



AGENDA
CITY OF LAKE WORTH BEACH
ELECTRIC UTILITY ADVISORY BOARD MEETING
BY TELECONFERENCE – [ZOOM LINK BELOW](#)
THURSDAY, AUGUST 04, 2022 - 6:00 PM

ROLL CALL:

PLEDGE OF ALLEGIANCE:

AGENDA - Additions/Deletions/Reordering:

PRESENTATIONS:

New Board Member

Horizons Energy – Integrated Resource Plan

PUBLIC PARTICIPATION OF NON-AGENDAED ITEMS:

APPROVAL OF MINUTES:

EUAB Minutes 12.15.21

UNFINISHED BUSINESS:

NEW BUSINESS:

BOARD COMMENTS:

BOARD LIAISON REPORTS AND COMMENTS:

ADJOURNMENT:

If a person decides to appeal any decision made by the board, agency or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. (F.S. 286.0105)

Link below to join the webinar & for public participation:

<https://us06web.zoom.us/j/85455934015?pwd=cnFaemJpYmxYaJYck9acE9jZkw5Zz09>

Webinar ID: 854 5593 4015

Passcode: 334813

One tap mobile : US: +13126266799, 85455934015# or +16469313860, 85455934015#

Telephone: US: +1 312 626 6799 or +1 646 931 3860 or +1 929 436 2866 or +1 301 715 8592

International numbers available: <https://us06web.zoom.us/j/85455934015?pwd=cnFaemJpYmxYaJYck9acE9jZkw5Zz09>

**MINUTES
CITY OF LAKE WORTH BEACH
ELECTRIC UTILITY ADVISORY WORKSHOP
VIA TELECONFERENCE - YOUTUBE
WEDNESDAY, DECEMBER 15, 2021 - 6:00 PM**

ROLL CALL:

Present members: Ryan Oblander, Ramsay Stevens, David Simms.
Edward Liberty, Board Liaison was not in attendance.
Absent members: Ibrahim Chalhoub, Matthew Portilla.

PLEDGE OF ALLEGIANCE: led by Board Member Ramsay Stevens.

AGENDA - Additions/Deletions/Reordering:

No additions, deletions or reordering on the agenda.

PRESENTATIONS: (there is no public comment on Presentation items)

There were no presentations on the agenda.

PUBLIC PARTICIPATION:

There was no public participation.

APPROVAL OF MINUTES:

EUAB Minutes 12.01.21 – No Quorum but voting was as follows:

Action: The motion was made by Ramsay Stevens to approve minutes in the agenda second by David Simms.

Vote: Unanimous

UNFINISHED BUSINESS:

A. Development of Recommendations for Electric Utility Conservation Program.

During the October 26th, 2021 Commission meeting, the Commission voted the development of an energy conservation and energy efficiency program.

Resolution 76-2021 directs the Electric Utility Advisory Board to work expeditiously to develop a comprehensive approach to energy efficiency based on industry-wide best practices.

Ramsay Stevens opened the discussion stating that some of the board's recommended items will require City's legal assistance.

Mr. Oblander also spoke to the Community Sustainability Department's Director, William Waters, about the legalities, licensing and code requirements for the program.

Board recommends a Request for Information (RFI) or Request for Quotes (RFQ) should be issued for a third-party company to provide a comprehensive energy efficient and renewable energy program that will assist customer not only with financing options but also grants and rebates.

Board recommends the City engages a grants writer with an environmental background to apply for grants in the area of sustainability. An example is shade trees around the City to help mitigate the heat island effects and promote the City's conservation efforts.

Board recommends the City works with the CRA to help reduce carbon foot print.

Lengthy discussion ensued.

NEW BUSINESS:

There was no unfinished business in the agenda.

BOARD COMMENTS:

No Board member comments.

BOARD LIAISON REPORTS AND COMMENTS:

No Board Liaison comments.

ADJOURNMENT:

The meeting was adjourned at 7:48 pm.



INTEGRATED RESOURCE PLAN

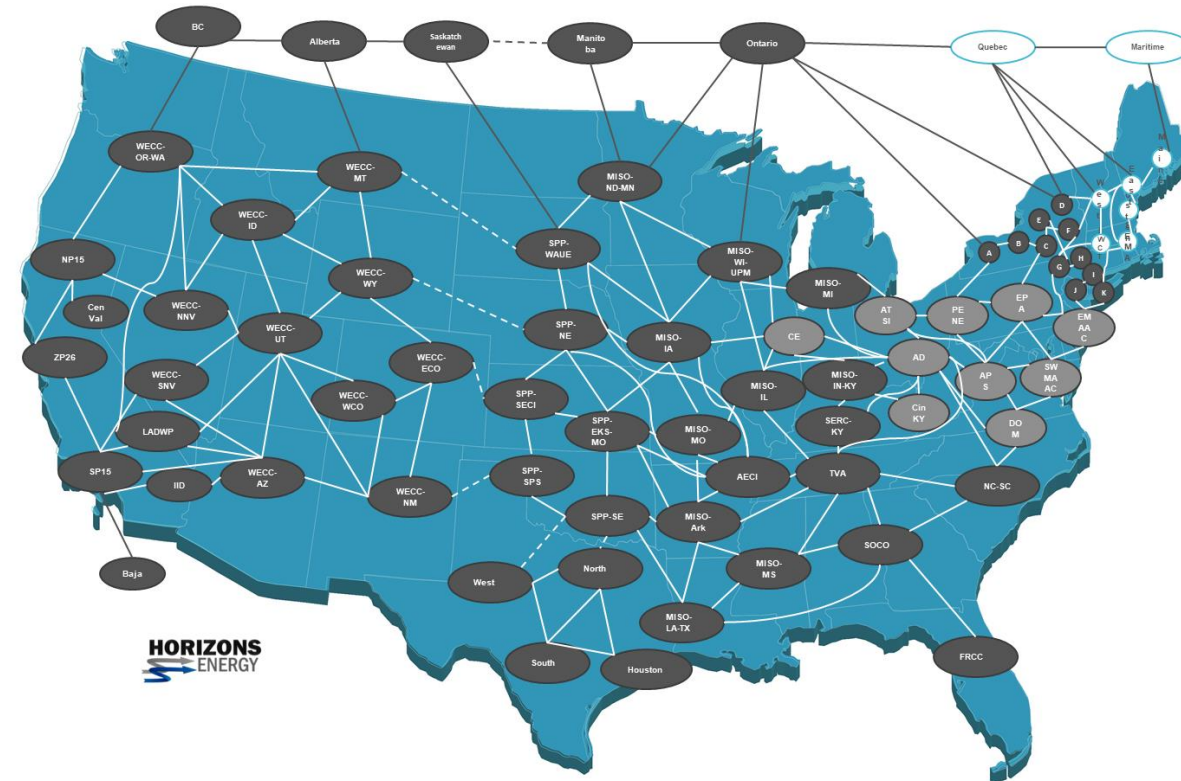
Lake Worth Beach Electric Utilities (LWBEU)

Presented By:
Horizons Energy
June 28, 2022

AGENDA

- Introduction
- Horizons Energy
- Integrated Resource Planning Process
- Lake Worth Beach 2022 IRP
- Conclusion and Question/Answer

- Established in 2016
- Credentials:
 - Average 25 years of experience in power market analytics
 - Contributed to over 25 integrated resource plans
 - Over 30 national clients (developers, banks, utilities)
- Services:
 - EnCompass National Database
 - North American Advisory Outlook
 - Consulting
- Utilizes the EnCompass Power Planning model from Anchor Power Solutions





Greg Turk
Principal/Project Manager

- 30+ years of power planning methods, consulting, product and project management



Kathy Jones
Executive Consultant

- 30+ years of analytic data development, resource screening, scenario creation, and study simulations

Relevant Engagements Last 2 Years:

- ✓ 2022 AES Indiana IRP
- ✓ 2021 NMPP IRP
- ✓ 2021 PNM IRP
- ✓ 2021 AECC Uncertainty Analysis
- ✓ 2020 PNM San Juan Replacement
- ✓ 2020 PCWA Hydro Stochastic Analysis
- ✓ 2020 KYMEA IRP

Relevant Experience:

- ✓ Southeast U.S. Lead 2006-2017
- ✓ Renewables Lead 2013-2017
- ✓ 25 years IRP experience
- ✓ Performed \$ billions in asset valuation
- ✓ Horizons advisory and market assessments
- ✓ Environmental compliance planning
- ✓ Uncertainty and risk assessment

WHAT WE DO

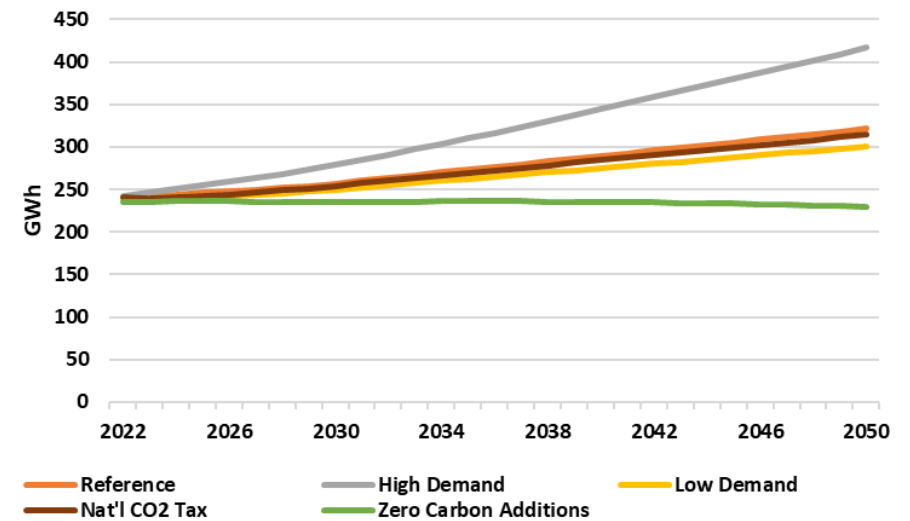
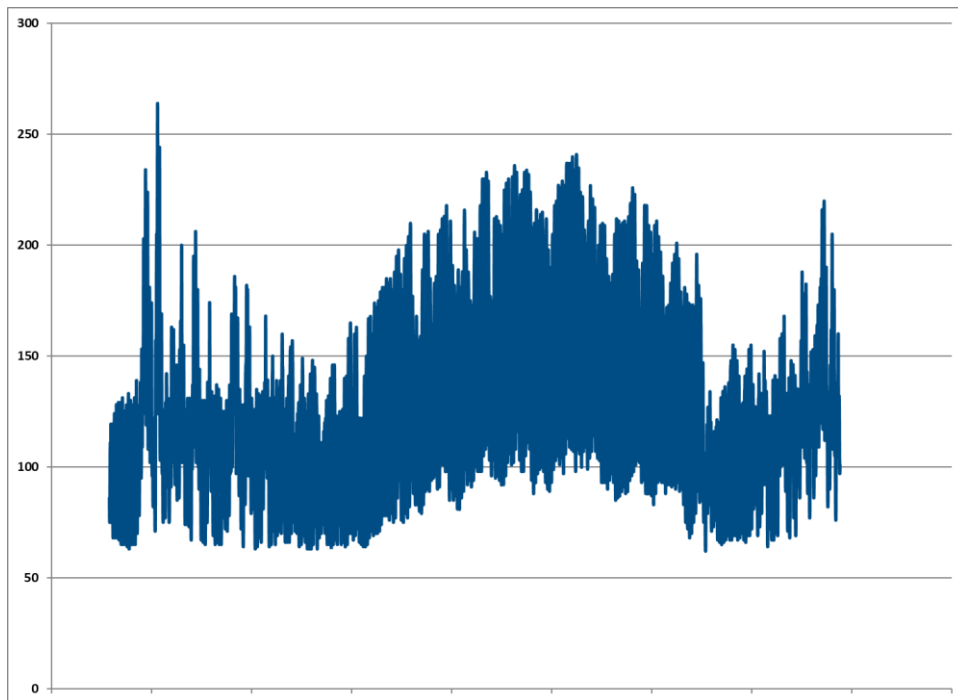
- EnCompass National Database
- North American Advisory Outlook
 - Fundamental forecast of energy markets
 - Nine scenarios
 - Interactive dashboard of results
- Custom Scenarios
- Consulting

INTEGRATED RESOURCE PLANNING

- Integrated Resource Planning or IRP is the process by which supply- and demand-side options are consistently planned, implemented, and evaluated to provide energy services at a cost that appropriately balances the interests of stakeholders
- Develop plan for LWBEU to reach its goals of low-cost, reliable and low carbon service
- Horizons Energy uses the EnCompass power planning model by Anchor Power Solutions which performs a mixed integer linear programming algorithm which:
 - Develops an outlook for supply- and demand-side options that minimize cost as well as reach carbon emission targets and maintain reliability

DEMAND FORECAST

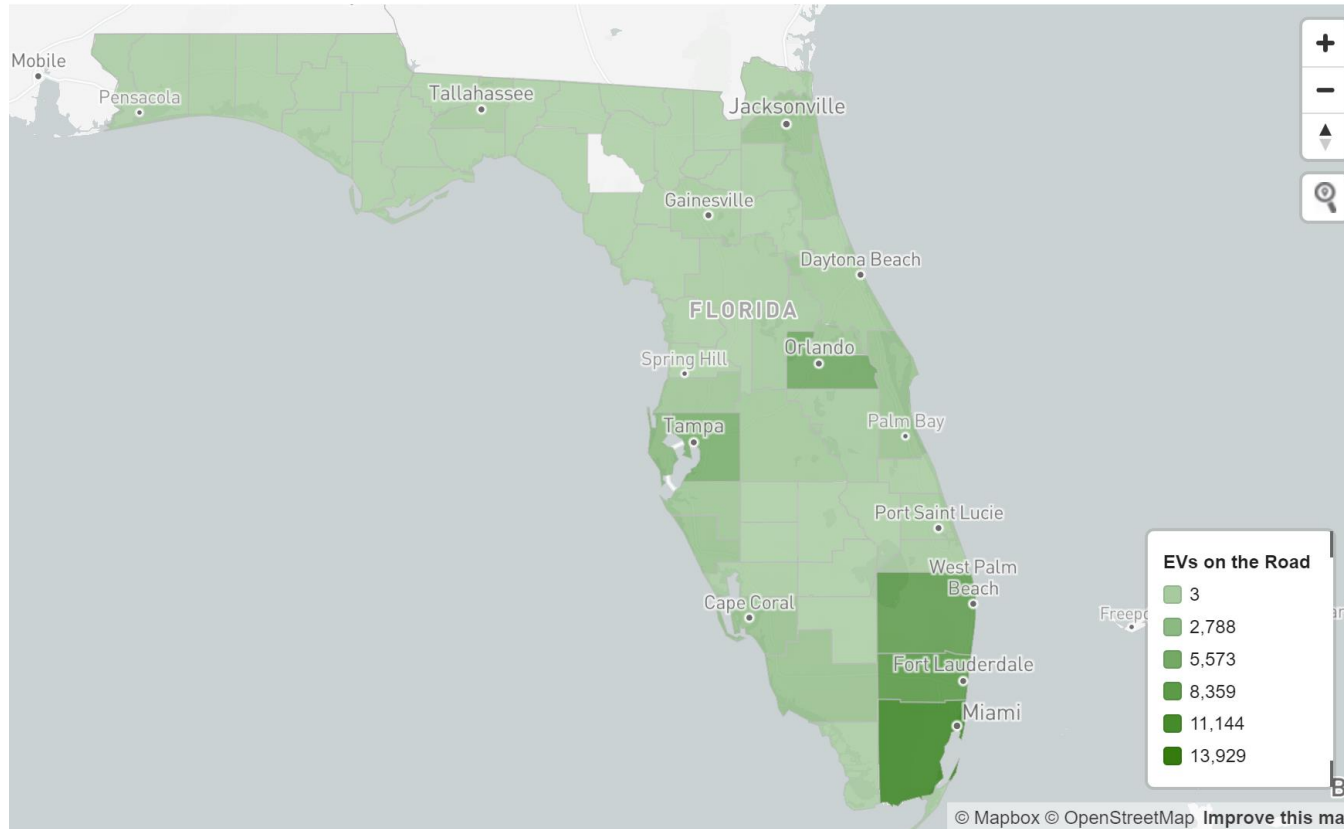
- Represent electricity customer demand
 - Hourly
 - Monthly
 - Annually



ELECTRIC VEHICLE OUTLOOK



EVs on the Road by County and ZIP Code



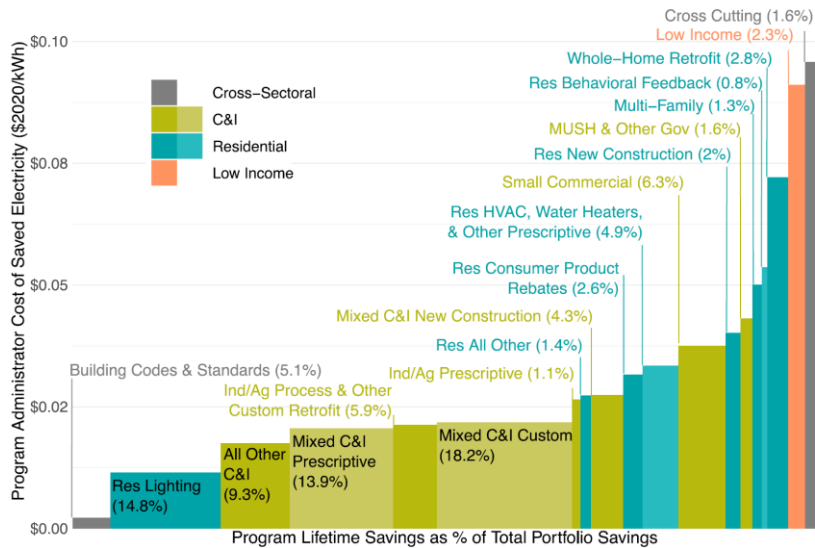
Key Statistics

- 90,184
EVs on the Road
- 68,185
BEVs on the Road
- 21,980
PHEVs on the Road
- 3.26
BEVs per 1k People
- 1.05
PHEVs per 1k People
- 47.55
BEVs per DCFC Port
- 16.65
EVs per Level 2 Port
- 35
Vehicle Makes
- 86
Vehicle Models

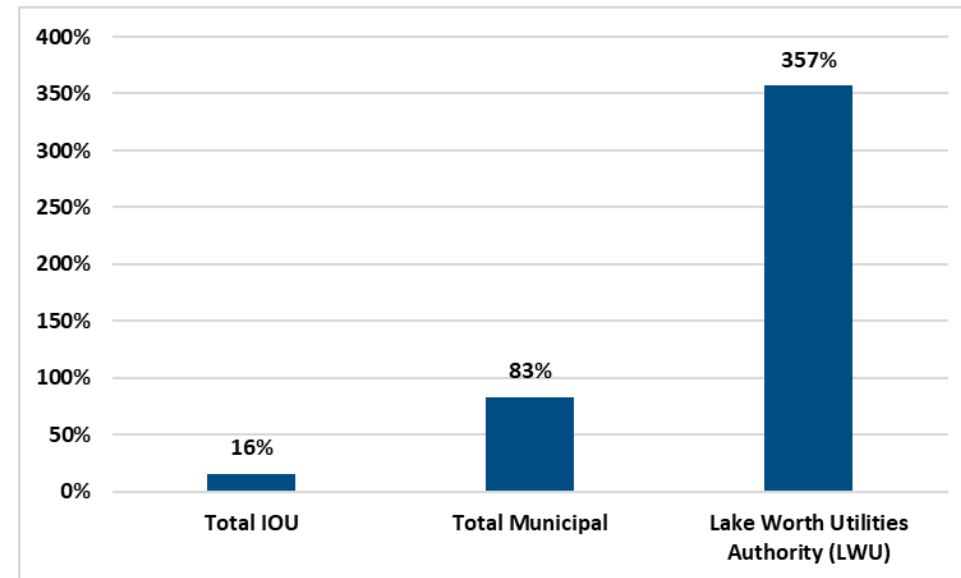
RESOURCES: DEMAND SIDE OPTIONS

- Demand response
- Energy efficiency
- Behind the meter

Composite Cost Curve for Energy Savings From Electric Efficiency Programs: 2010-2018



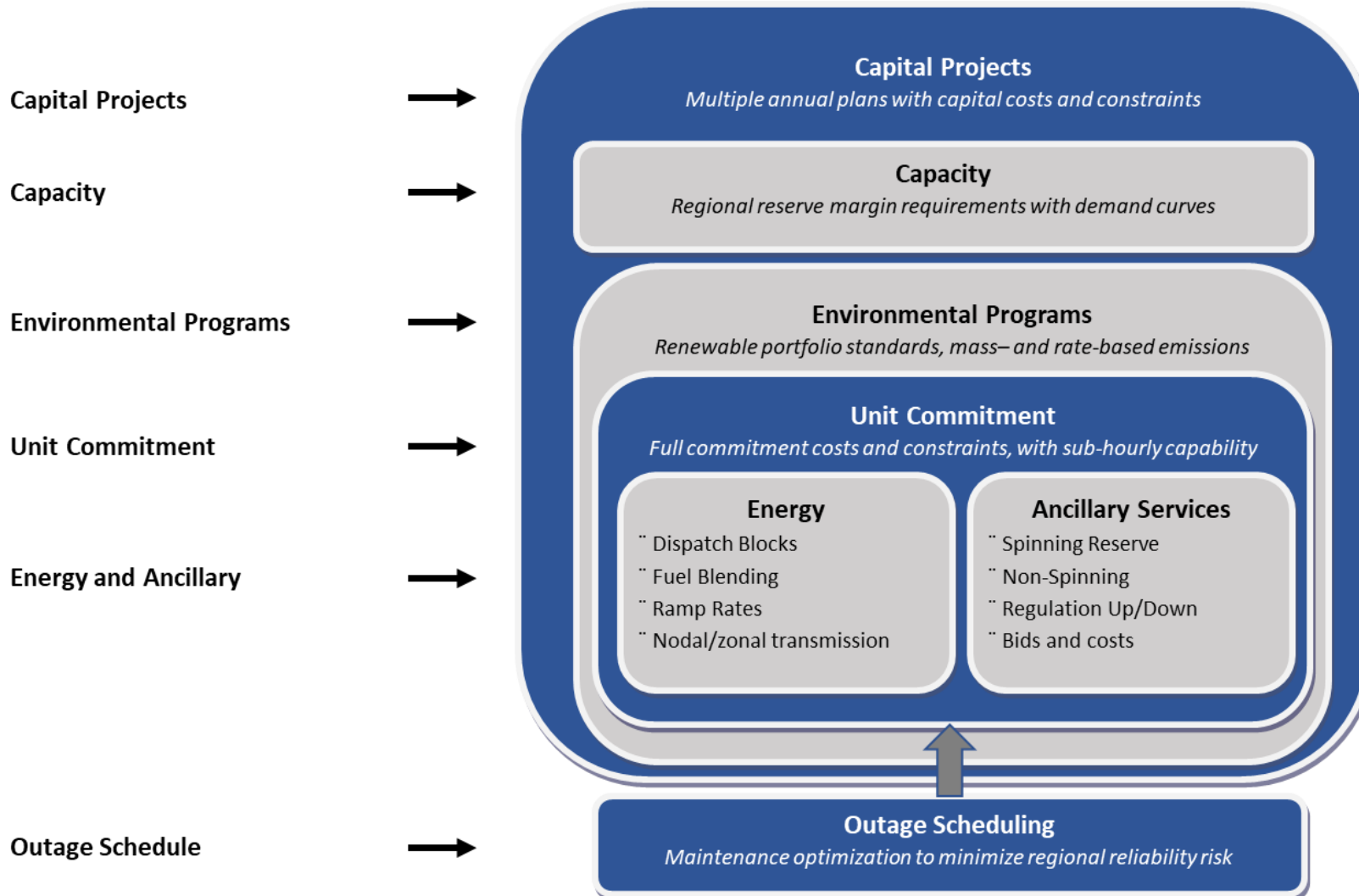
Percent change in BTM Generation since 2017



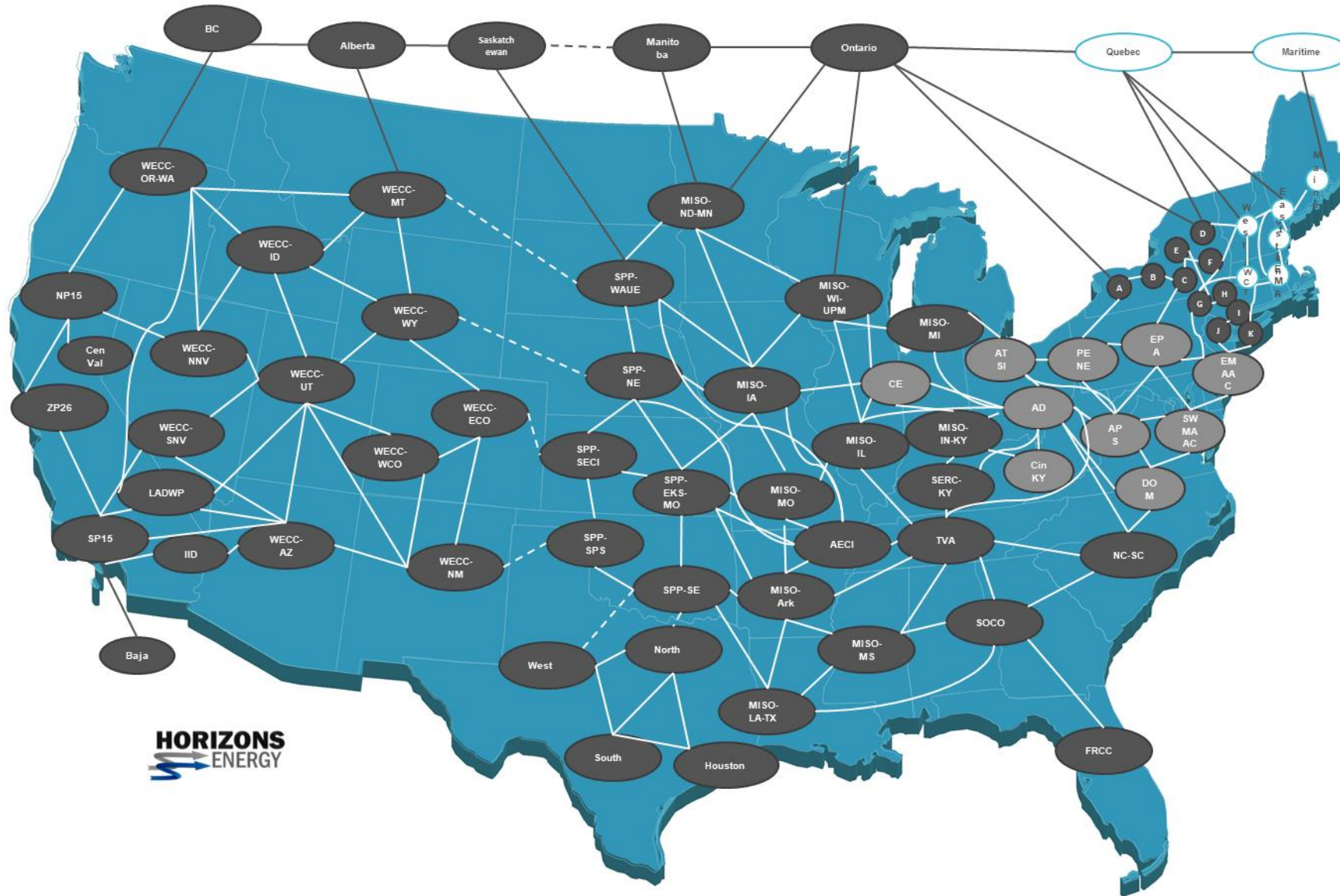
RESOURCES: SUPPLY SIDE OPTIONS

- Existing generation and contracts
 - Tom G. Smith
 - Stanton
 - St. Lucie
 - Solar
- New options
 - Solar
 - Batteries
 - Combustion turbines
 - Purchase power agreements (PPA)

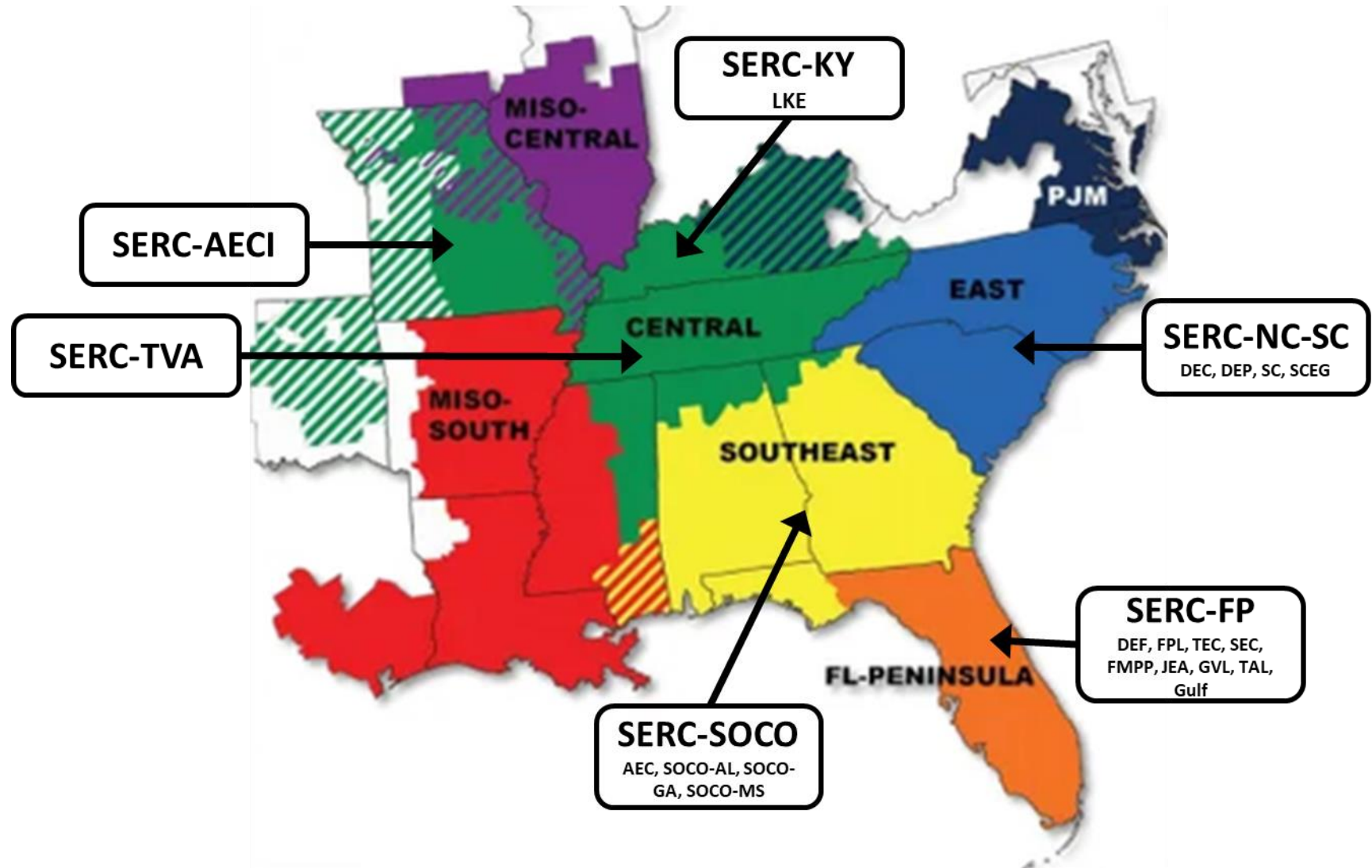
ENCOMPASS POWER PLANNING MODEL



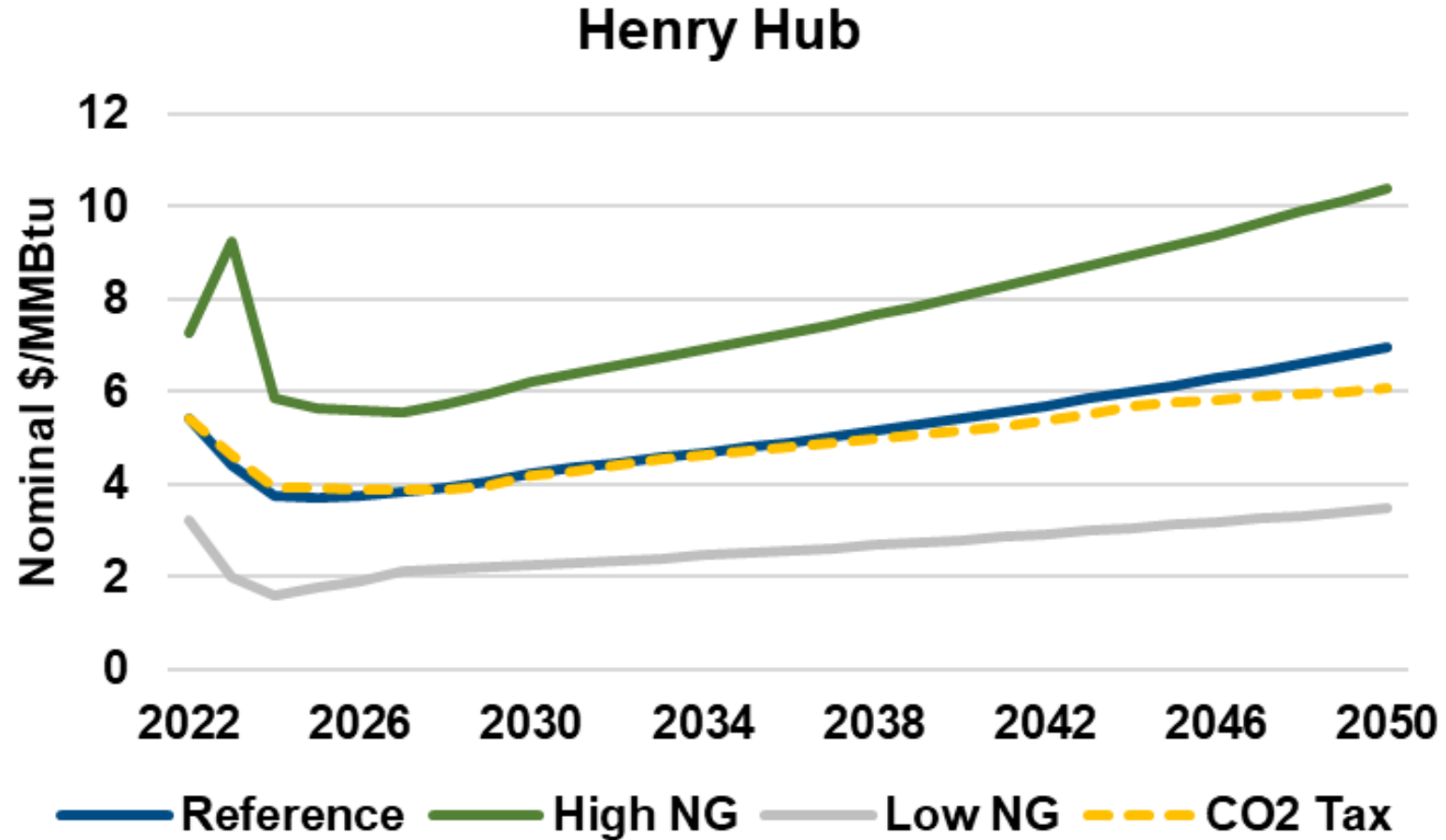
MARKET AREAS



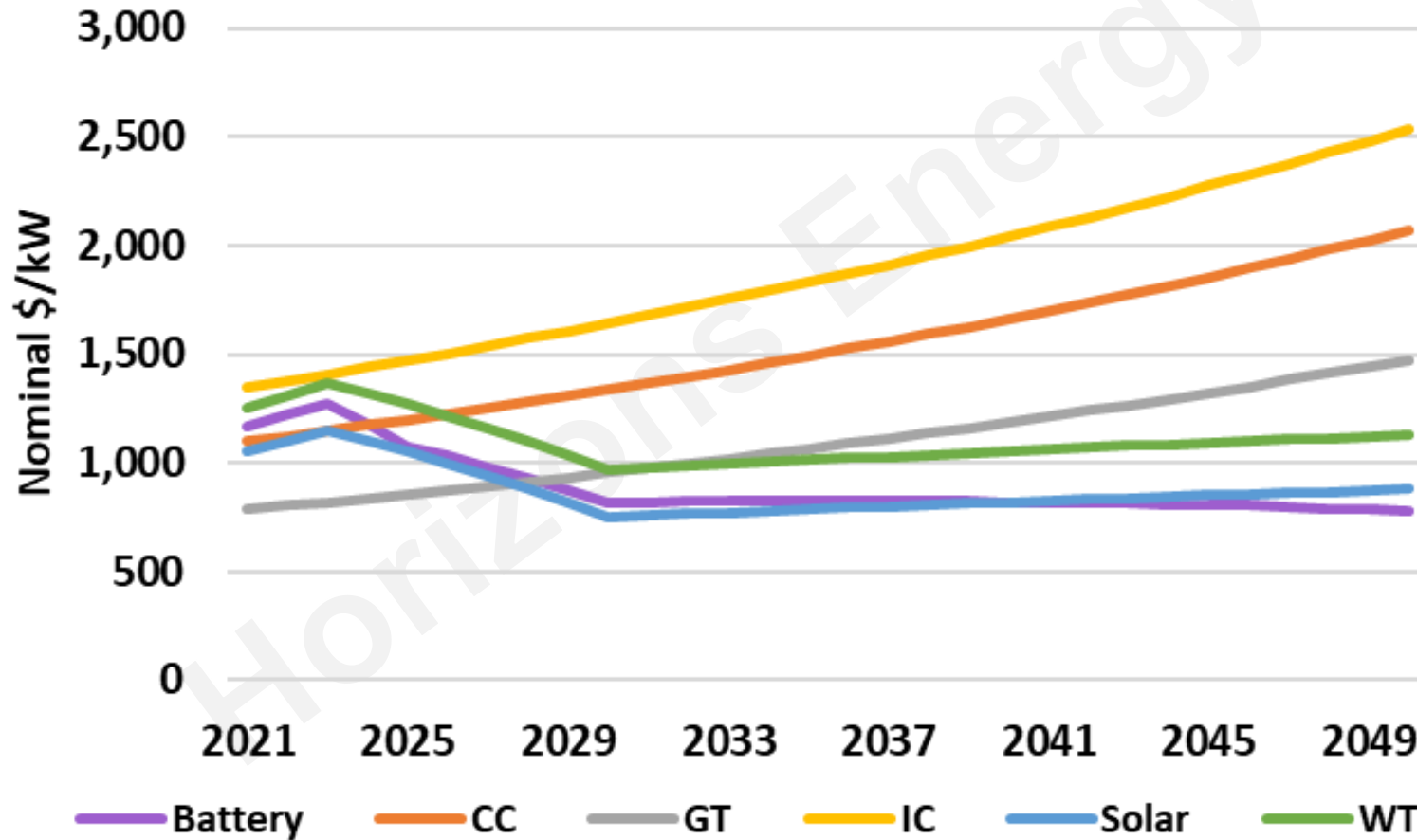
SERC/FLORIDA



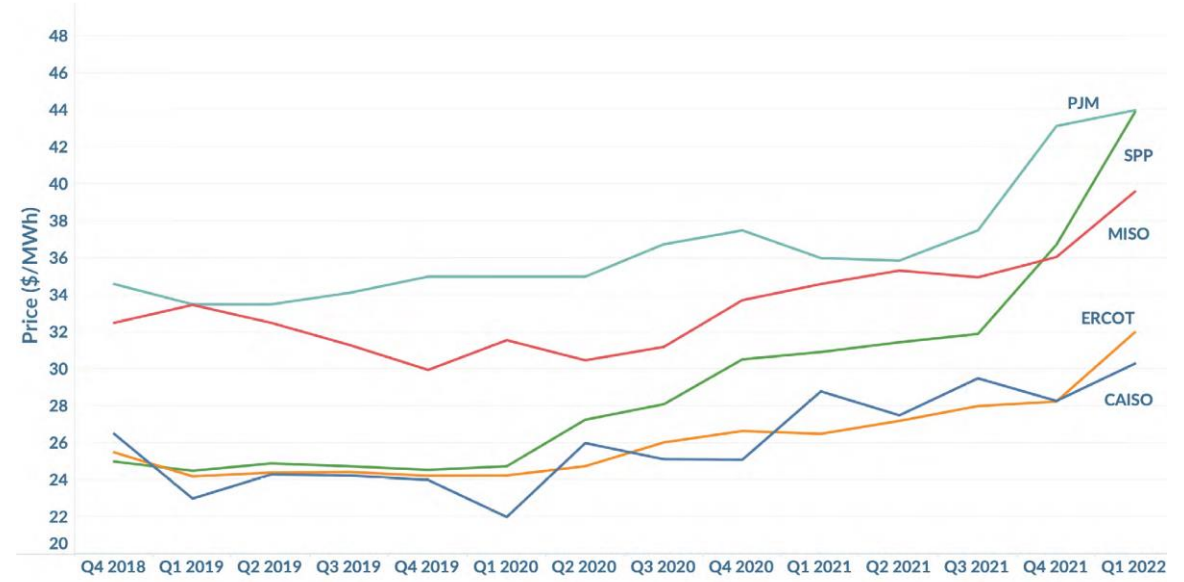
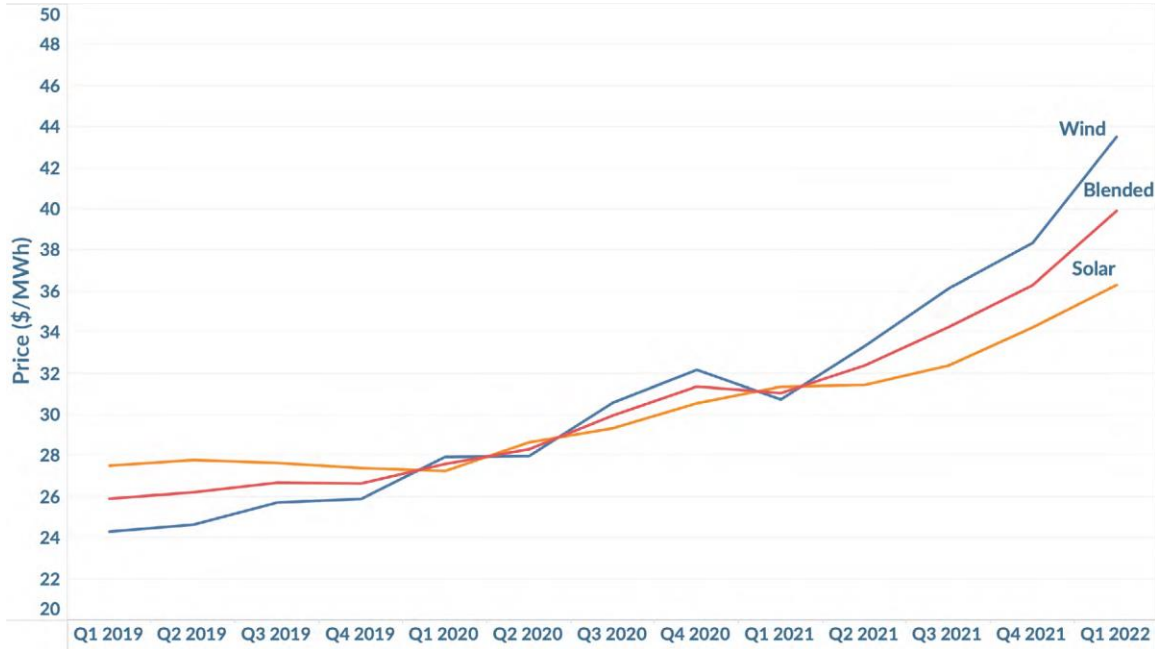
NATURAL GAS PRICES



OVERNIGHT CAPITAL COST



PPA PRICES



Source: LEVELTEN ENERGY Q1 2022 PPA PRICE INDEX NA

HORIZONS SCENARIOS

- Base
- High Natural Gas
- Low Natural Gas
- High Demand
- Low Demand
- Carbon Limit with High Natural Gas
- Carbon Limit with Low Natural Gas
- National Carbon Tax
- Zero Carbon Additions Only (equivalent of Cheap Renewables)

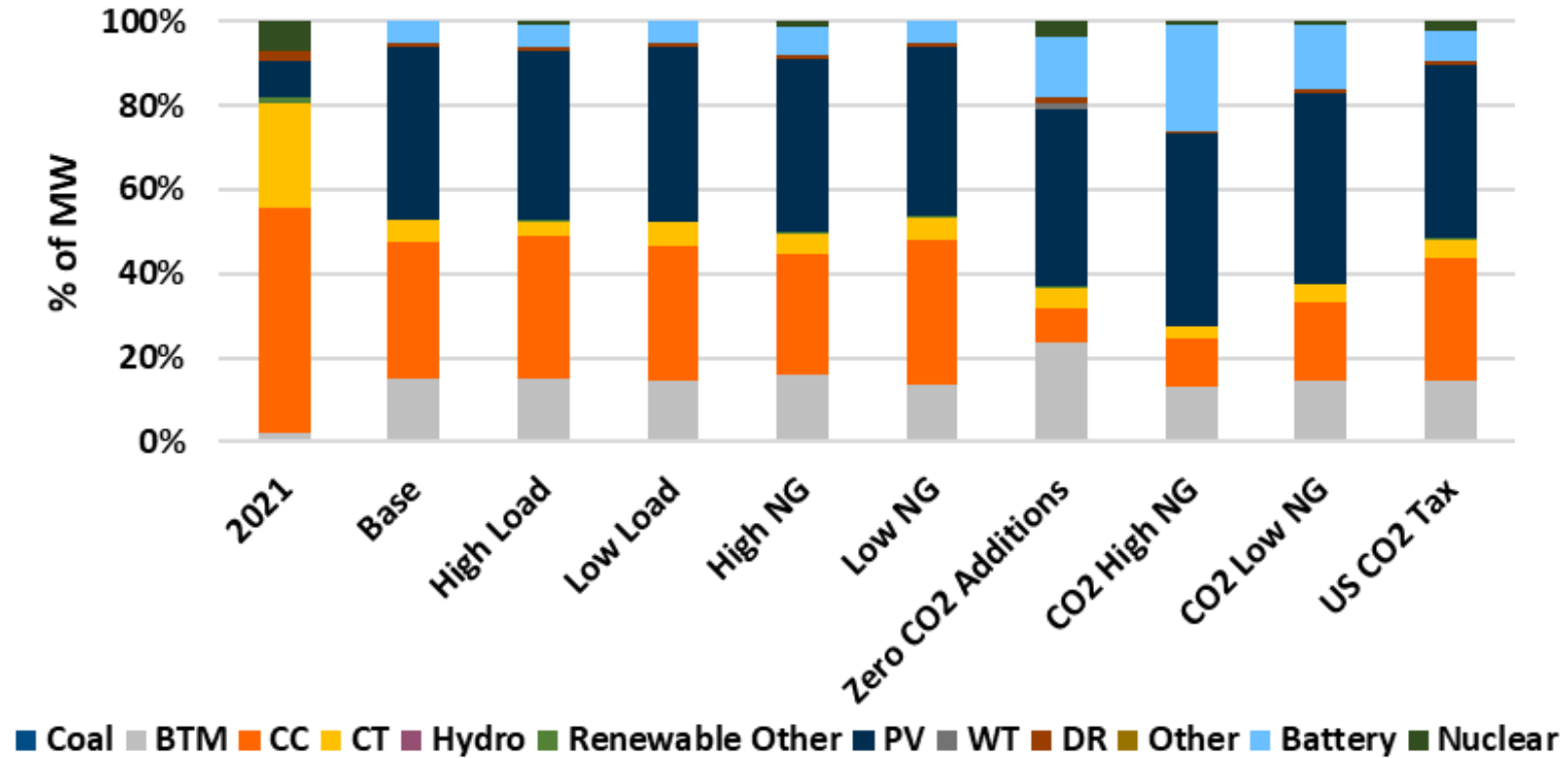
SCENARIO MATRIX



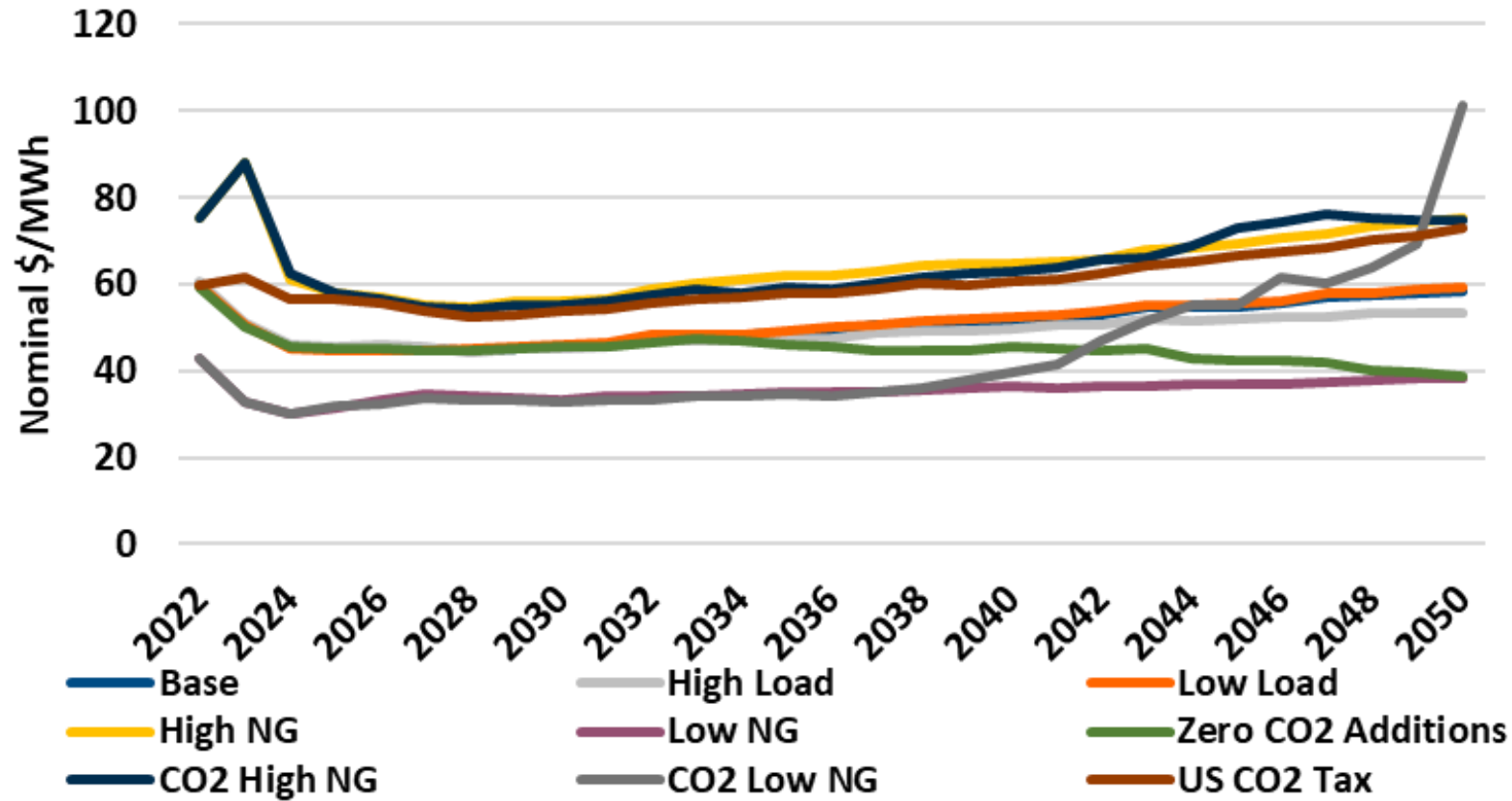
		Scenarios									
		Reference	High NG	Low NG	High Demand	Low Demand	Nat'l CO2 Tax	CO2 Limit High NG	CO2 Limit Low NG	Zero Carbon Additions	
Market Drivers	Load	→	→	→	↑	↘	→	→	→	↓	
	Natural Gas Price	→	↑	↓	→	→	→	↑	↓	→	
	Coal Price	→	↑	↘	→	→	↑	↑	↘	→	
	Technologies										
	Nuclear Economic Retirements	Staggered beg. 2024					None				
	Nuclear License	60 Years					80 Years	60 Years		80 Years	
	Coal Economic Retirements	Staggered beg. 2024					All eligible beg. 2024			Unlimited	
	Natural Gas Additions	CA, DE, MD, NM, OR, VA Limited						Limited after 2030		Limited	
	Natural Gas Retirements	Staggered beg. 2024					All eligible beg. 2023	All eligible beg. 2024		Unlimited	
	Hydro	Existing									
	Geothermal	Existing									
	Other Renewables	Existing									
	Carbon	60% reduction from 2019 no carbon price except State/Province						Tax	Limit	Limit	State/Province
Builds	% of Generation Additions										
	Solar	45.4% →	45% →	44% ↓	40% ↑	48% ↗	46% ↑	48% ↑	47% ↑	48% ↑	
	Wind	23.2% ↗	25% ↓	22% ↘	23% ↓	23% ↗	25% ↗	24% ↑	26% ↑	26% ↑	
	GT	3.8% →	4% ↗	4% ↑	7% →	3% ↗	5% ↓	0% ↘	2% ↓	0% ↓	
	CC	13.1% →	9% ↑	18% ↑	15% ↗	12% →	8% ↓	2% ↘	4% ↓	0% ↓	
	IC	1.3% →	1% ↗	1% ↑	2% →	1% →	1% ↓	0% ↓	0% ↓	0% ↓	
	Storage	13.2% ↘	16% ↓	11% ↓	13% ↓	13% ↘	16% ↑	25% ↗	21% ↑	25% ↑	
	Distributed Generation	→	↗	↓	↑	↓	↗	↗	↗	↑	
Transmission Additions	Known/under construction additions									Economic	

Medium
 Higher
 Really High
 Low
 Really Low

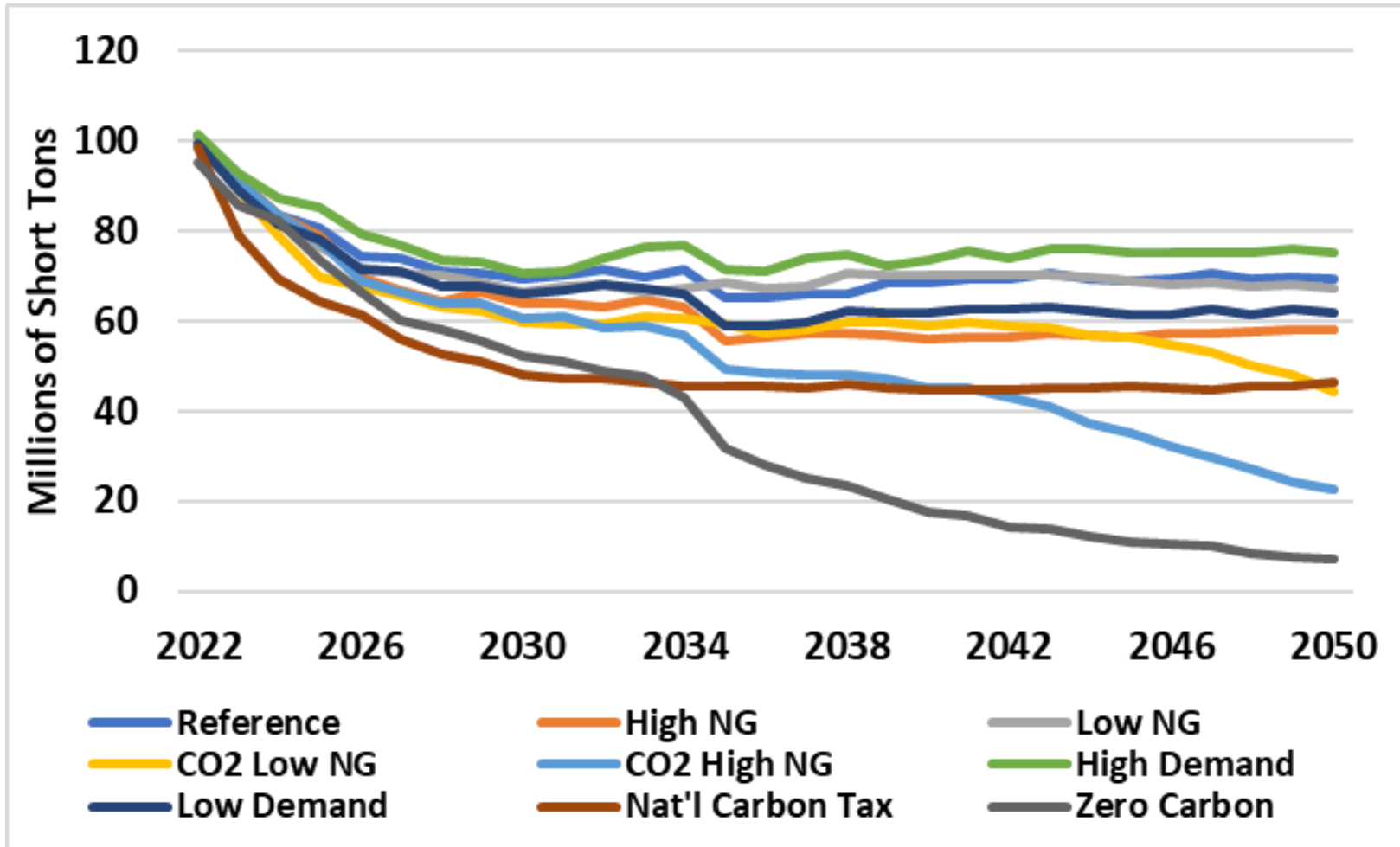
HORIZONS FLORIDA RESOURCE MIX - 2050



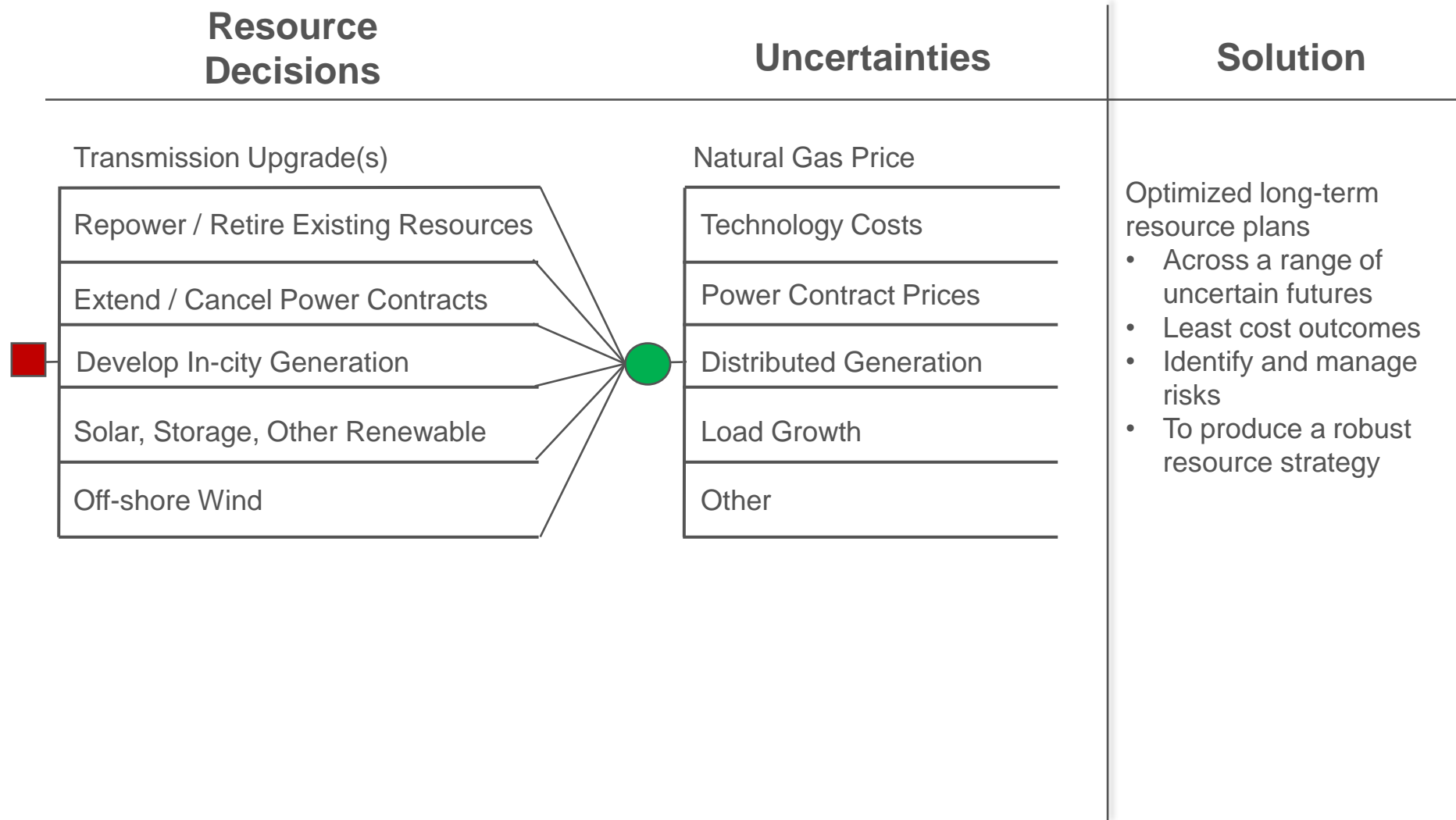
FLORIDA ENERGY PRICES



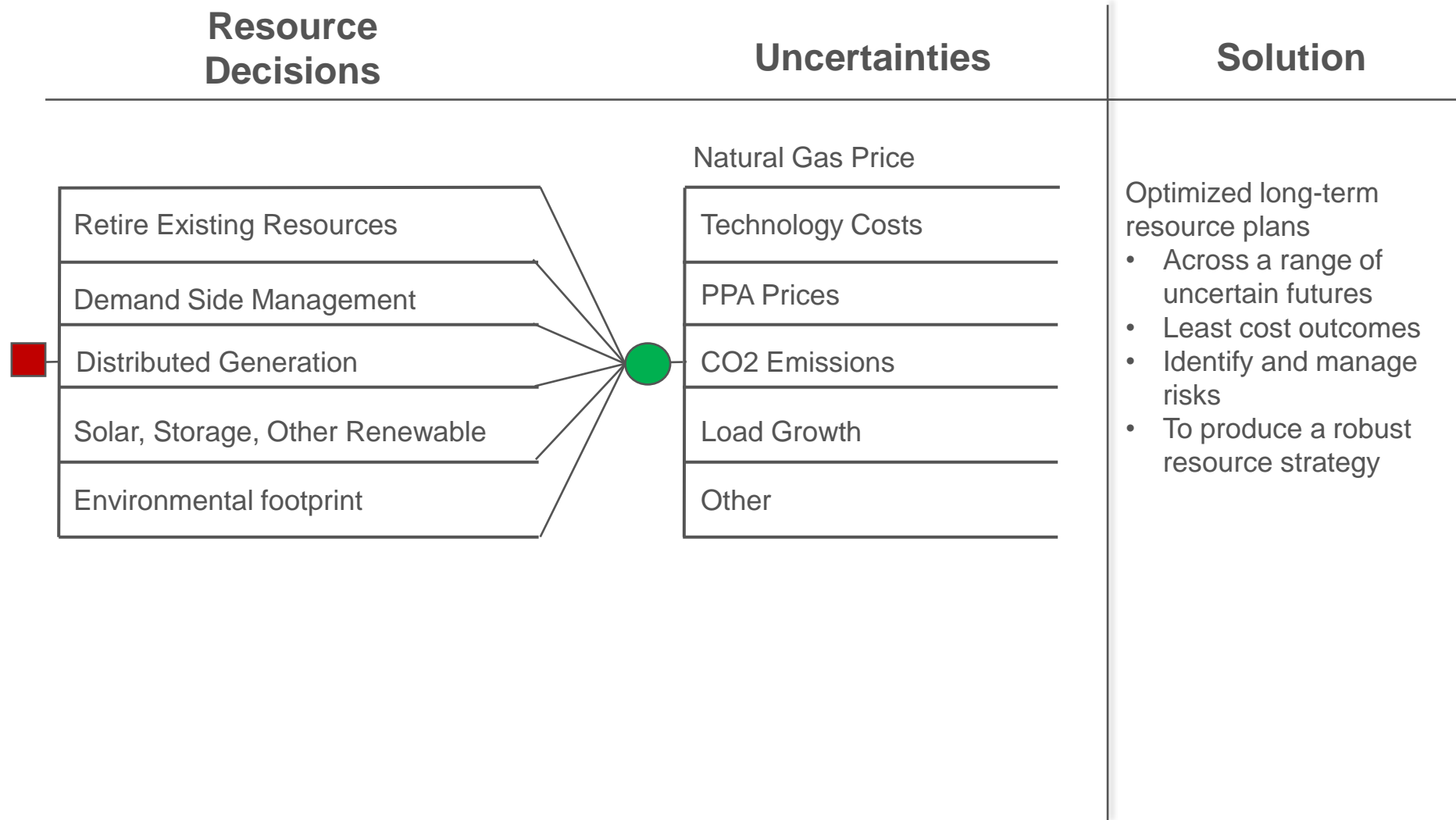
FLORIDA CARBON EMISSIONS



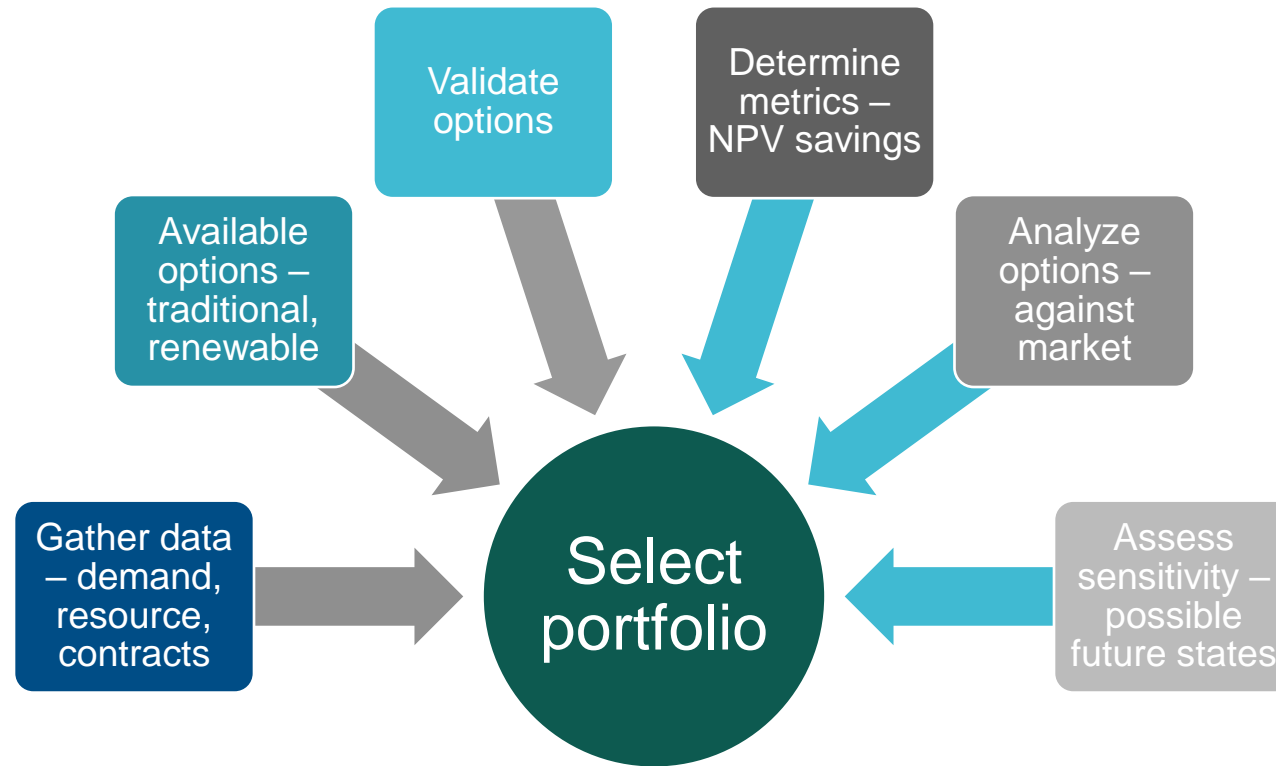
2018 PLANNING EFFORT



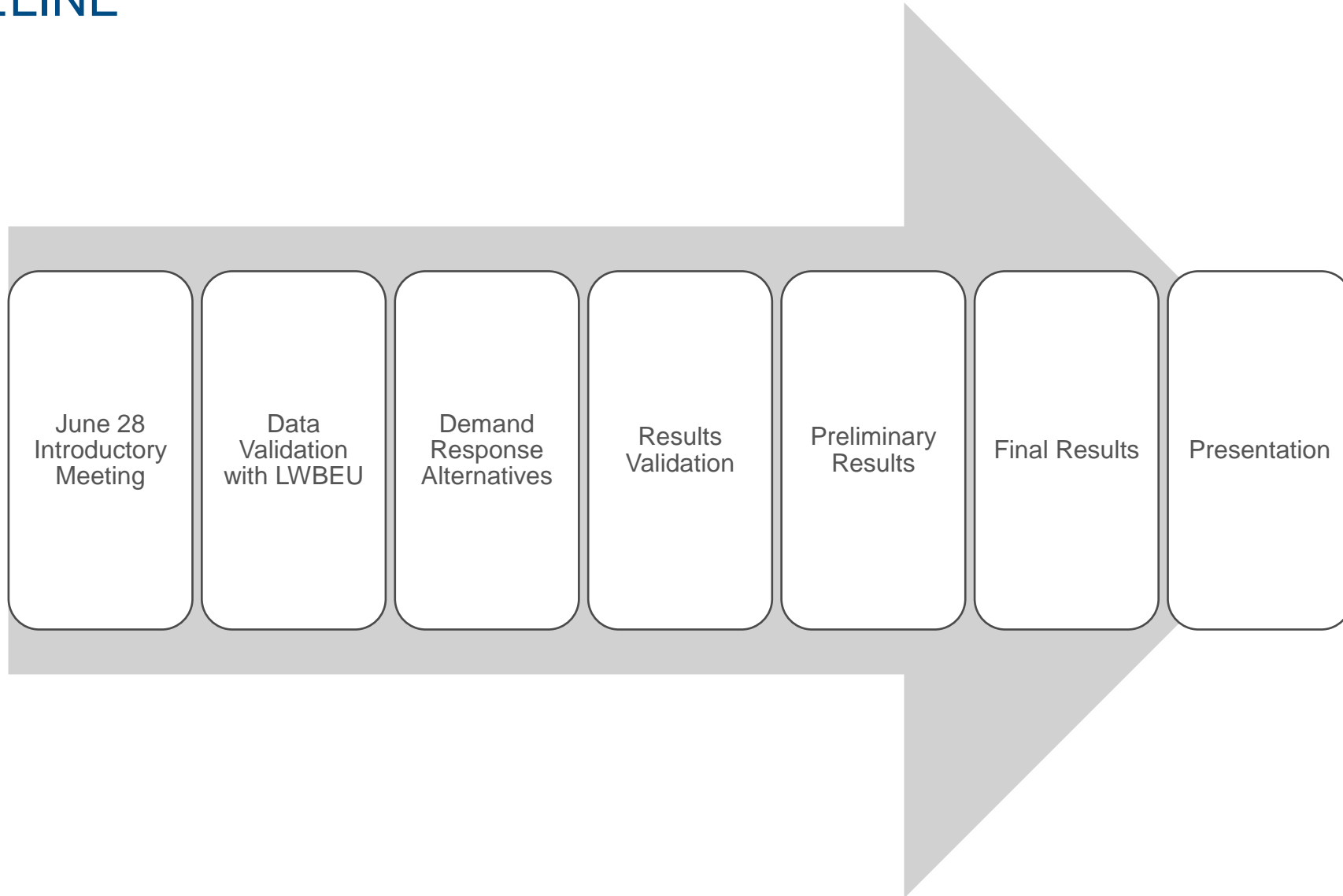
2022 PLANNING EFFORT



PROCESS



TIMELINE



A blurred background image of a wind farm at sunset. The sun is low on the horizon, creating a warm orange and yellow glow. Several wind turbines are visible, with the largest one in the foreground on the right side. The sky is filled with soft, white clouds.

QUESTIONS?