadena, Suite 101

22 Business Address

23 Mesa, AZ 85201

24 Consultant

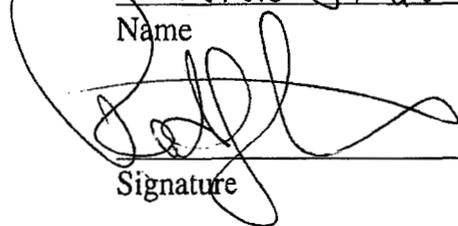
25 Position or relationship with RUCO

26 August 28, 2014

27 Date

1 **EXHIBIT "A"**

2 I have read the Protective Agreement dated August 27, 2014, executed by
3 authorized representatives of Arizona Public Service Company and RUCO *In the Matter of*
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11 *Maricopa County, Docket No. L-00000D-14-0292-00169 and agree to be bound by the*
12 terms and conditions of such Agreement.

13 PATRICK J. QUINN
14 Name
15 
16 Signature

17
18 State of AZ RUCO
19 Employer or Firm

20
21 1110 W WASHINGTON suite 220
22 Business Address 85007

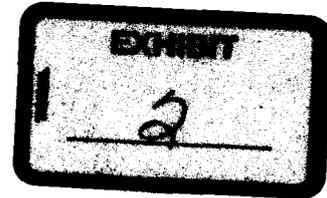
23
24 DIRECTOR
25 Position or relationship with RUCO

26 8/2/2014
27 Date

ASU
ARIZONA STATE UNIVERSITY

September 10, 2014

Chairman Bob Stump
Arizona Corporation Commission
Commissioners Wing
1200 W. Washington - 2nd Floor
Phoenix, Arizona 85007



Dear Chairman Stump and Commissioners:

On behalf of Arizona State University, I am writing in support of the proposed Ocotillo Power Plant modernization proposed by Arizona Public Service (APS), which is adjacent to the University's main campus. ASU is pleased with the prospect of a renewed plant that will generate cleaner energy for our area, as well as create additional environmental and economic benefits.

The existing steam generators at Ocotillo have powered the growth of ASU and Tempe through the decades, but the University's long-term vision for the area has changed dramatically. ASU is planning a unique, mixed-use development bordering the plant to the north and west that will demonstrate the future of creative urban design and sustainable development, with multi-family residential, office and retail space, plus world-class athletic facilities. We are currently discussing modifications to existing setback and use deed restrictions with APS that will further enhance the positive impacts of this development.

We anticipate the Ocotillo project will benefit the development by replacing the existing generators with lower-profile units, which will significantly reduce the plant's visibility in the area, making it more aesthetically pleasing. Adding more modern, reliable technology also will support growth along Tempe Town Lake and in our master-planned development.

We have had tremendous success in collaborating with APS on energy initiatives, such as the highly visible Power Parasol solar projects on the Tempe Campus. This project is a significant step toward generating cleaner, more efficient energy for our campus and surrounding communities, which supports the University's goal of carbon neutrality.

Modernization of the Ocotillo power plant will benefit the University, our neighbors and Arizona in creating a sustainable energy future.

Sincerely,

Morgan R. Olsen
Executive Vice President, Treasurer and Chief Financial Officer

OFFICE OF THE EXECUTIVE VICE PRESIDENT, TREASURER AND CHIEF FINANCIAL OFFICER
Business and Finance

PO Box 877505, Tempe, AZ 85287-7505
(480) 727-9920 Fax: (480) 727-9922

2014 Integrated Resource Plan

Arizona Corporation Commission Workshop

September 11, 2014

Jim Wilde
Director, Resource Planning

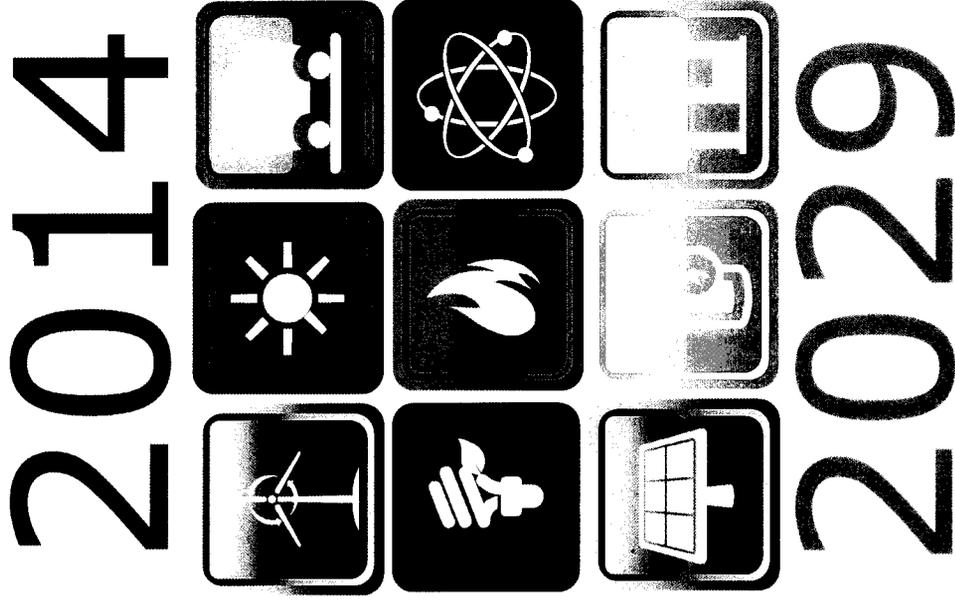


2014 IRP Supplement

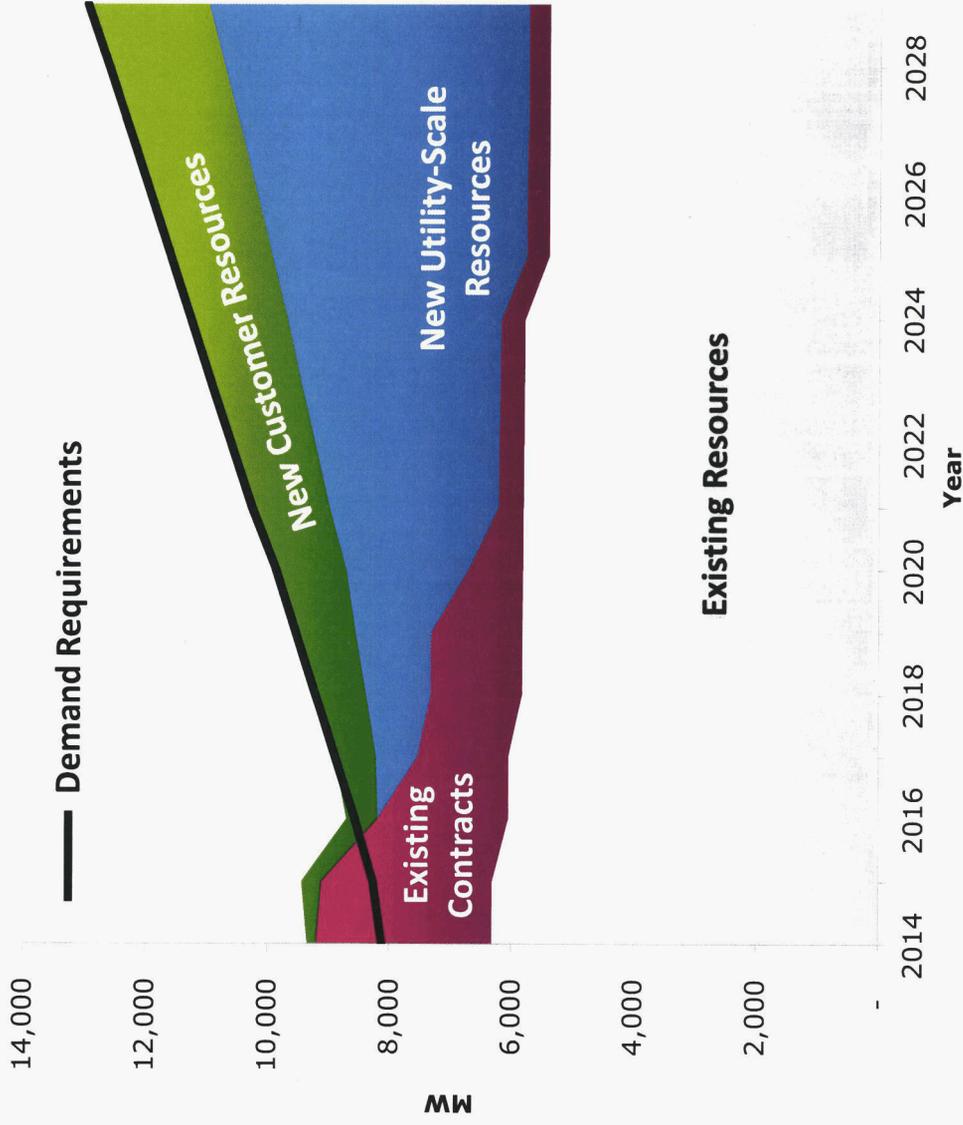
- Modify chosen portfolio from the Selected Portfolio (April 2014 Selected Portfolio) to the Coal Reduction Portfolio (September 2014 Selected Portfolio)
- Currently in talks with EPA, ADEQ and PacifiCorp to craft a resolution for Cholla:
 - Retire Unit 2 in 2016
 - Retire Units 1 and 3 in mid-2020's (at end of coal contract) or convert to natural gas
- Modification based on economics of required environmental upgrades to comply with MATS and Regional Haze
 - Similar to Four Corners 1-2-3, environmental upgrades cannot be supported given lack of economies of scale
- Portfolio modification will produce cost savings to customers and reduce environmental impacts
- IRP Supplement will be filed with the ACC

2014 IRP Summary

- **Natural gas generation will play increasingly important role**
 - Economics
 - Operational flexibility
- **Cleaner energy mix**
 - Customer resources such as roof-top solar and energy efficiency projected to triple
 - Environmental regulations
- **Advanced technology will change the electricity grid**
 - Integration of renewable energy
 - Communication and automation



Supply-Demand Gap



- Growth in customer energy requirements expected to resume
- Customer resources expected to triple over planning horizon
- Expiring purchase contracts means APS will need additional resources by 2017
- Additional resource needs anticipated to be met by increasingly diverse and efficient technologies

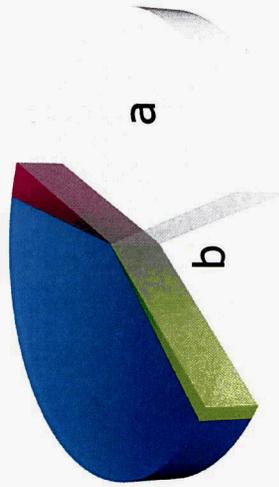
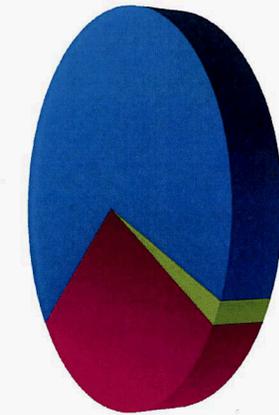
Expected Future Resources

Sept 2014 Selected Portfolio



2014-2029 (Forecast)

Future Additional Resources 7,267 MW Expected at Peak



2014

8,124 MW
peak requirement
100% met with
existing resources

2029

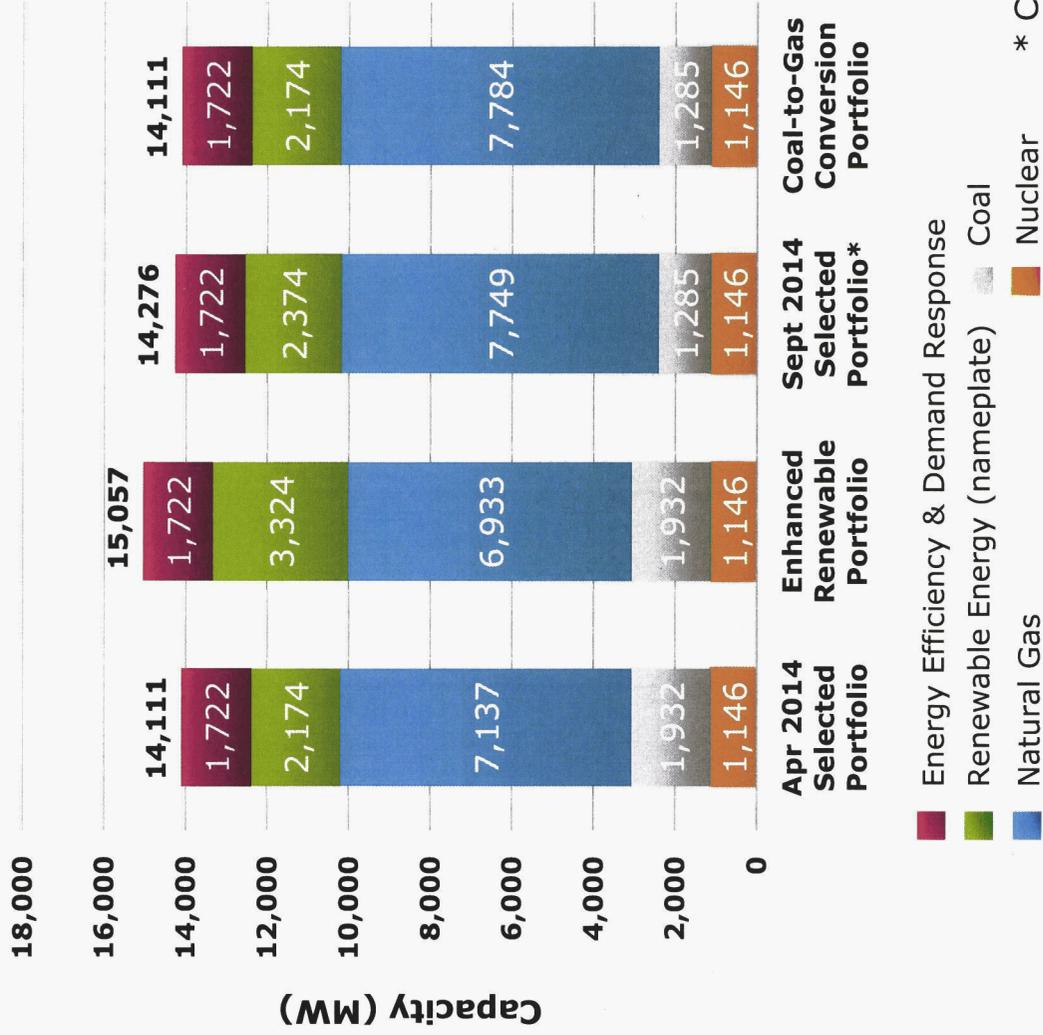
12,982 MW
peak requirement
45% met with
existing resources

- a. New Utility-Scale Resources**
- Natural Gas
4,817 MW
 - Renewable Energy
467 MW (1,018 MW nameplate capacity)

- b. New Customer Resources**
- Energy Efficiency
1,447 MW
 - Distributed Energy
261 MW (722 MW nameplate capacity)
 - Demand Response
275 MW

Portfolios Considered

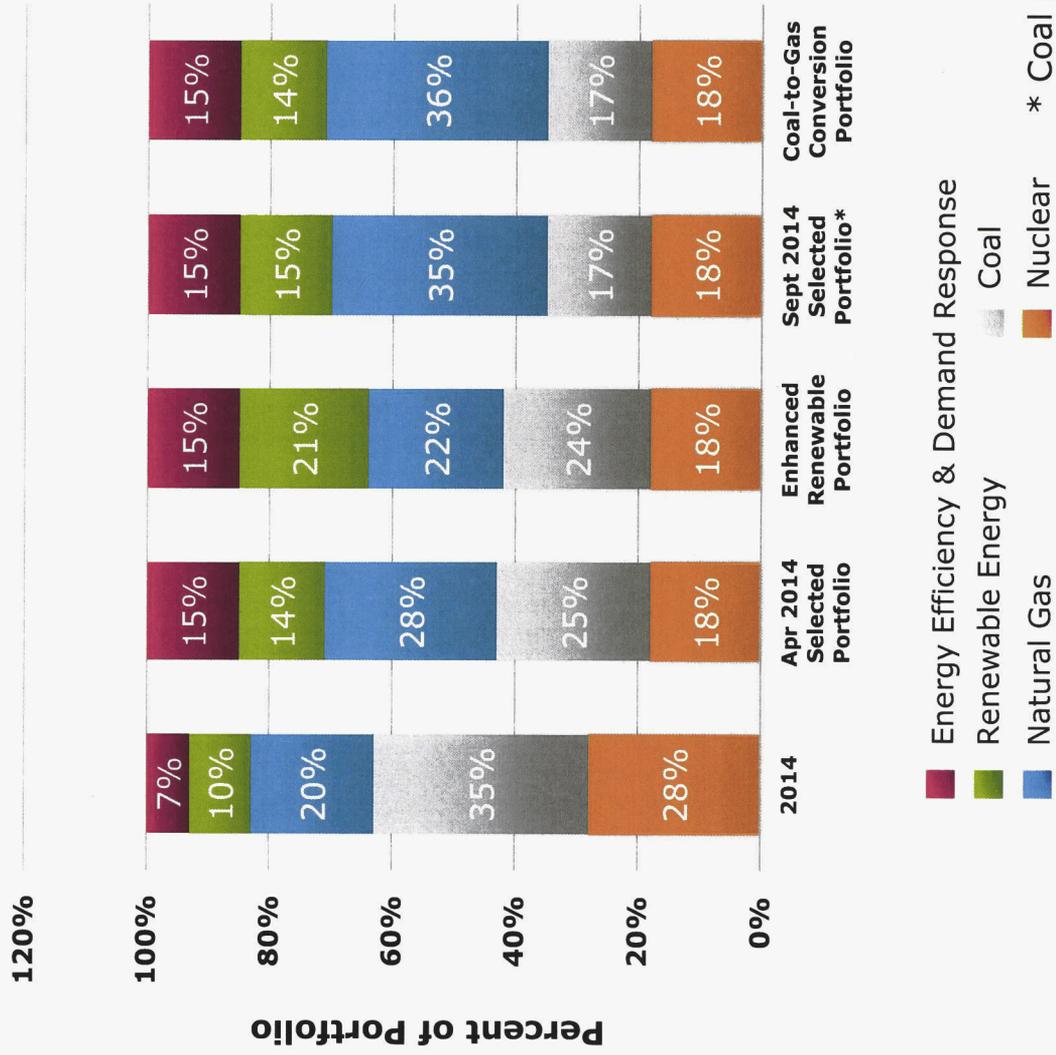
2029 Capacity Comparison



- Sept 2014 Selected Portfolio is being chosen because it provides better combination of:
 - Overall cost
 - Operational flexibility to support grid reliability and renewable energy integration
- Provides for discussion of uncertainties in upcoming coal fleet decisions

Energy Mix

2014 vs 2029 Comparison



- Of the four portfolios considered, all have a diverse resource mix
- Renewables and coal primary resources being flexed in portfolio analysis
- Natural gas resources used to balance out remaining needs by providing summer capacity and operational flexibility

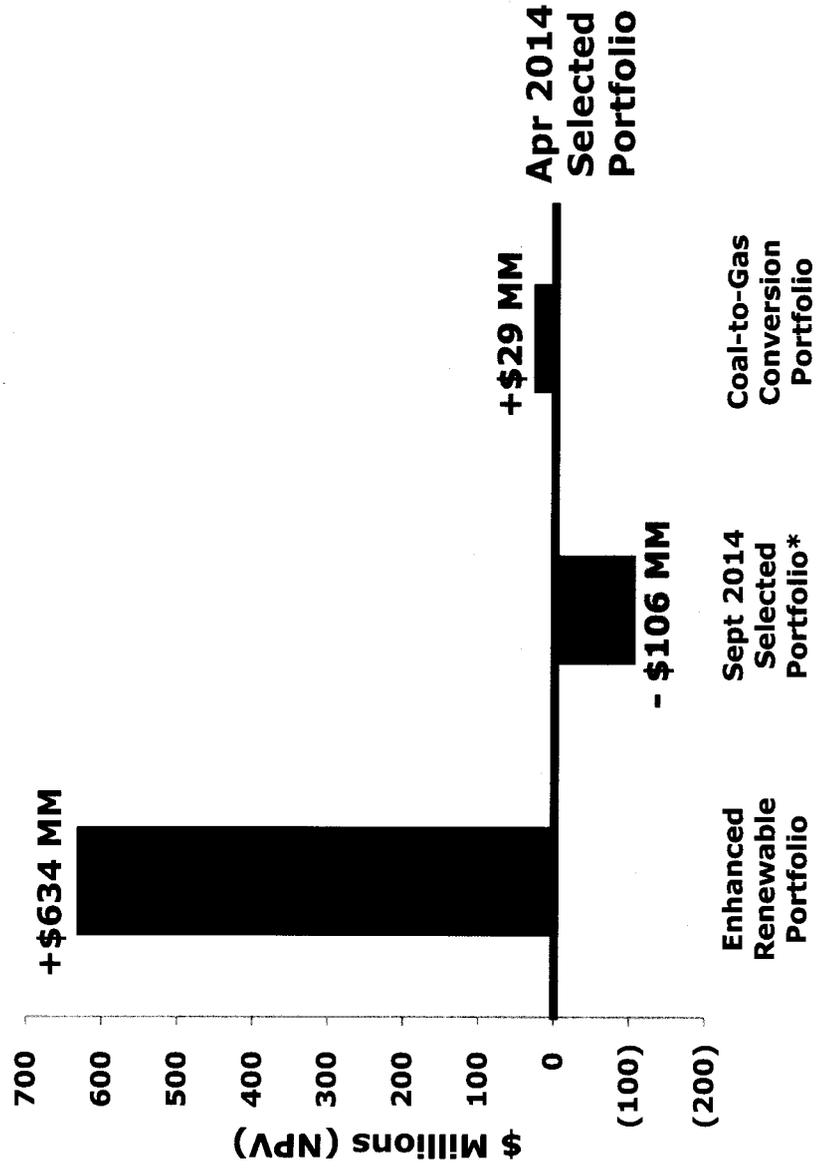
Comparative Revenue Requirements

Differences from Apr 2014 Selected Portfolio in 2029

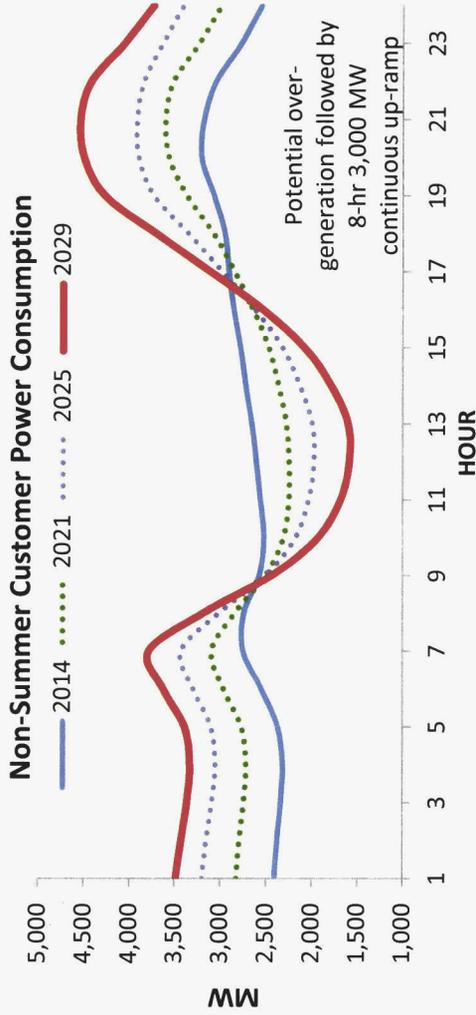
Portfolio	2029 Revenue Requirement \$BB (NPV)
Apr 2014 Selected	\$29.3
Enhanced Renewable	\$29.9
Sept 2014 Selected*	\$29.2
Coal-to-Gas Conversion	\$29.3

* Coal Reduction Portfolio

Revenue Requirement Differences



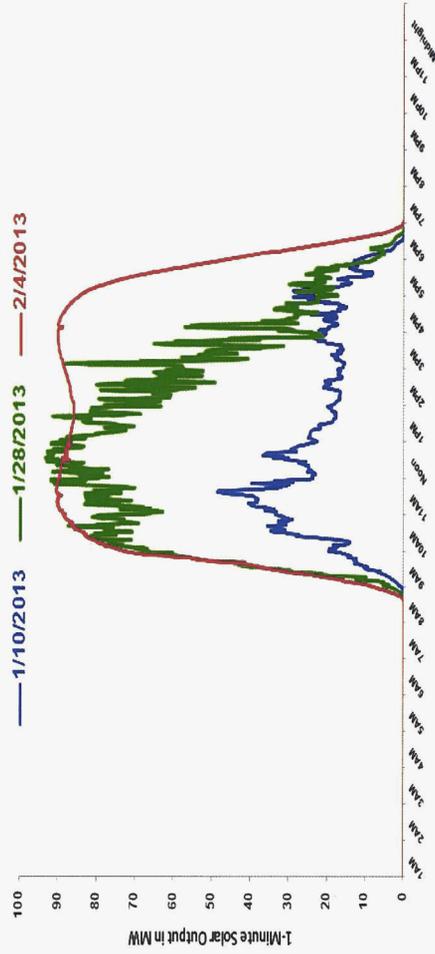
Evolving Customer Demand



- Growth of solar PV changes customer energy consumption patterns

- Generators must be able to start and stop multiple times per day

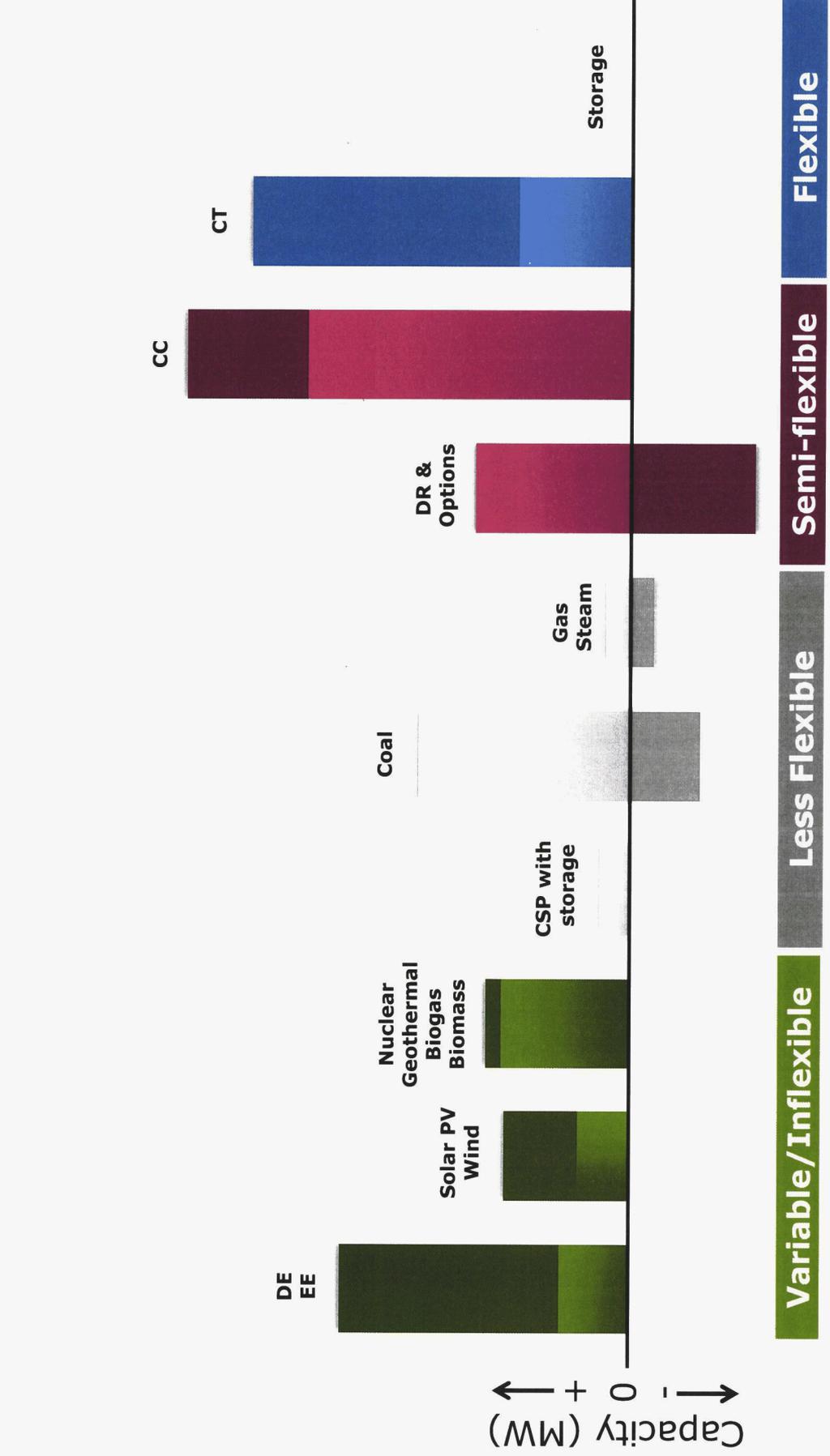
Three Days of APS' Historical Solar Energy Production
January 2013
Rated Capacity of 110 MW Excluding Solana



- Fast starting and ramping capability is required in responding to intermittent output of renewable resources

Variability Requires Flexibility

Balancing Growth at Both Ends of Flexibility Spectrum



Future Technology Drivers

Transition Towards Integrating Evolving Energy Resource Portfolio

- **System Drivers**
 - Increasing amounts of intermittent generation
 - Need for peaking resources and summer time capacity
 - Cost of compliance with environmental regulations
 - Stable natural gas prices
- **Potential Benefits**
 - Increased resource diversity
 - Flexible gas generation meets peak needs and enables renewable energy integration
 - Reduced environmental impacts
- **Potential Risks**
 - Cost of resource diversity for newer technologies
 - Technology maturity and uncertain reliability
 - Maintaining balance between variable/inflexible resources and flexible resources

Sample of Potential Future Energy Storage Options

- **Battery Storage**
 - Uses off-peak/dump energy from grid to charge battery
 - Discharges energy when needed
- **Flywheel/Rotary Uninterruptible Power Supplies (UPS)**
 - Very short-term energy and voltage stabilization
- **Pumped Hydro**
 - During periods of high demand, power is generated by releasing water from an upper reservoir through turbines in the same manner as a conventional hydropower station
 - During periods of low demand, the upper reservoir is recharged by using lower-cost electricity from the grid to pump water from a lower reservoir back to the upper reservoir
- **Compressed Air Energy Storage (CAES)**
 - CAES potential in helping provide back up for solar and wind generation
 - Geologic and permitting concerns

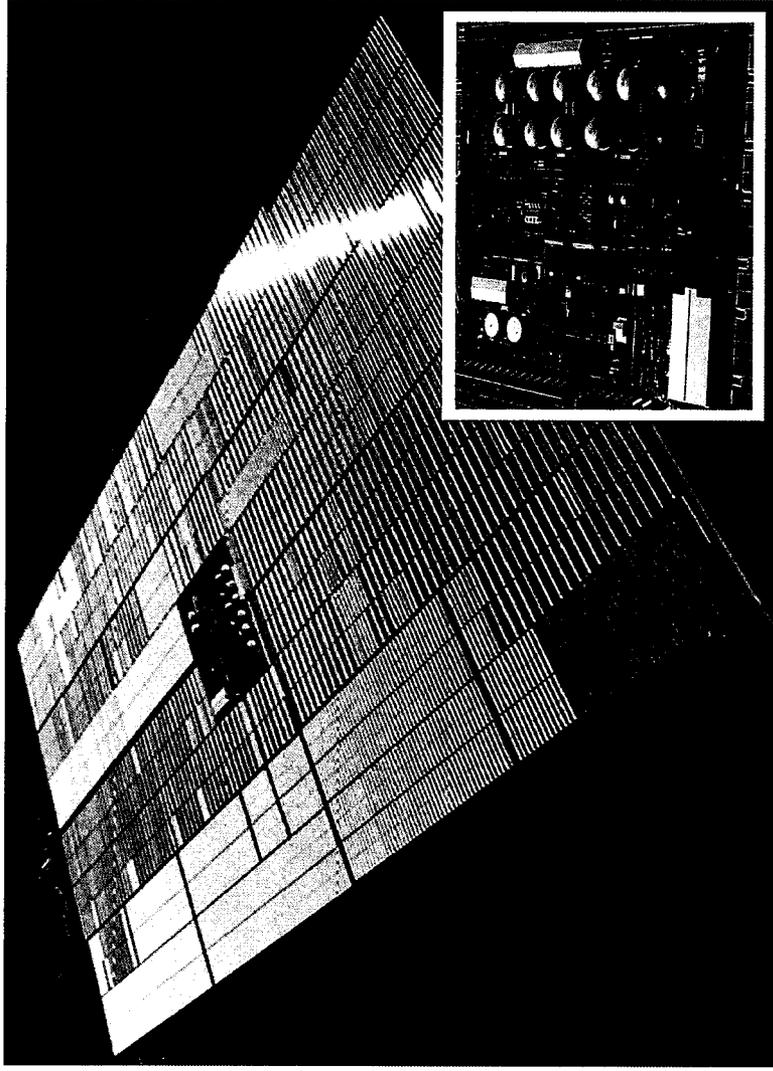
Solana - Energy Storage Today

Developer - Abengoa

Location - 10 miles west of Gila Bend, AZ

Capacity/Generation - 250 MW, annual energy approximately 900,000 MWhs

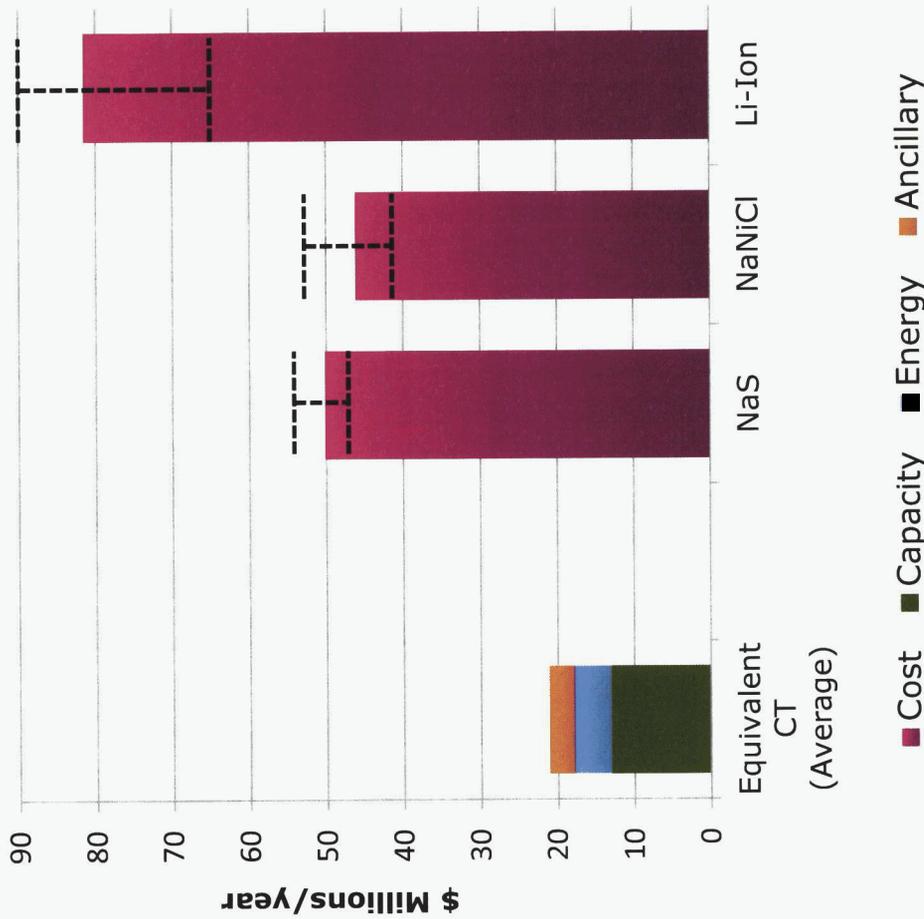
In-Service - October, 2013



- Thermal energy storage
 - Six hours at full capacity
 - Increased hours of storage at lower capacity levels
- 100% solar power availability at time of peak
 - Solar PV has reduced levels of capacity at time of peak
- Operational flexibility
 - Start before sunrise and run for morning peak by holding energy in storage from previous day
 - Continue to run for evening peak (after sunset)

Battery Storage vs Equivalent CT Costs

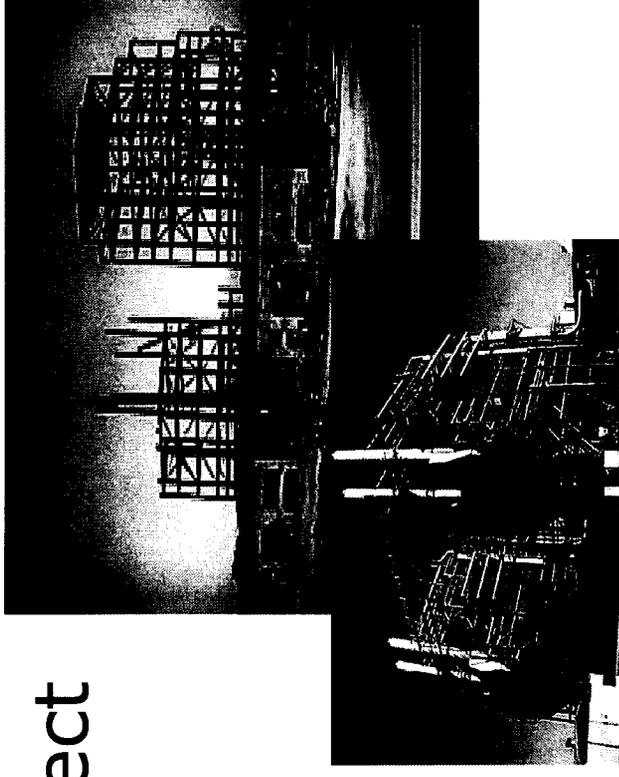
- Primary technologies
 - Sodium Sulfur (NaS)
 - 15 year battery life, 6 hour capability
 - Sodium Nickel Chloride (NaNiCl)
 - 15 year battery life, 5 hour capability
 - Lithium Ion (Li-Ion)
 - 15 year battery life, 5 hour capability
- Not a viable capacity solution at this time
 - High costs relative to other options
 - Value will increase as reliability is proven and costs come down
 - Limited number of utility scale sites
- Will be evaluated in future IRPs
 - Significant resource needs for 2019 and beyond
 - Near term opportunities for pilot projects



Source: DOE/EPRI 2013 Electricity Storage Handbook

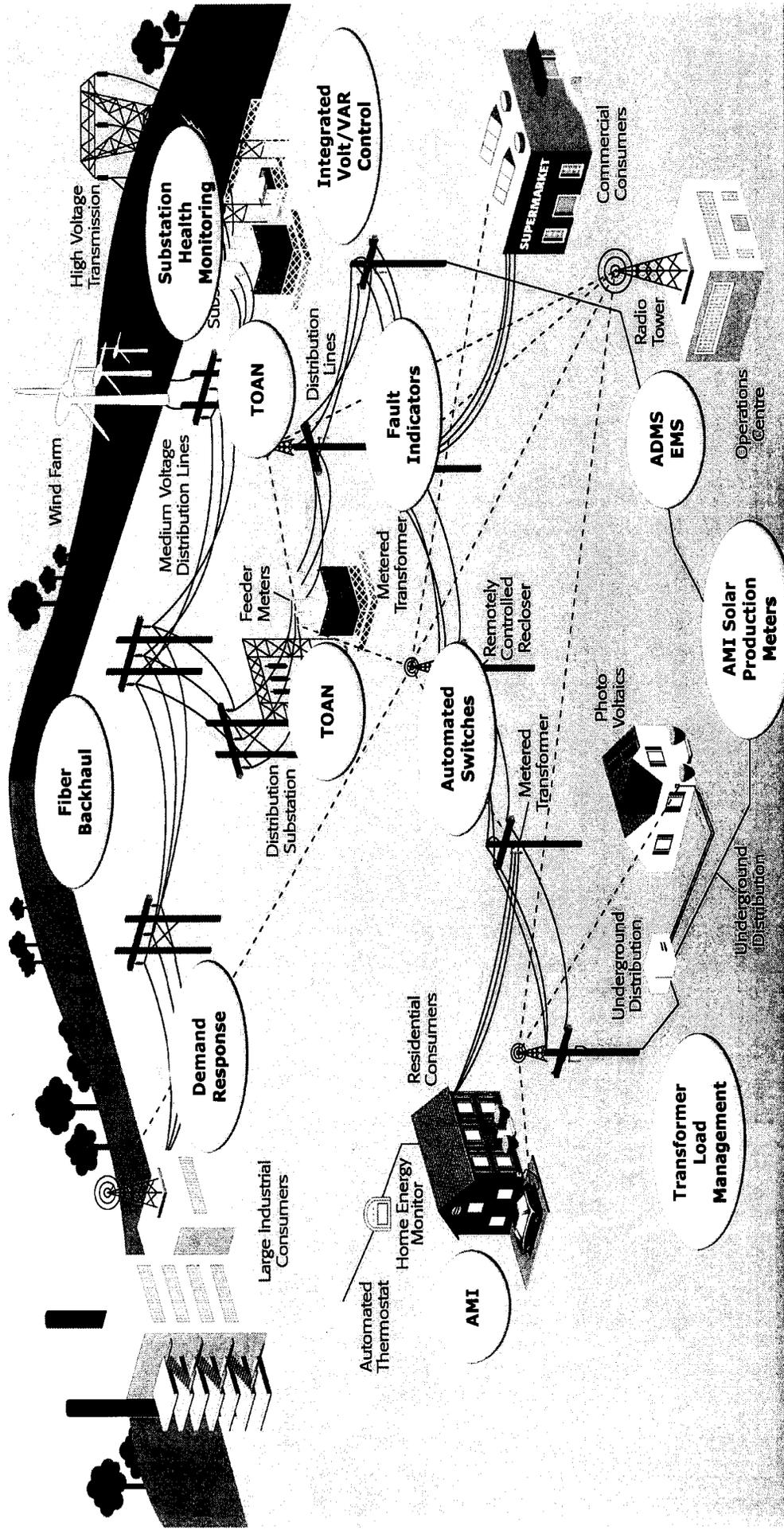
Ocotillo Modernization Project

- Retire aging, large steam units constructed in 1960
- Replace steam units with modern technology



- Maintain Valley reliability
- Responsive unit operations
- Environmental attributes
- In-service planned for summer 2018

Proliferation of Distributed Generation Demands A More Advanced Grid



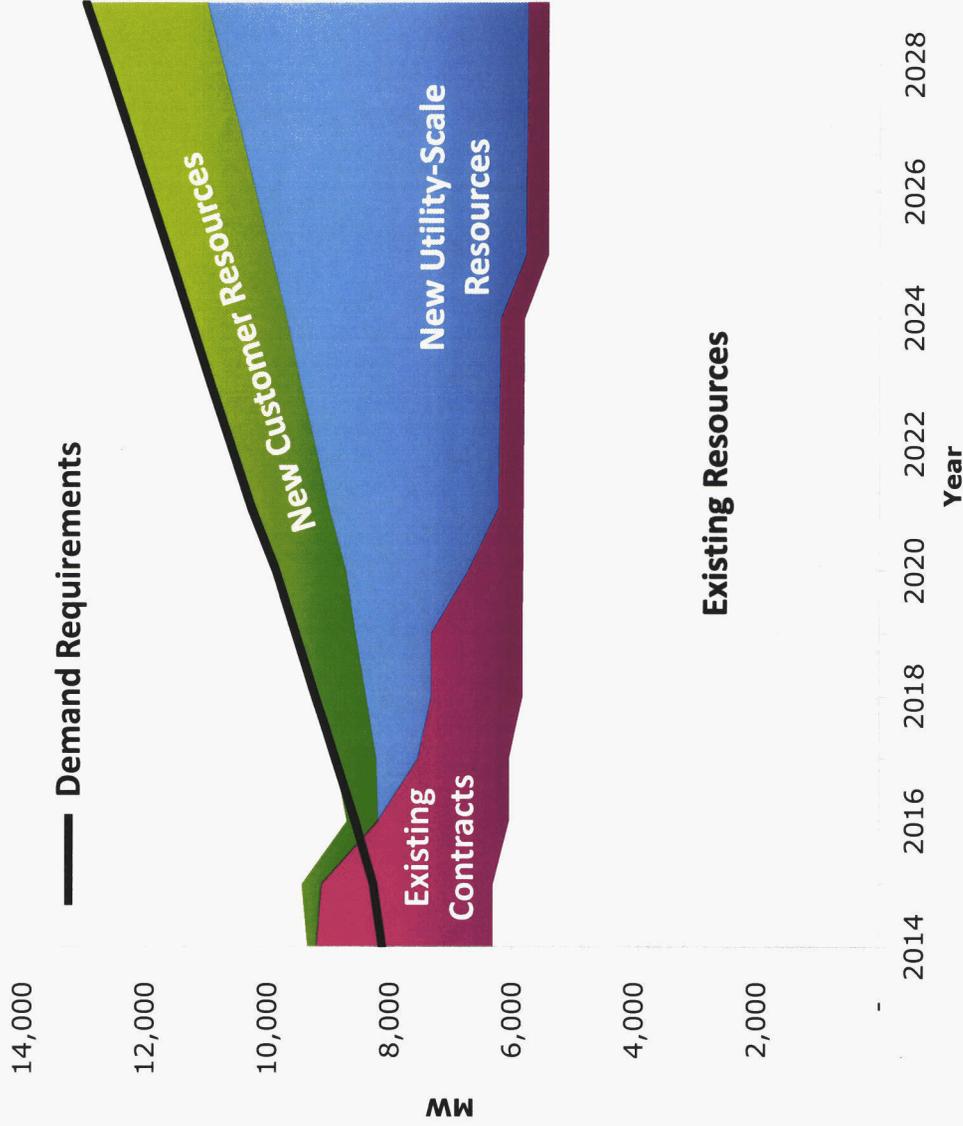


www.aps.com/resources

www.azenergyfuture.com

2014 IRP Overview

Supply-Demand Gap



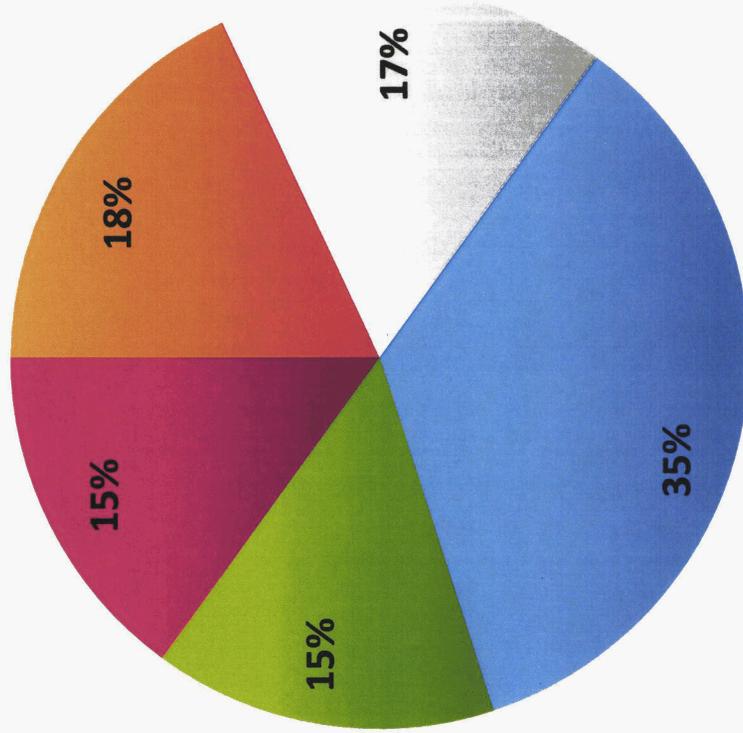
- Growth in customer energy requirements expected to resume
- Customer resources expected to triple over planning horizon
- Expiring purchase contracts means APS will need additional resources by 2017
- Additional resource needs anticipated to be met by increasingly diverse and efficient technologies



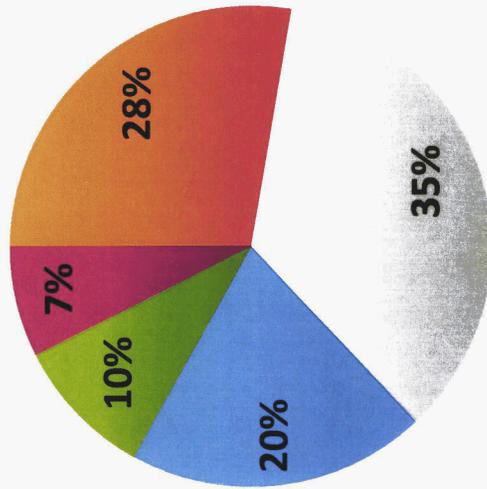
2014 IRP Overview

Diverse Energy Mix

2029



2014



■ Nuclear ■ Coal ■ Natural Gas ■ Renewable Energy ■ Energy Efficiency ■ Energy Efficiency

Source: APS 2014 Integrated Resource Plan