



ELECTRICITY AND OUR FUTURE
CWLP'S INTEGRATED RESOURCE PLAN
Public Utilities Committee Meeting
May 6, 2019

Agenda

- Purpose of IRP
- Public Process
- TEA Present Results
 - Report & Presentation Online www.cwlp.com/IRP
- Next Steps

IRP

An Integrated Resource Plan (IRP) is the result of a **comprehensive** planning study, which provides a recommended mix of supply- and demand-side resources a utility may use to meet its customers' **future** electricity needs.

IRP Public Process

- Public Meetings & Presentations
June 11, 2018, September 17, 2018, December 18, 2018, May 6, 2019
- 2018 Public Comments On IRP Inputs
- 2019 Public Comments: May 7th to June 3rd
IRP@cwlp.com; US Mail; Open House
- Open House May 20th
Lincoln Library, 5:00-7:00 pm
- Next Public Utilities Committee Meeting

www.cwlp.com/IRP



CWLP Integrated Resource Plan

Spring 2019

Overview

- Introduction
- Process Overview
- Results Overview
- Recommendations Explanation

Process Overview

IRP Process Flow



Planning Considerations



“What is cheapest isn’t always what is best.”

Cost

Total Cost	Per Unit Cost
Net Present Value of Revenue Requirements	Levelized Cost of Energy
NPVRR (\$)	LCOE (\$/MWh)

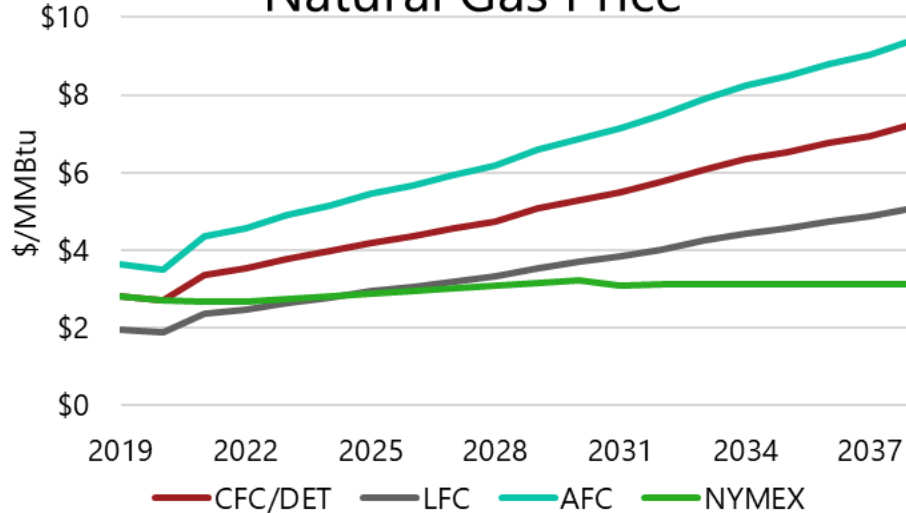
Risk

- Renewables
- Market prices
- Weather
- Environmental regulations
- Power plant retirements
- Electricity usage
- Electric vehicles

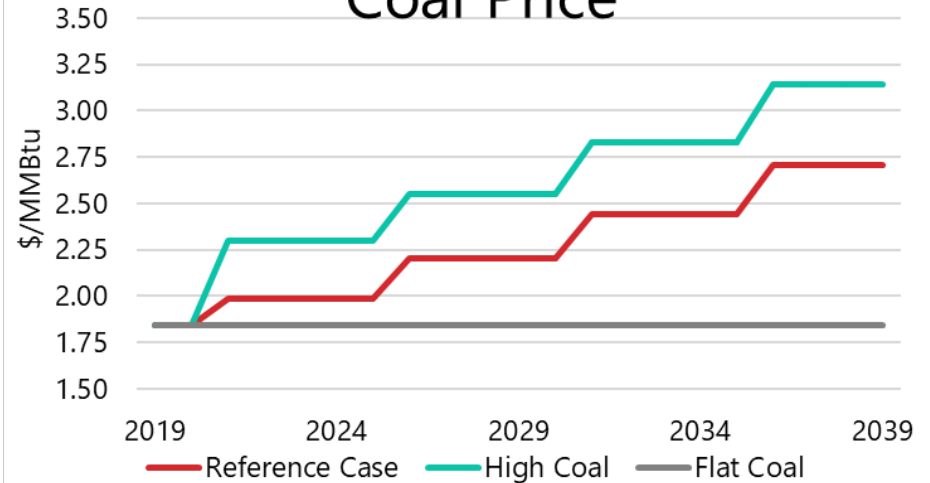


Modeled Fuel Price Uncertainty

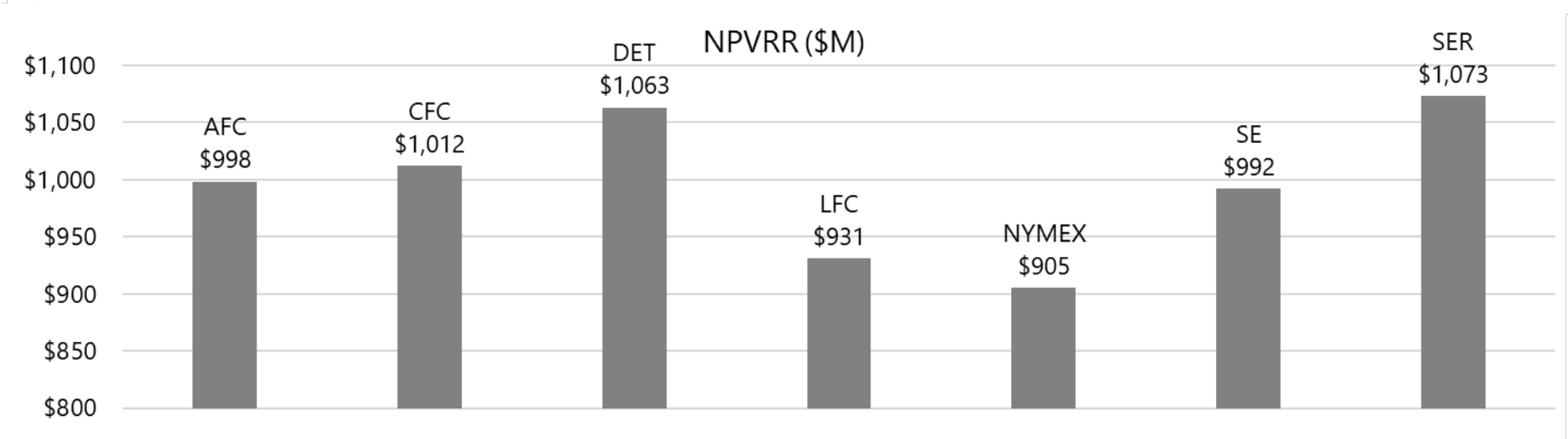
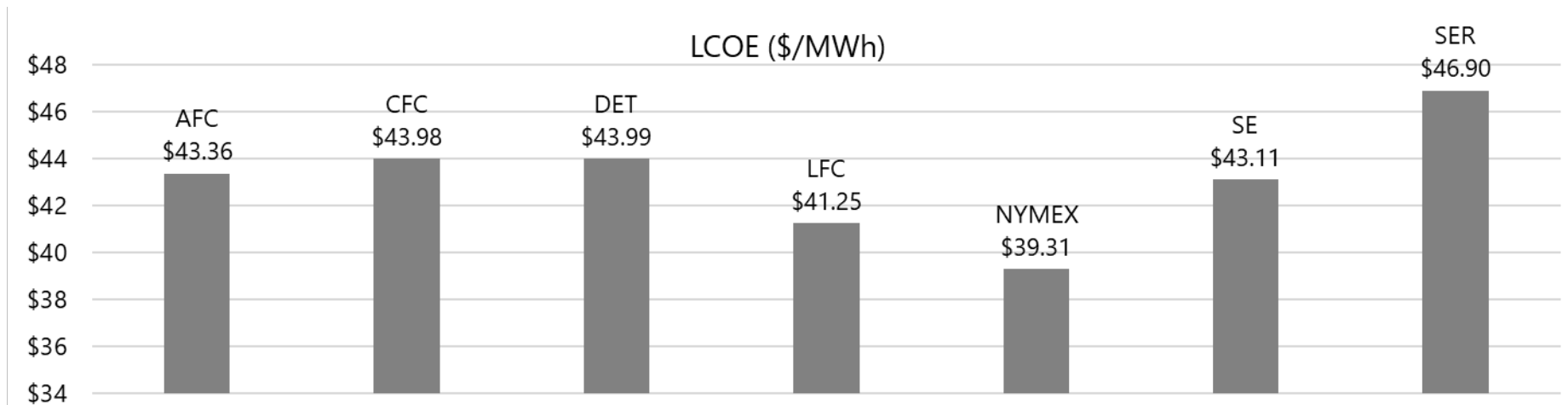
Natural Gas Price



Coal Price



Market Risk Cases



Flexibility

- Short term actionable items
- Long term directional items
 - Greater potential to change with circumstances
- Phased approach
 - Improves optionality
 - Reduces portfolio risk

Results Overview

Considered Resources

- Natural Gas
 - Combustion Turbine
 - Combined Cycle Gas Turbine
 - Reciprocating Internal Combustion Engine
- Renewables
 - Solar
 - Wind
- Battery Storage
- Market Purchases

Energy Efficiency Programs

- Existing Programs:

- Heating and A/C

- Lighting

- Home Energy Audit

- Low Income

- Potential Programs:

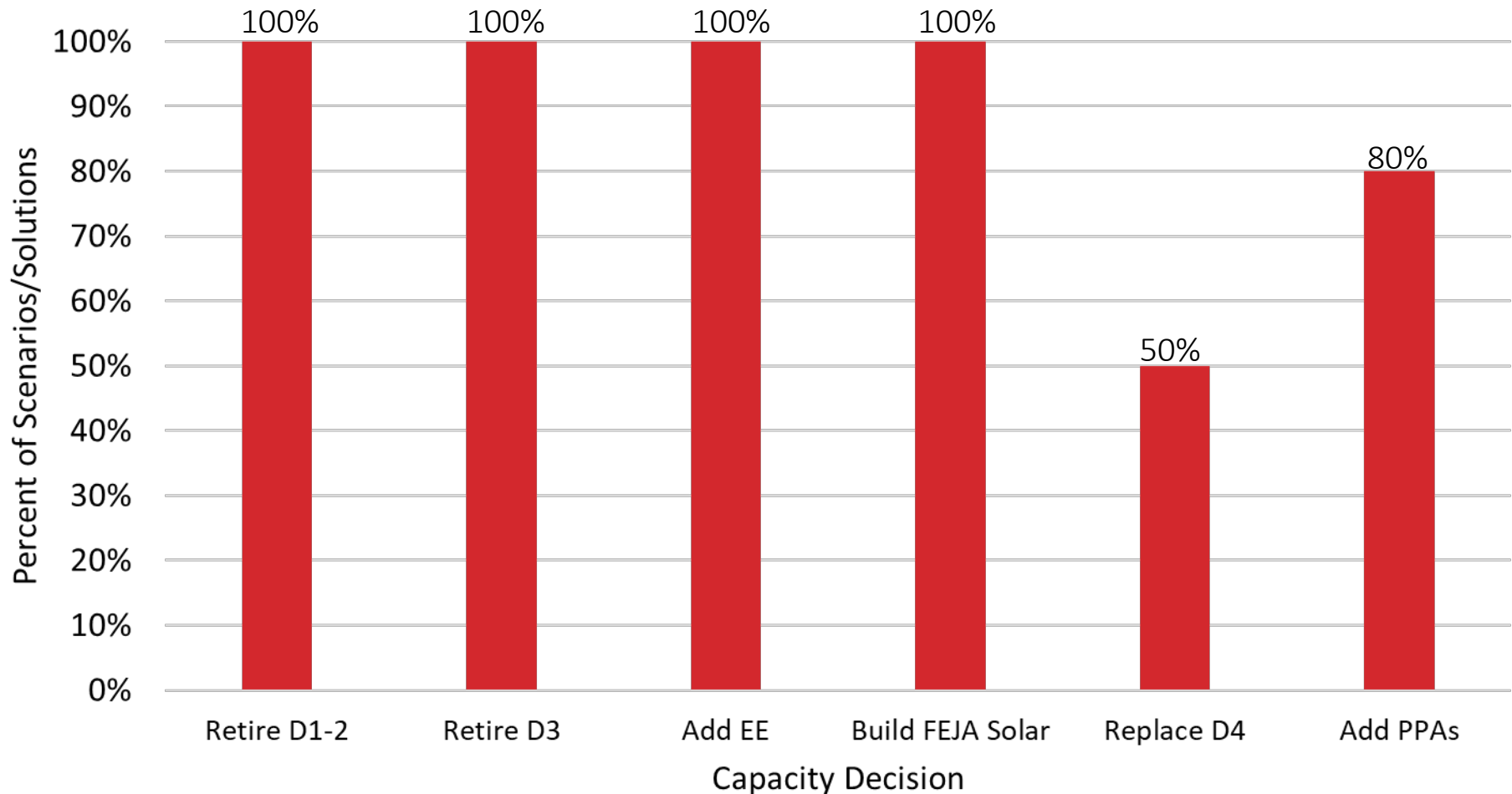
- Insulation incentives

- Smart Thermostat Program

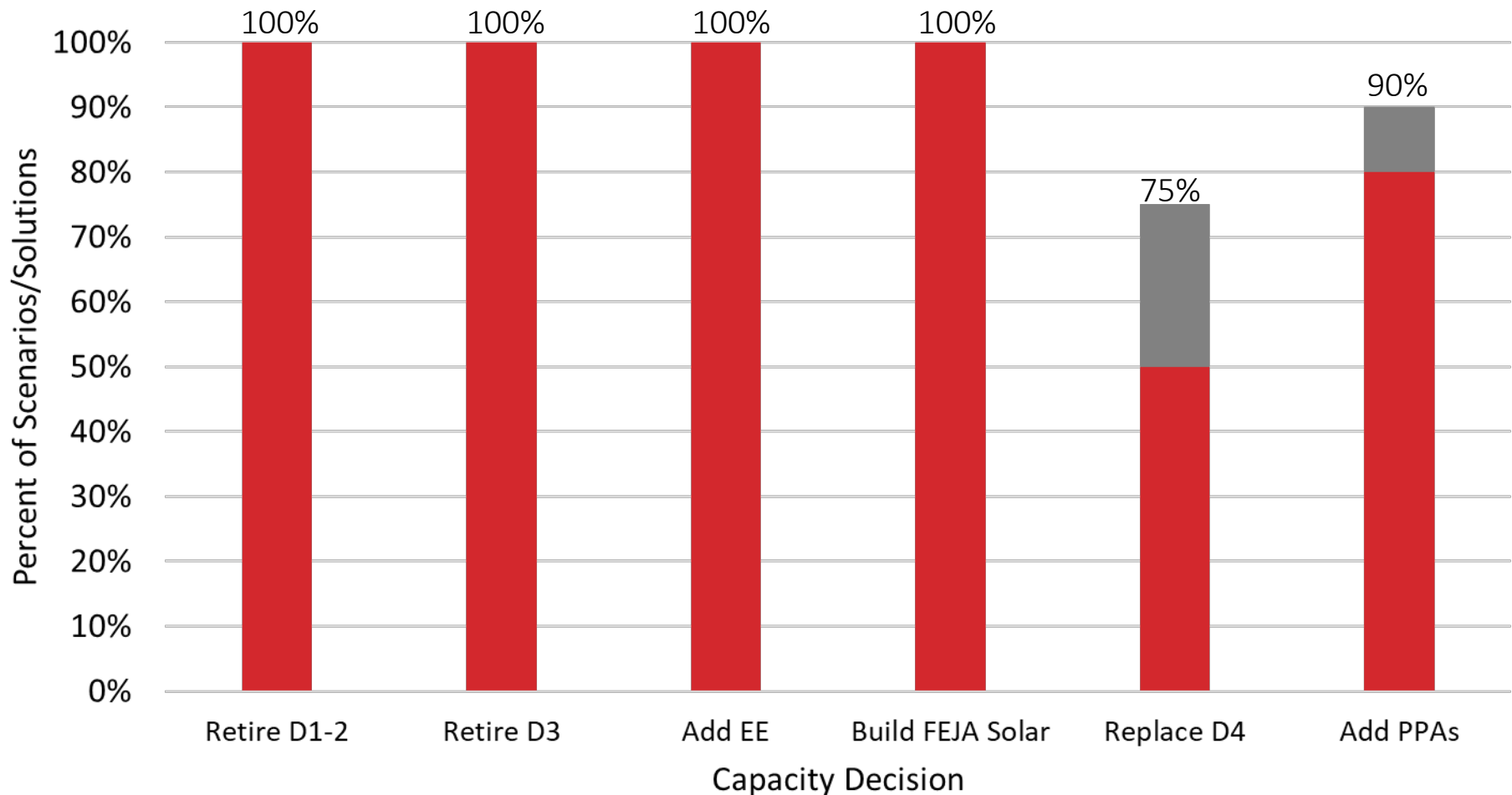
- A/C Rebate

- Social Behavior Change

Short-Term Results



Long-Term Results



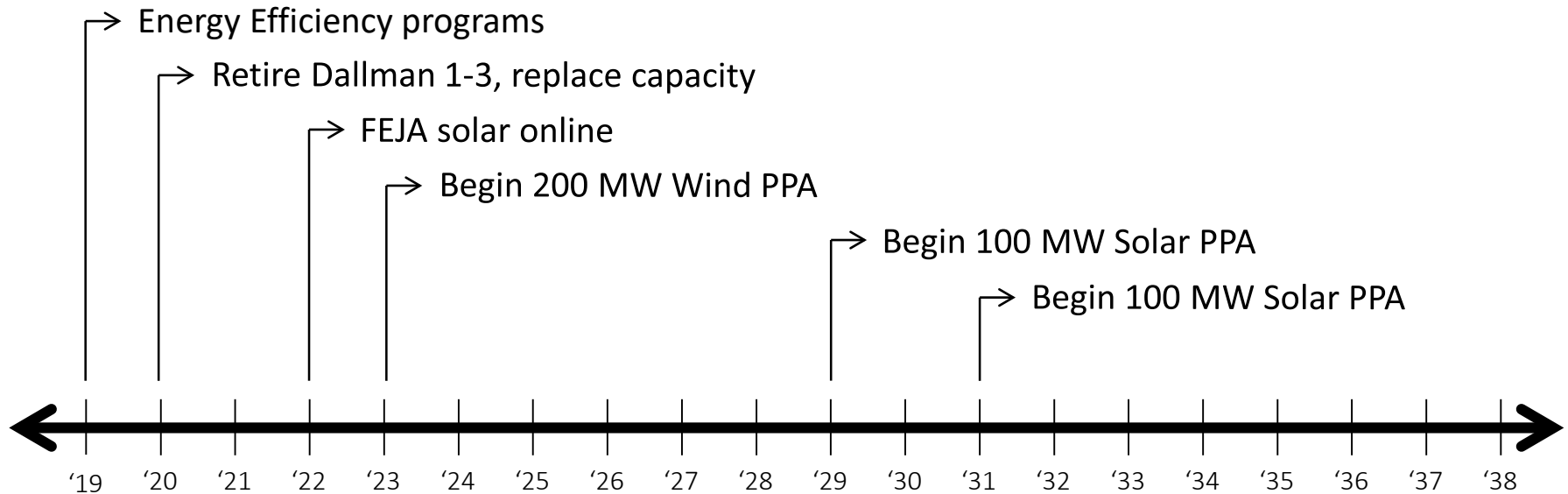
Recommendations Explanation*

*Recommendations based on best information available during study process

Recommendation Summary

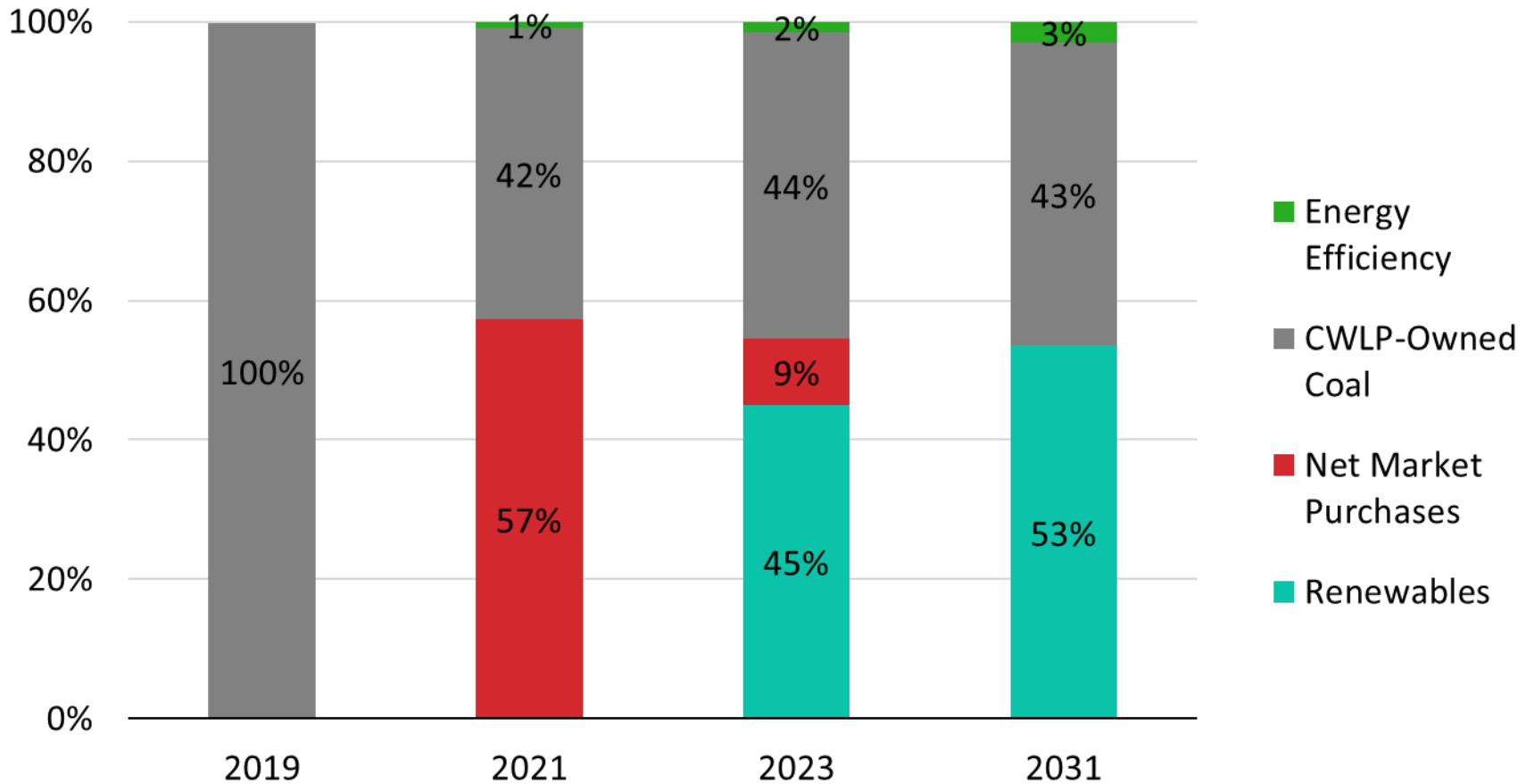
- Retire Units 1,2 & 3 in 2020 (or as practical)
- Retain Unit 4
- Issue renewable RFP
- Issue capacity & energy RFP
- Expand energy efficiency efforts
- Retain peaking units
- Build FEJA solar (if feasible)

Recommendation Timeline

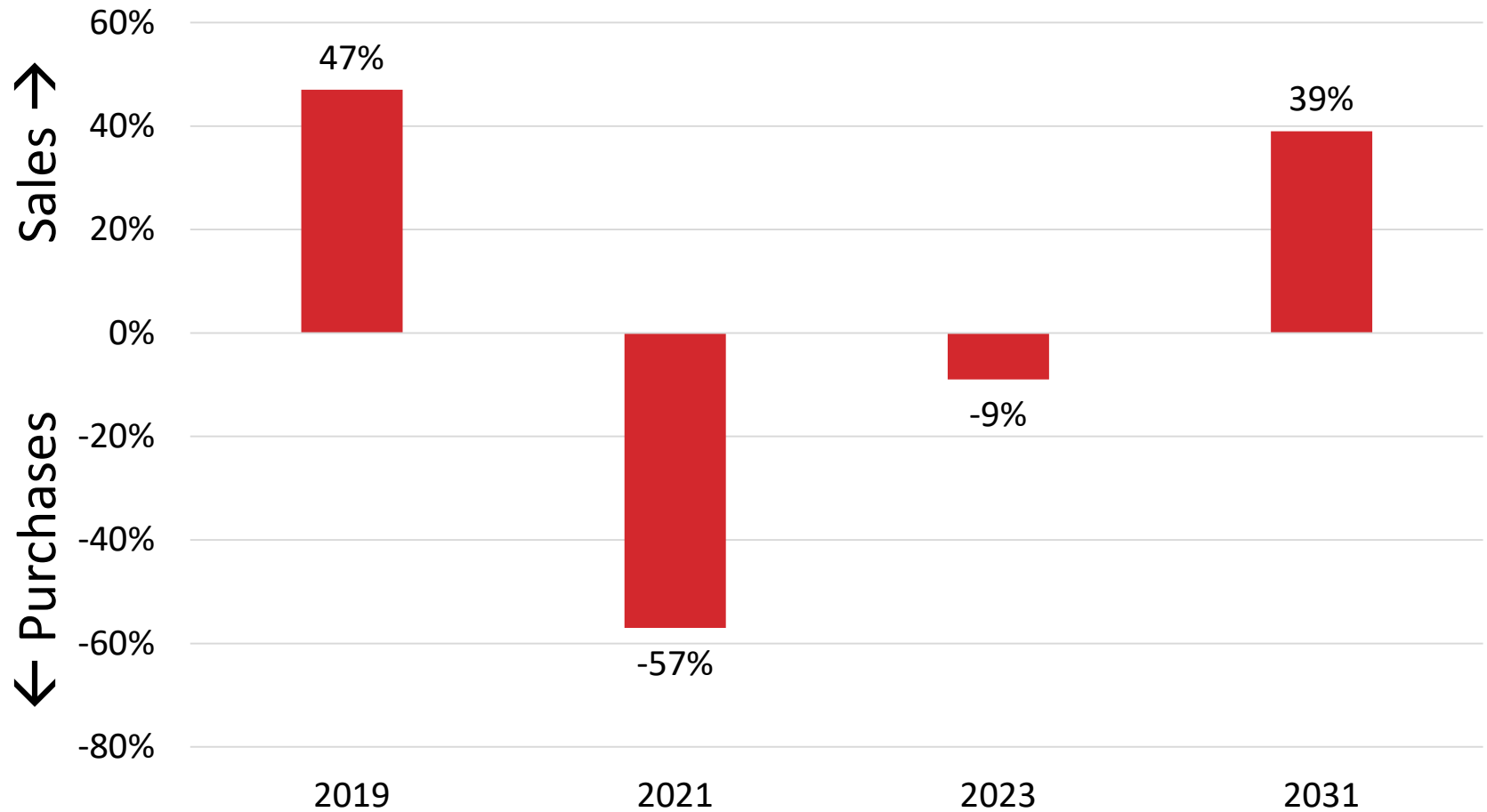


- NPV (\$M): 1,042
- LCOE (\$/MWh): 45.29

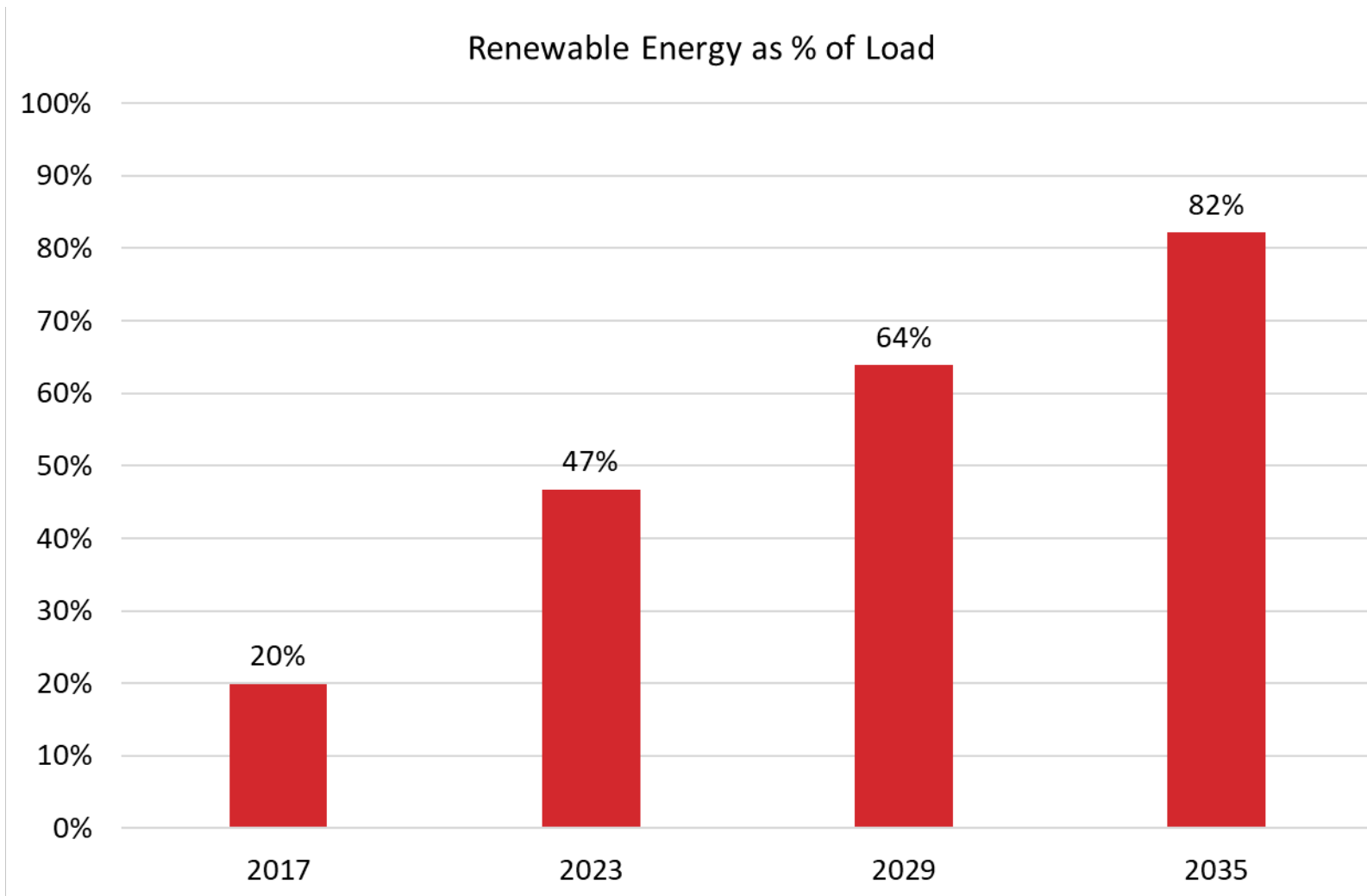
Generation Mix



Market Purchases and Sales



Environmental Impact



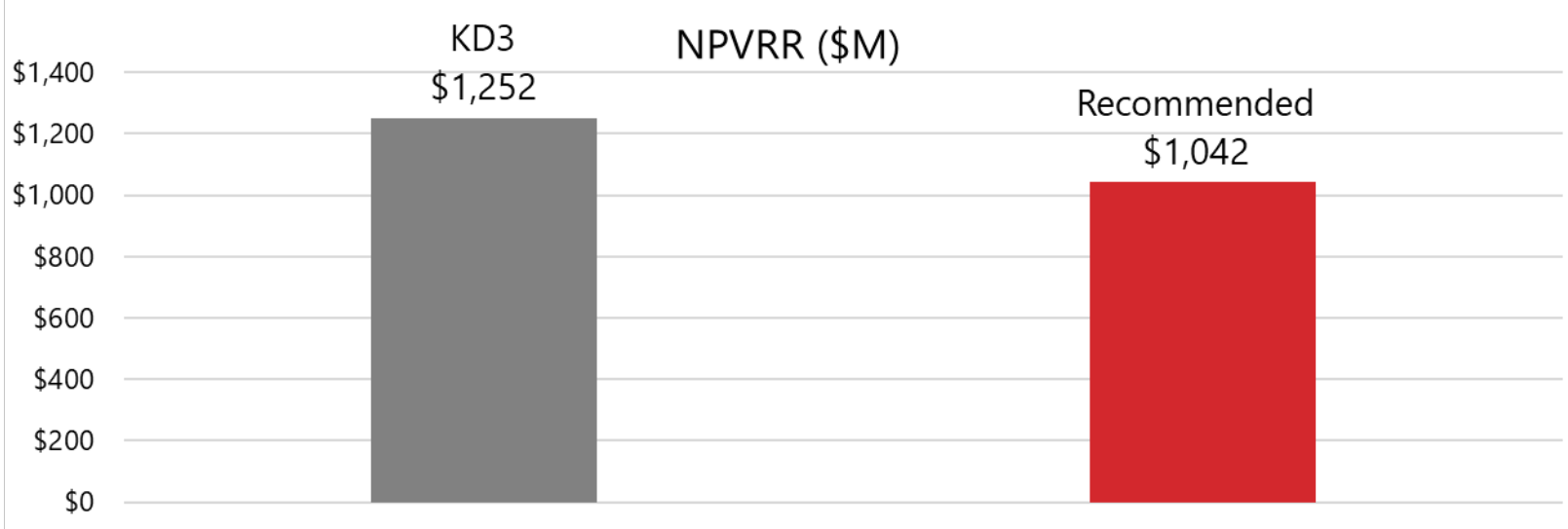
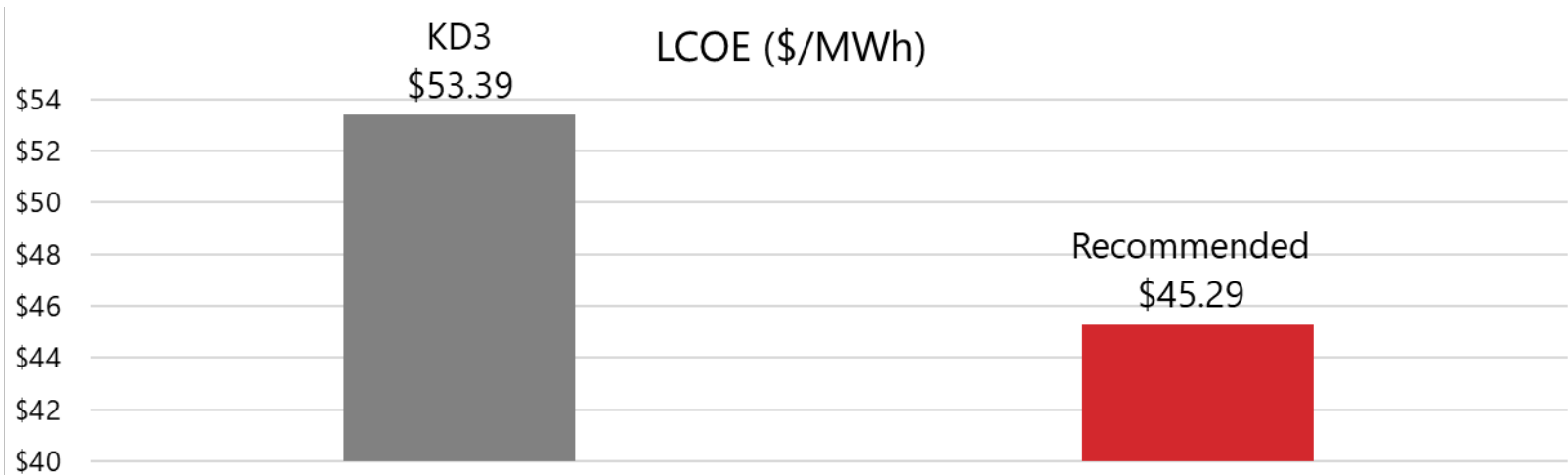
Dallman 1 & 2

- Retire Dallman 1 & 2
 - Every scenario retired these units
 - \$22 million capital expense avoided

Dallman 3

- Retire Dallman 3
 - Every eligible scenario retired
 - \$26 million capital expense avoided
 - \$210 million NPV cost increase to retain Dallman 3
 - Expected to increase cost \$10 M / year over next few years
 - 2020 retirement may be unreasonable

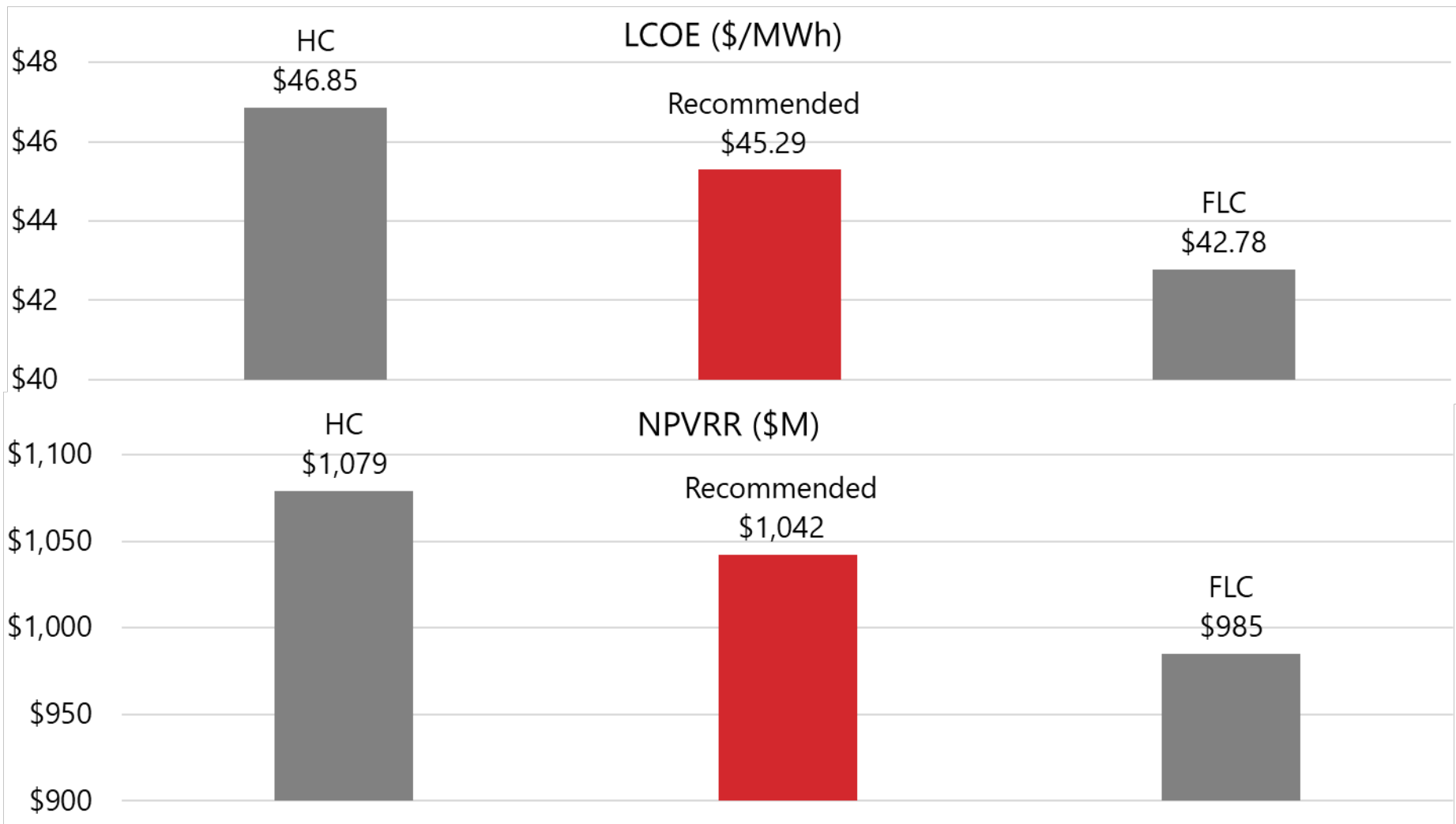
Dallman 3 Retention Cost



Dallman 4

- Recommend retaining and reassessing in next IRP
- Must be replaced due to transmission constraints
 - Gas unit replacement cost \$120 million
- Marginal on retirement
 - Replacing increases risk
- High coal cost scenario makes Dallman 4 less economic

Dallman 4 Coal Price



Renewables RFP

- Recommend issuing a renewables RFP ASAP
 - Tax Credits expiring
 - Can sign PPA beginning in future
- Results add PPA in 2023
- Significant cost declines in last decade

Market Purchases

- Consider market purchases
 - Replace Dallman 1, 2, & 3 at a reduced cost
 - Energy & capacity

- Long-term (5-10 years)

Energy Efficiency

- CWLP has successful energy efficiency programs
- Expand programs on as-economic basis
- Conduct more focused analysis
 - Demand-side management (DSM)
 - Energy Efficiency
 - Advanced Meter Infrastructure

Retain Peaking Assets

- Cheap capacity
- Reliability benefits

Illinois FEJA

- Build 2 MW Illinois Future Energy Jobs Act (FEJA)-applicable solar

- CWLP may not qualify

Additional Risks

- Electric Vehicles
- New Technologies
- Environmental Regulations
- Changes near CWLP
 - Generation & Transmission
- Market Prices
- Fuel Prices

Disclaimer

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More next pgs.



NEXT STEPS

CWLP'S INTEGRATED RESOURCE PLAN

NEXT STEPS

- Develop Action Plan
 - Review Public Comments
 - Begin planning steps with MISO
- Initiate RFP for Purchase Power Agreements (PPAs)
- Retain Dallman 3 longer than Dallman 1 and 2
- Develop a plan for employees

Public Discussion of IRP Results

- May 20th Open House
 - Lincoln Library 5:00-7:00 pm
- Public Comment Period May 7 to June 3
 - Name & Address requested (IRP@cwlp.com or U.S. Mail)
- Next Public Utilities Committee Meeting
 - Updates & Summary of Public Comments
- TEA's full report and all presentation documents and videos to date
www.cwlp.com/IRP

Public Communication

Website

www.cwlp.com/IRP

Email

IRP@CWLP.com

US Mail

CWLP General Office, 4th floor, Attention IRP,
800 East Monroe Street, Springfield, IL 62757

Open House

Lincoln Library
May 20th, 5-7pm

Questions