



City of Independence

Power & Light

**Power Supply RFP
Evaluation**

March 21, 2019

Brenda Hampton, IPL General Manager



Agenda

- 1) **Review of Master Plan Recommendations**
- 2) **Definitions of Capacity and Energy**
- 3) **IPL Capacity Requirements**
- 4) **Request for Proposal (RFP)**
- 5) **Description of Short-Listed Offers**
- 6) **Best and Final Offer Summary**
- 7) **Final Evaluation Results and Recommendation**
- 8) **Next Steps**



Review of Master Plan Recommendations

- **In November of 2017, City Council approved retaining Burns & McDonnell to provide services for the formation of an IPL Energy Master Plan.**
- **Objective of the Master Plan was to assess the options that may be available to IPL for providing reliable, low cost, and environmentally compliant power to its customers.**
- **The results of the IPL Master Plan were presented to City Council on August 27, 2018 and the final report was issued on September 20, 2018. The Master Plan was presented to the Public Utility Advisory Board (PUAB) on September 20, 2018.**



Review of Master Plan Recommendations

- **The following recommendations were presented for consideration:**
 - **The Blue Valley units have reached the end of their technical and economic useful lives.**
 - **IPL should consider retiring the units from service as soon as practical.**
 - **IPL should continue to operate and maintain the combustion turbines owned by IPL as they are low cost resources for providing capacity and provide enhanced reliability to IPL's system.**
 - **IPL should issue a power supply request for proposal (“RFP”) that would focus on resources that provide capacity for IPL to meet its obligations, with less focus on energy.**
- **On October 9, 2018, PUAB approved a motion to endorse a Power Supply RFP.**



Capacity and Energy

- **Capacity:** The maximum output of electricity that a generator can physically produce under ideal conditions. Capacity is generally measured in megawatts or kilowatts.
 - The capacity of all resources on the Southwest Power Pool (SPP) system together forms the capacity for the power system.
 - SPP is required by federal reliability standards to ensure the region has enough resources to meet the minimum total system capacity level.
 - SPP maintains a planning reserve margin of 12% to ensure adequate capacity is available to the market. As a Load Serving Member, IPL is required to have capacity reserves of 12% in excess of demand.
 - IPL must secure enough “firm” capacity to meet its demand plus reserve requirements.



Capacity and Energy

- **Energy:** The actual amount of electricity that is produced over a specific period of time. This is usually measured in kilowatt-hours.
 - SPP market participants provide energy resources that SPP uses to serve the member load. As a Load Serving Member, IPL has a legal obligation to provide firm electric service to our customers.
 - Wholesale electricity, or “energy”, is bought and sold two ways:
 - Through contracts between individual buyers and sellers
 - In markets managed by the ISO that establish prices for wholesale electricity products and services through competitive bids
 - Through these processes, the SPP integrated market provides all of the energy required to serve IPL’s load.
 - As long as IPL meets the SPP capacity requirements, SPP allows market participants to buy the required energy from the market to serve IPL’s load.



2020 Capacity Requirements

- SPP requires IPL to hold 12 percent of their Peak Demand in reserve capacity.
- IPL's Total Capacity Requirement:
 - Forecasted Peak Demand for 2020: 300 MW
 - IPL's Required Reserve Capacity: $300 \text{ MW} \times 12\% = 36 \text{ MW}$
 - IPL's Total Capacity Requirement: $300 \text{ MW} + 36 \text{ MW} = 336 \text{ MW}$
- IPL Total Capacity Needs Assuming Shutdown of Blue Valley 1, 2 and 3:
 - IPL Current Capacity with Blue Valley : 389 MW
 - Current Capacity of Blue Valley units 1, 2 and 3: 98 MW
 - IPL Capacity without Blue Valley: $389 \text{ MW} - 98 \text{ MW} = 291 \text{ MW}$
 - IPL Capacity Needs for 2020: $336 \text{ MW} - 291 \text{ MW} = 45 \text{ MW}$
- Capacity needs through 2039 were calculated assuming a 0.35% increase in load each year.



Projected Capacity Requirements to Replace Blue Valley

<u>Year</u>	<u>Capacity (MW)</u>
2020	46
2021	47
2022	48
2023	49
2024	51
2025	52
2026	53
2027	54
2028	55
2029	57
2030	58
2031	59
2032	60
2033	61
2034	63
2035	64
2036	65
2037	66
2038	68
2039	69



Transmission Deliverability Requirements

- SPP also has a resource adequacy requirement which specifies that IPL must maintain firm transmission delivery to the IPL system equal to our forecasted peak demand.
 - Firm transmission delivery is one that anticipates no planned interruption in transmission of capacity and energy from the point of receipt to the point of delivery.
- IPL's 2020 Capacity Needs for Firm Delivery to the IPL System:
 - Forecasted Peak Demand for 2020: 300 MW
 - IPL Capacity without BV: 291 MW - All currently deliverable to the IPL System.
 - IPL's 2020 Capacity Needs for Firm Delivery: 300 MW – 291 MW = **9 MW**
- Only our on-system generation (e.g. Blue Valley) is guaranteed deliverable to the IPL system.
- SPP will run a transmission study to determine deliverability to the IPL system for our selected option.



Power Supply RFP

- **On November 15, 2018 – Staff issued an RFP for up to 70 MW of capacity-only, or capacity and energy, beginning June 1, 2020.**
- **On January 15, 2019, the RFP closed and seven companies presented proposals:**
 - **Able Grid Energy Solutions**
 - **Dogwood Energy**
 - **Morgan Stanley Capital Group**
 - **NextEra Energy Resources**
 - **Oneta Power**
 - **Tenaska Power Services**
 - **The City of Lincoln, NE**



Power Supply RFP

- **Burns & McDonnell was engaged to review the initial offers and provide an economic analysis for each respondent.**
- **An Executive Level Evaluation Committee was formed to review the results of the initial analysis.**
- **Based on this information, the Evaluation Committee selected the following proposals for short-list consideration:**
 - **Dogwood Energy**
 - **NextEra Energy Resources**
 - **Oneta Power**
 - **The City of Lincoln, NE**
- **The following slides contain a summary of each proposal.**



Dogwood Energy

- **Dogwood Energy is offering the City of Independence an additional ownership share of 70MW from the Dogwood Energy Facility.**
- **Plant is a 610 MW natural gas-fired combined cycle plant located in Pleasant Hill, Missouri. Facility was placed in service in 2002.**
- **Pros:**
 - **The City currently owns a 75 MW share in the plant.**
 - **Contract would substantially match existing agreement.**
 - **Closest plant to the IPL system.**
- **Cons:**
 - **In the event of a catastrophic failure, the City would be responsible to pay for a portion of the rebuild costs. The City would also be responsible to pay a portion of the future O&M costs, future environmental compliance upgrade costs, and decommissioning costs upon closure.**
 - **Highest Average Annual Cost compared to other offers assuming average revenue returns.**



Oneta Power

- **Oneta Power is offering the City of Independence the opportunity to purchase 50-70 MW of capacity-only as well as capacity/energy contracts with 10, 15, or 20 years terms.**
- **Plant is a 1,133 MW natural gas-fired combined cycle plant located in Coweta, Oklahoma. Facility was placed in service in 2002.**
- **Pros:**
 - **Lowest Average Annual Cost compared to other long term offers**
 - **Low risk capacity-only purchase opportunity.**
 - **Would not be responsible for O&M or other costs associated with ownership**
 - **Fixed price for 20 years allowing for budget certainty.**
 - **IPL would be able to annually adjust the contract capacity to match its load requirements as it experiences changes in peak demand.**
- **Cons:**
 - **Confirmation of transmission deliverability to local IPL system.**



NextEra Energy Resources

- **NextEra is offering the City of Independence the opportunity to purchase SPP Deliverable Capacity with 1, 5, or 10 years terms. The potential generation resources reside in Kansas, Oklahoma, and Texas.**
- **Pros:**
 - **Low risk capacity-only purchase opportunity.**
 - **Would not be responsible for O&M or other costs associated with ownership**
- **Cons:**
 - **Confirmation of transmission deliverability to local IPL system.**
 - **NextEra did not indicate the location of the proposed generation source as was required in the RFP.**



Lincoln Electric

- **Lincoln Electric is offering the City of Independence the opportunity to purchase 46 MW of short-term SPP accredited capacity for a 1 year term.**
- **This unit is a heavy frame, dual fuel combustion turbine, capable of operating on natural gas or fuel oil located in Lincoln, Nebraska.**
- **Pros:**
 - **Lowest short term Average Annual Cost.**
- **Cons:**
 - **Does not provide long term solution to power supply needs**
 - **Complexity and uncertainty of transmission deliverability if combined with other offers.**



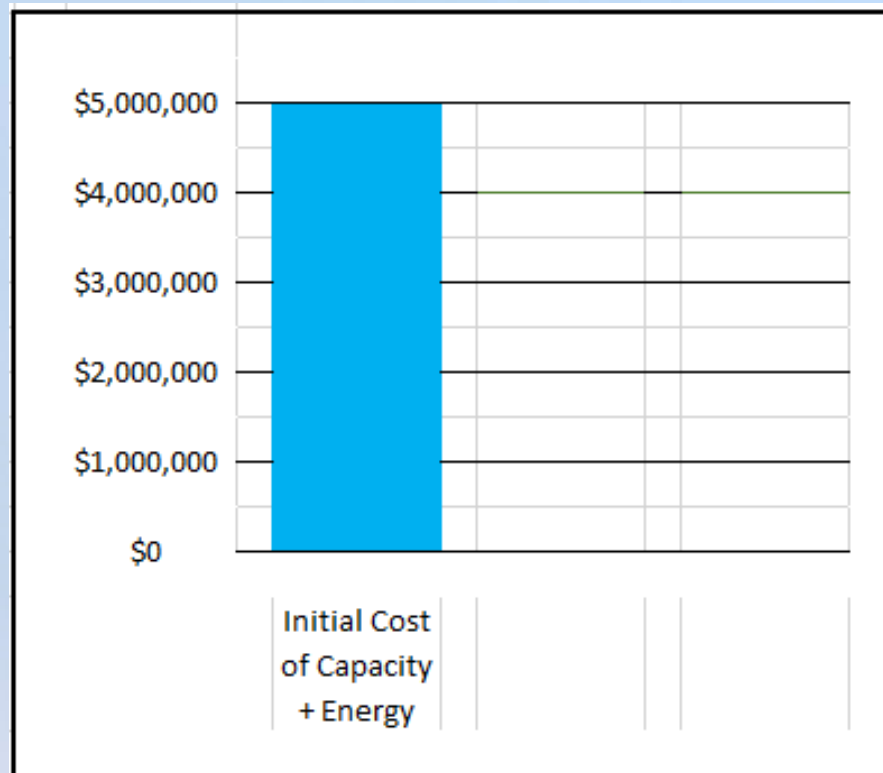
Best and Final Offer Request

- **On March 1, 2019, the short list candidates provided their best and final price offering.**
 - **Dogwood Energy provided an additional 5% discount to the purchase price.**
 - **Oneta offered a slight % discount on their Capacity/Energy offer but held firm on their Capacity-Only offering.**
 - **NextEra indicated that their pricing was “Indicative” and not final.**
 - **Based on not having firm pricing, the Evaluation Committee recommended that this offer be pulled from further consideration.**
 - **Lincoln Electric held firm on their short term offering.**
 - **The Committee eliminated the Lincoln Electric proposal since it did not address the long term power supply requirements.**



Simple Illustration of Capacity + Energy Annual Cost

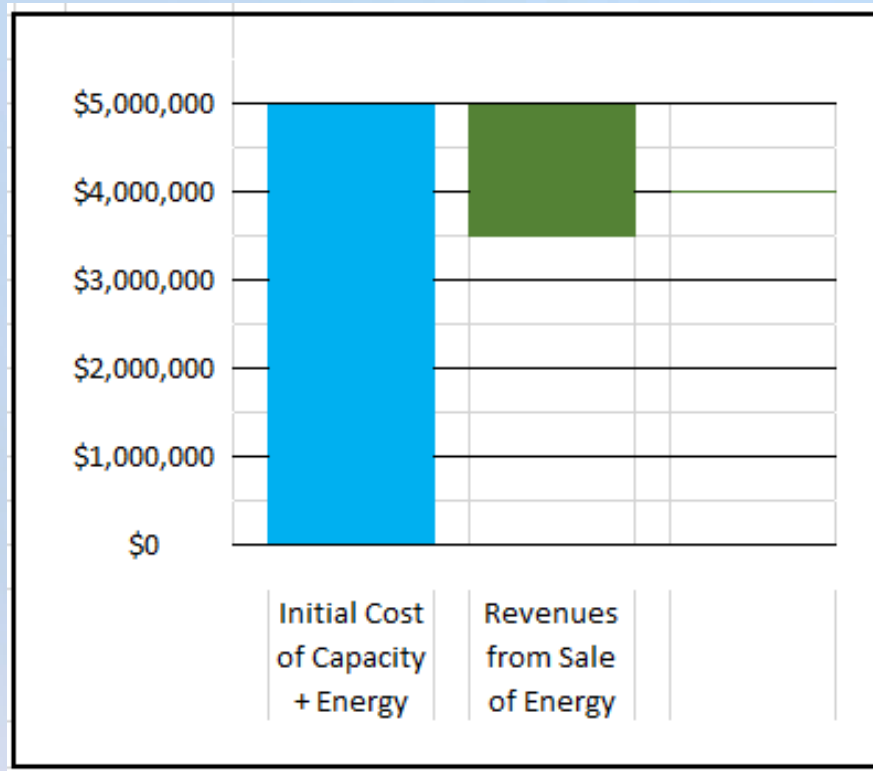
- Annualized Cost for Capacity + Energy = \$5,000,000





Simple Illustration of Capacity + Energy Annual Cost

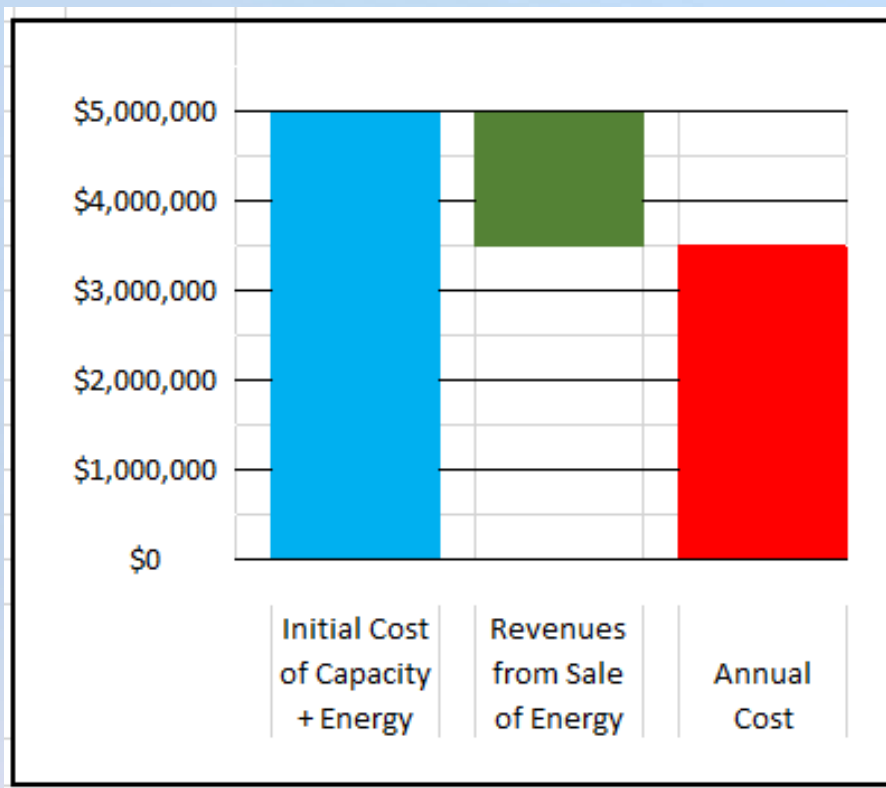
- Annualized Cost for Capacity + Energy = \$5,000,000
- Annual Revenues for Sale of Energy = \$1,500,000





Simple Illustration of Capacity + Energy Annual Cost

- Annualized Cost for Capacity + Energy = \$5,000,000
- Annual Revenues for Sale of Energy = \$1,500,000
- Annual Cost = \$3,500,000



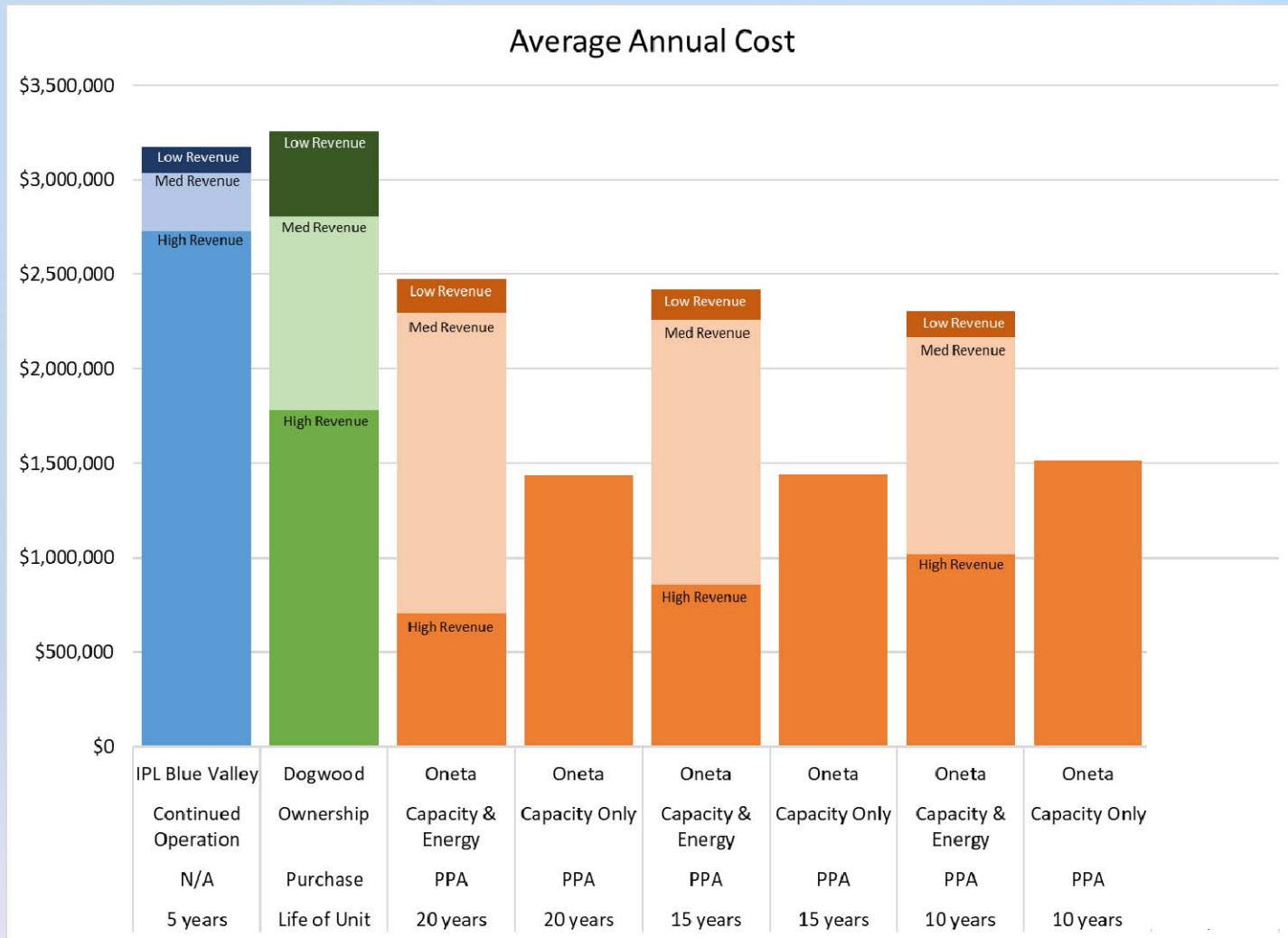


Final Evaluation

- **The following summarizes the final economic analysis provided by Burns & McDonnell.**
- **The evaluation for Capacity and Energy options included a projection of revenue opportunities based on historical market pricing from 2016, 2017, and 2018.**
 - **2018 represented the best year for revenues. 2017 represented a low revenue year and 2016 was historically an average year for revenue.**
- **For comparison purposes, annual costs to continue to operate Blue Valley Unit 3 for 5 more years was provided. This assumes that staff will be reduced to the bare minimum requirements and no capital improvement expenses will be required during the 5 year period.**



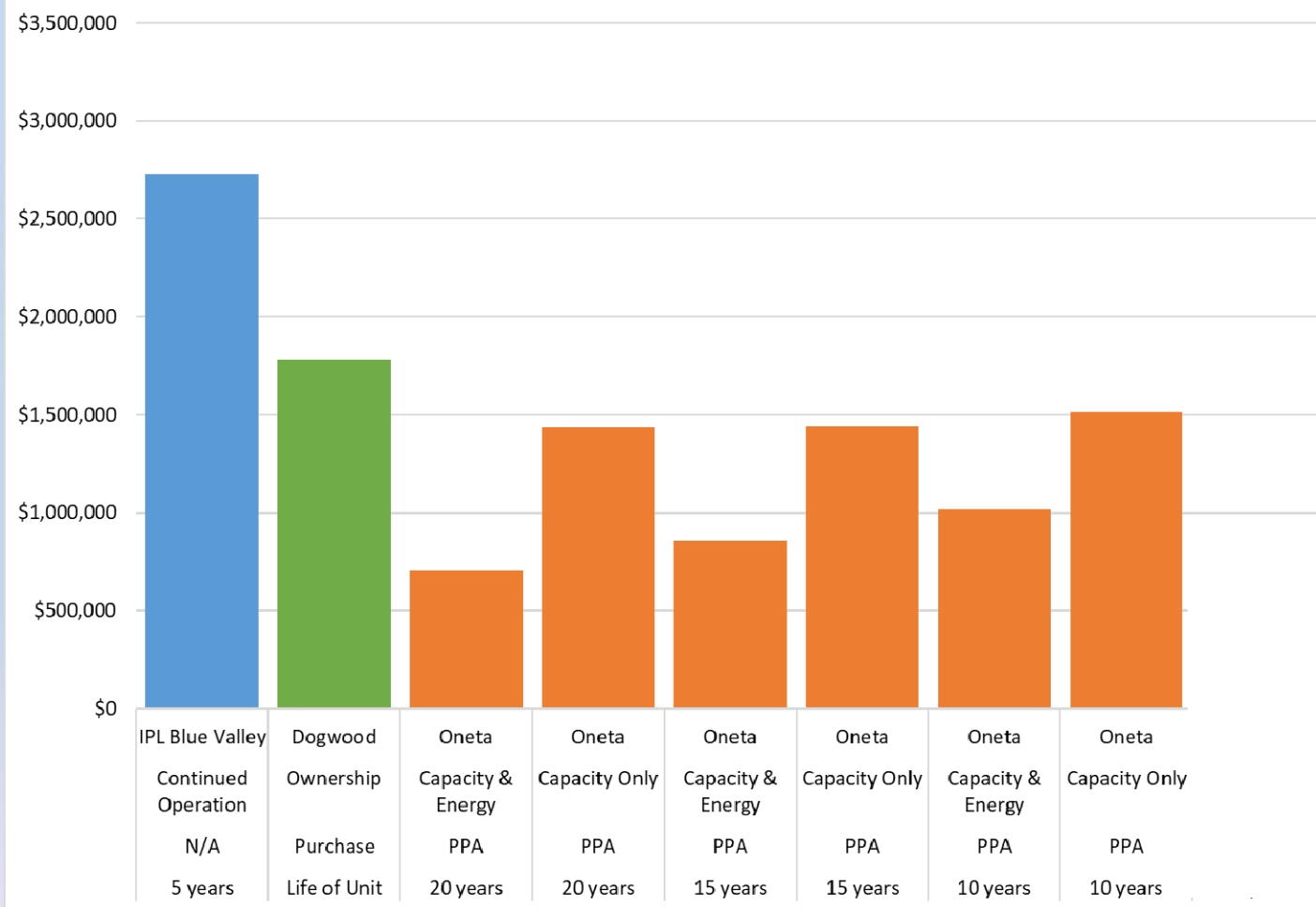
Economic Evaluation Summary





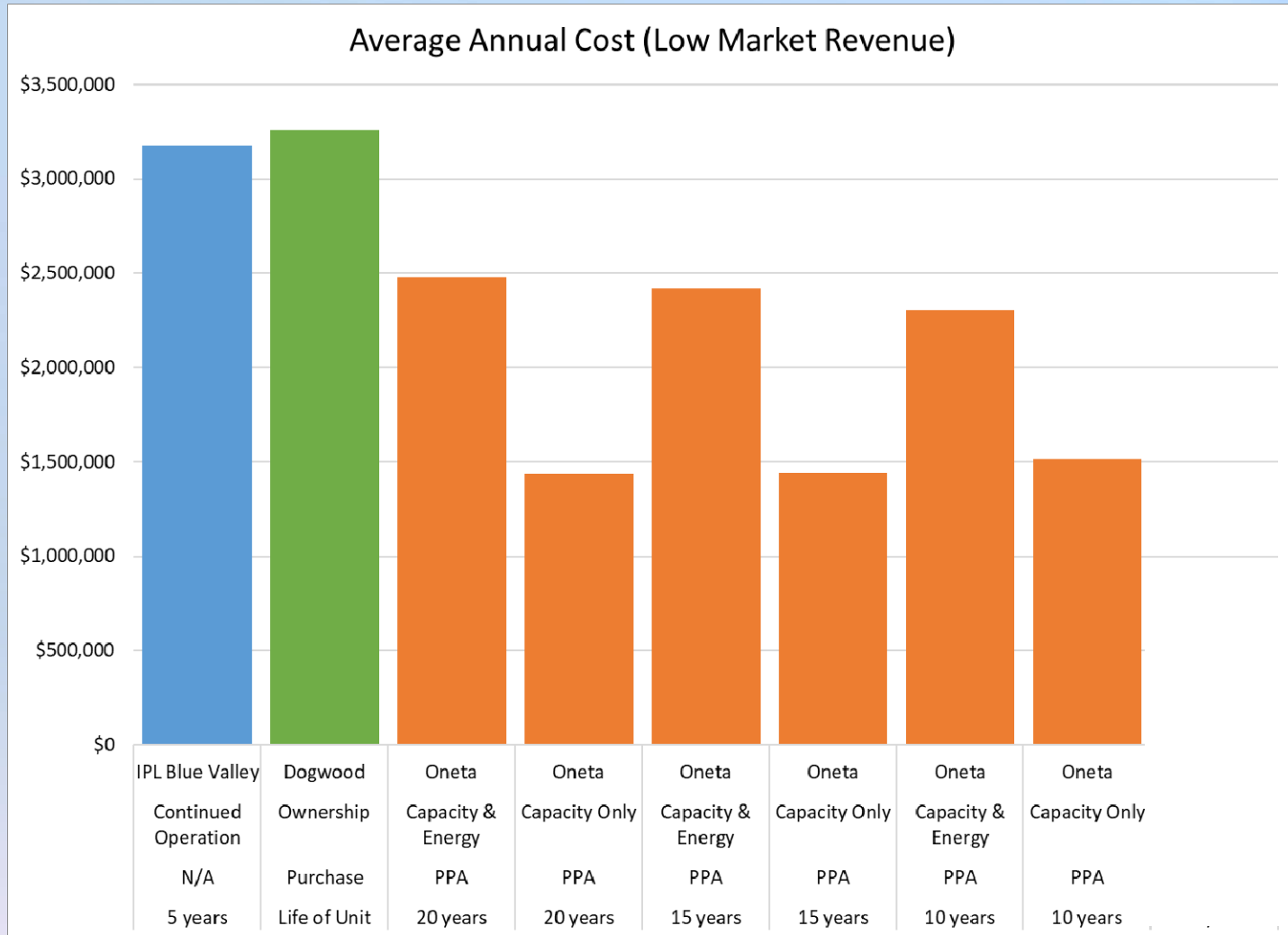
Economic Evaluation Summary Assuming High Revenue

Average Annual Cost (High Market Revenue)



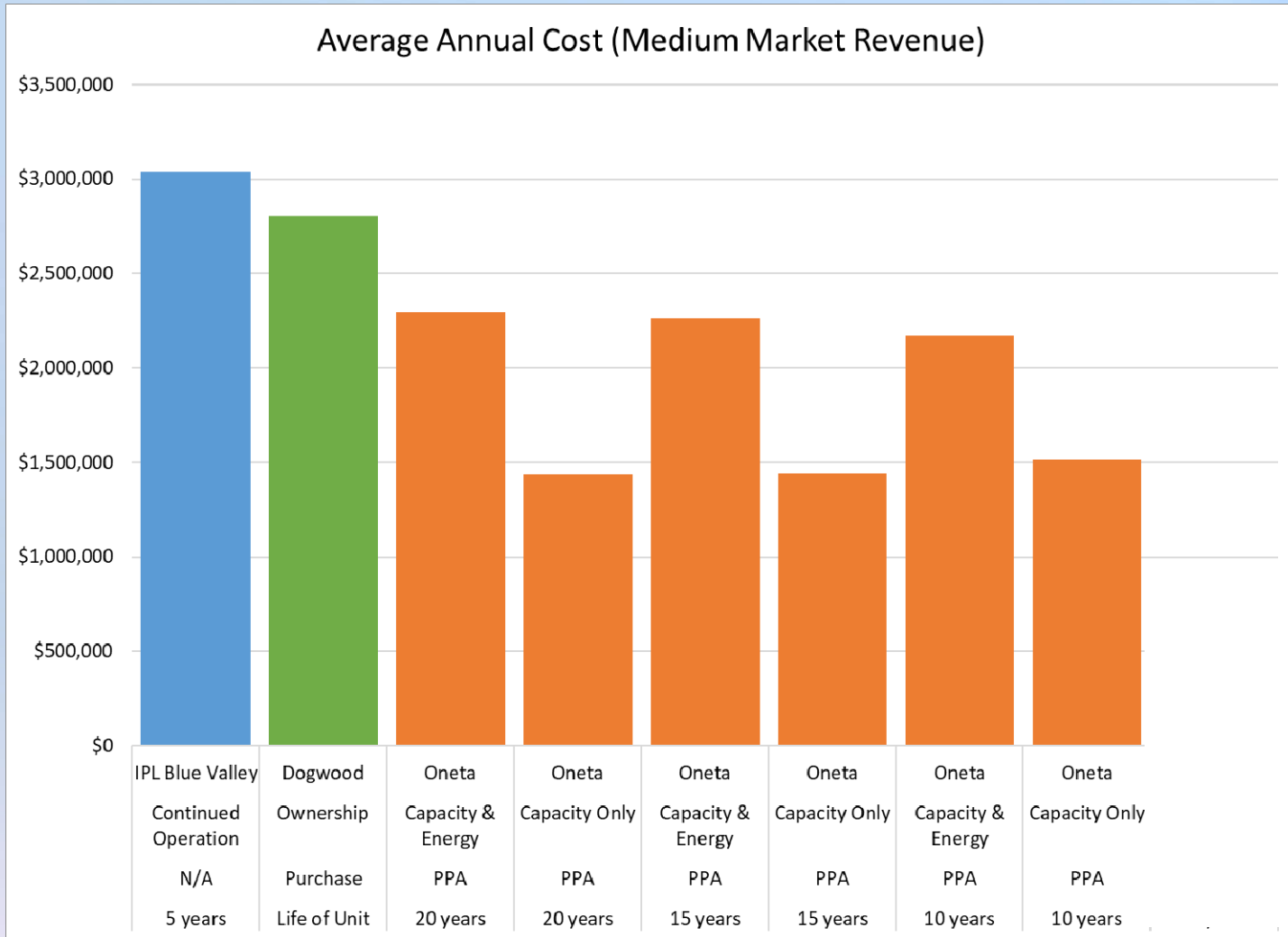


Economic Evaluation Summary Assuming Low Revenue



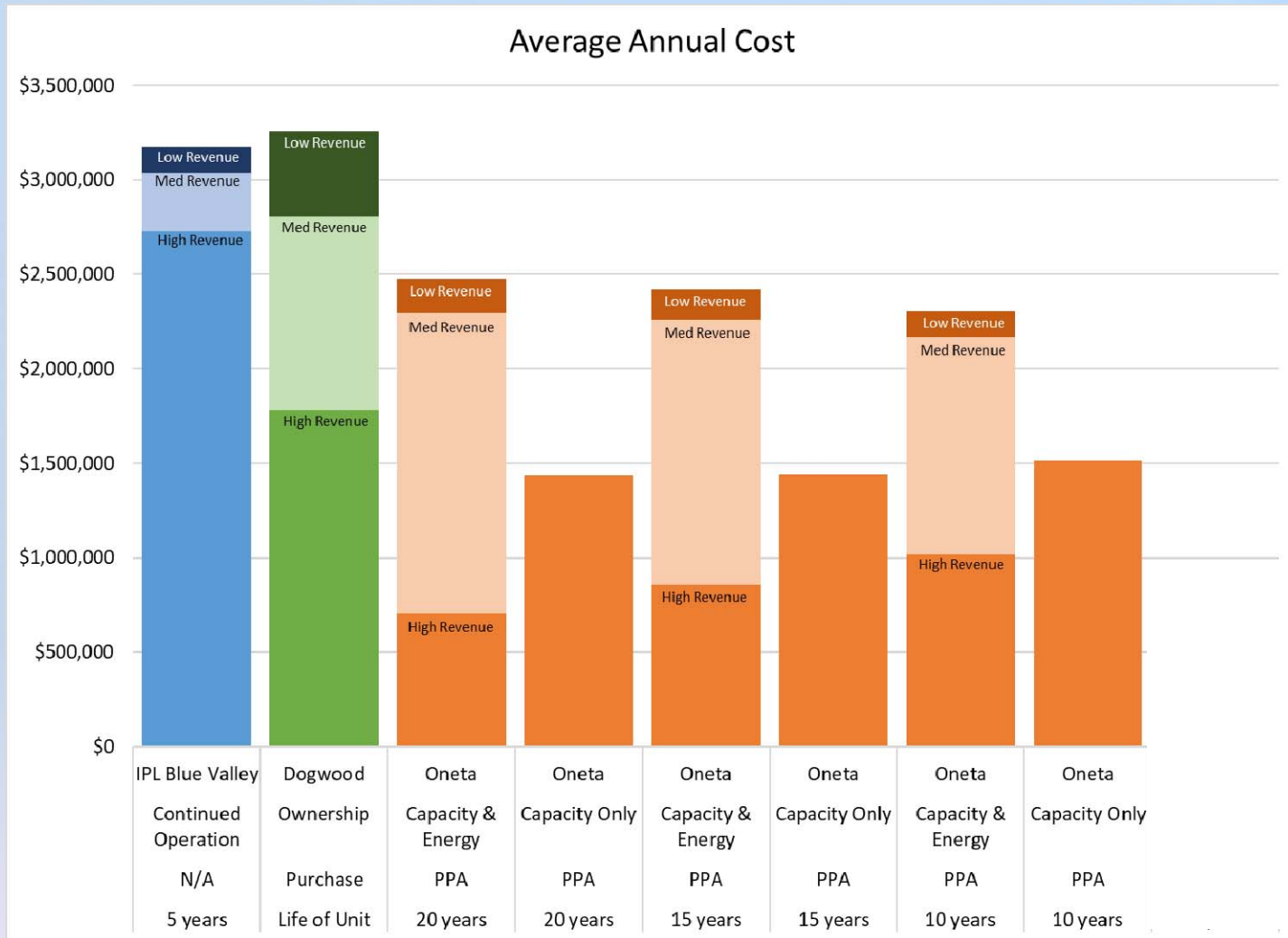


Economic Evaluation Summary Assuming Medium Revenue





Economic Evaluation Summary





Evaluation of Risks

- **Capacity-Only provides the most certainty regarding cost to IPL**
 - Future capacity prices are likely to rise over the next 5-10 years due to shutdown of fossil and nuclear power plants; however, the influx of new renewable generation may offset some of the anticipated retirements.
- **Capacity and Energy options provide an opportunity to reduce costs through sales of energy**
 - Volatility in energy prices over the length of the contracts introduces significant uncertainty in cost to IPL on an annual basis
 - Rapid changes in the resource mix, introduction of new technologies and increased maintenance outages could negatively impact the ability of these more mature gas-fired resources to compete in the energy market
- **Ownership option provides capacity and energy over the life of the unit**
 - In addition to the risks noted above, O&M expenses, environmental compliance upgrades, and decommissioning need to be considered.



Executive Committee Recommendation

- After an evaluation of the proposals and the opportunities and risks associated with each option, the Committee recommends the Oneta 20 year Capacity-Only proposal as it represents the lowest overall cost for replacement capacity with minimal risk of market fluctuations.



Next Steps

The following summarizes the process to finalize the Power Supply Recommendation.

- **March 21st - PUAB makes recommendation to Council - COMPLETE**
- **April 8th – City Council Study Session**
- **April 15th – City Council First Reading**
- **April 18th – PUAB / Public Hearing**
- **May 6th – City Council Second Reading and Recommendation for Contract Award**
- **May 31st – Deadline for requesting transmission service from SPP**
- **November 15th – SPP posts transmission study results with cost estimates**
 - **If transmission upgrade costs are within reason, IPL would accept the service**
 - **November 30th - Notify SPP that IPL is retiring BV Plant June 1st 2020 (6 month notification)**
- **June 1, 2020 – Blue Valley Plant Retired**



Questions?