# Implementing All-Source Procurement in the Carolinas

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For SACE, Sierra Club & NRDC

NCUC Technical Conference

Docket No. #-100, Sub 165

September 30, 2021

# Why All-Source Procurement?

All-Source Procurement is more likely to result in the **least-cost mix** of demand- and supply-side resources than traditional single-source procurement because it harnesses market dynamics more effectively.

- Obtain price and performance information about generation alternatives directly from the marketplace.
- Identify unanticipated opportunities to meet electricity supply challenges more efficiently with a blend of technologies.

**Definition:** Whenever a utility (and its regulators) believe it is time to procure new resources, it uses:

- Unified resource acquisition process
- Requirements for resources that are technology-neutral

# All-Source Procurement Reports

**Making the Most of the Power Plant Market**
SACE and Energy Innovation
April 2020


ENERGY INNOVATION cleanenergy.org

MAKING THE MOST OF THE POWER PLANT MARKET:
BEST PRACTICES FOR ALL-SOURCE ELECTRIC GENERATION PROCUREMENT

BY JOHN D. WILSON,[1] MIKE O'BOYLE,[2] RON LEHR,[3] AND MARK DETSKY[4] ● APRIL 2020

It is a golden age for power plant procurement. Utilities are paying less to acquire new power plants, whether they are powered by the sun, wind, water, fossil fuels, or operate as storage facilities. The global market to supply utilities with power plants is by any measure competitive.

And yet, market competition has surprised utility executives and generated heavy media attention with unexpectedly inexpensive and diversified responses to utility all-source procurements. A Colorado utility called the low solar and wind prices "shocking," but why are utility executives surprised by all-source procurement outcomes? More importantly, how can other utilities replicate these results?

**All-source procurement** means that whenever a utility (and its regulators) believe it is time to acquire new generation resources, it conducts a unified resource acquisition process. In that process, the requirements for capacity or generation resources are neutral with respect to the full range of potential resources or combinations of resources available in the market. Most vertically integrated utilities either voluntarily, or are required by regulators, to conduct competitive procurement through requests for proposals (RFPs) as part of the process selecting adequate generation resources. In an RFP, the utility describes the resources it wishes to procure, and may also offer self-build options to compete against market offers.

About half of the United States' utility sector operates in organized regional wholesale markets. In most utilities that operate in two of these markets, the Midcontinent Independent System Operator (MISO) and Southwest Power Pool (SPP), and in the other half of the sector that does not participate in markets, vertically integrated utilities retain market power. State franchises for such utilities grant vertically integrated utilities rights and responsibilities, including exclusive service territory and an obligation to serve all customers. These utilities typically control the bulk

[1] Southern Alliance for Clean Energy http://cleanenergy.org/ and Resource Insight, Inc. http://resourceinsight.com/
[2] Energy Innovation https://energyinnovation.org/
[3] Energy Innovation https://energyinnovation.org/
[4] Dietze and Davis, P.C. http://dietzedavis.com/

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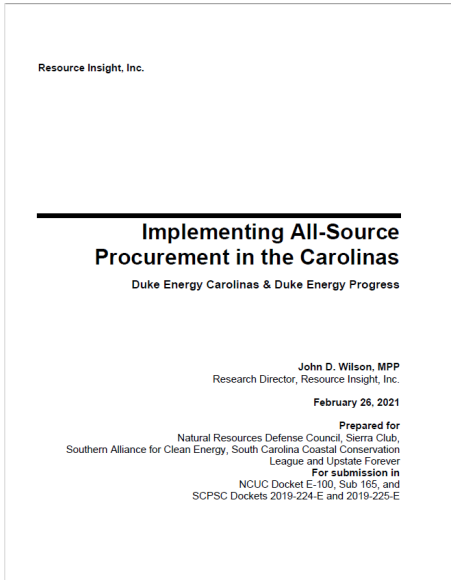
**Implementing All-Source Procurement in the Carolinas**
Resource Insight, Inc.
February 2021


Resource Insight, Inc.

Implementing All-Source Procurement in the Carolinas

Duke Energy Carolinas & Duke Energy Progress

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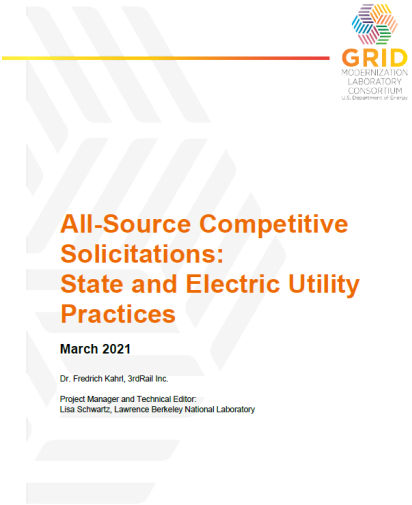
Natural Resources Defense Council, Sierra Club, Southern Alliance for Clean Energy, South Carolina Coastal Conservation League and Upstate Forever
For submission in
NCUC Docket E-100, Sub 165, and SCPSC Dockets 2019-224-E and 2019-225-E

**How to Build Clean Energy Portfolios**
RMI (with RAP)
February 2021


CEP

**All-Source Competitive Solicitations**
LBNL
March 2021

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# Cheaper & Cleaner Than Expected

**RFP Responses by Technology**

| Generation Technology | # of Bids | Bid MW | # of Projects | Project MW | Median Bid Price or Equivalent | Pricing Units |
|---|---|---|---|---|---|---|
| Combustion Turbine/IC Engines | 30 | 7,141 | 13 | 2,466 | $ 4.80 | $/kW-mo |
| Combustion Turbine with Battery Storage | 7 | 804 | 3 | 476 | 6.20 | $/kW-mo |
| Gas-Fired Combined Cycles | 2 | 451 | 2 | 451 | [redacted] | $/kW-mo |
| Stand-alone Battery Storage | 28 | 2,143 | 21 | 1,614 | 11.30 | $/kW-mo |
| Compressed Air Energy Storage | 1 | 317 | 1 | 317 | [redacted] | $/kW-mo |
| Wind | 96 | 42,278 | 42 | 17,380 | $ 18.10 | $/MWh |
| Wind and Solar | 5 | 2,612 | 4 | 2,162 | 19.90 | $/MWh |
| Wind with Battery Storage | 11 | 5,700 | 8 | 5,097 | 21.00 | $/MWh |
| Solar (PV) | 152 | 29,710 | 75 | 13,435 | 29.50 | $/MWh |
| Wind and Solar and Battery Storage | 7 | 4,048 | 7 | 4,048 | 30.60 | $/MWh |
| Solar (PV) with Battery Storage | 87 | 16,725 | 59 | 10,813 | 36.00 | $/MWh |
| IC Engine with Solar | 1 | 5 | 1 | 5 | [redacted] | $/MWh |
| Waste Heat | 2 | 21 | 1 | 11 | [redacted] | $/MWh |
| Biomass | 1 | 9 | 1 | 9 | [redacted] | $/MWh |
| Total | 430 | 111,963 | 238 | 58,283 | | |

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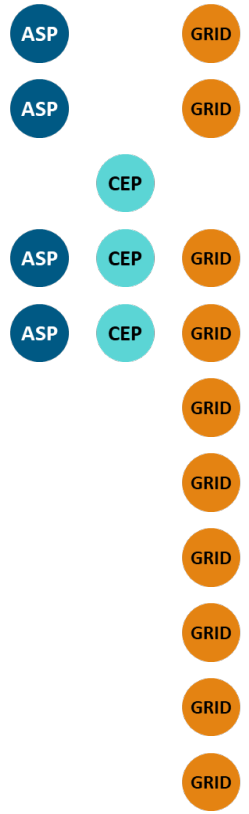
Source: Xcel Colorado, *2016 Electric Resource Plan: 2017 All Source Solicitation 30-Day Report*, COPUC Proceeding No. 16A-0396E (December 28, 2017).

# Robust Market Participation

| UTILITY | STATUS | BIDS |
|---|---|---|
| PNM | Alternative Approved 2020 | 735 |
| El Paso Electric | Partially Approved 2020 | 81 |
| Glendale California | Approved 2019 | 34 |
| Xcel Colorado | Approved 2018 | 417 |
| NIPSCO | Conducted 2018 | 90 |
| OG&E | Conducted 2018 | 94 |
| PSE | Conducted 2018 | 97 |
| APS | Conducted 2016 | N/A |
| SDG&E | Conducted 2014 | N/A |
| Xcel Colorado | Conducted 2013 | 55 |
| SCE | Conducted 2013 | > 800 |



# Comparing All-Source Procurement to Other Procurement Methods

## NONCOMPETITIVE

- Utility selects, designs, and builds generation.
- The self-build option may "win" an RFP with minimal market participation – market participants may expect bias.
- May conduct competitive solicitations for services or equipment.

## SINGLE-SOURCE

- Planning process selects amounts of each resource to be procured.
- Separate procurement for each technology.
- May be "comprehensive" if a bundle of solicitations is released at one time.
- Usually uses an independent evaluator.

## ALL-SOURCE

- Requirements for capacity or generation resources are technology-neutral.
- More responsibility for independent evaluator.
- Opportunity for self-build, especially with respect to unique resources / challenges.

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# Key All-Source Procurement Steps

## DEFINE THE NEED

- Commission approves:
  - Load forecast to meet
  - Existing plant retirements
  - Consideration of relevant public policy
- NOT a specific energy or capacity target
- Less restrictive than numeric capacity targets for specific technologies

## ELIGIBILITY, ASSUMPTIONS & BID EVALUATION METHOD

- Eligibility may have geographic limits or targets to meet reliability needs
- Transparent assumptions avoid post-RFP litigation
- Bid evaluation method must
  - Optimize among techs
  - Optimize across time
  - Address interconnection & reliability

## REVEAL PRICES & PERFORMANCE THRU RFP

- Market pricing more accurate than IRP cost forecasts
- Duke: Comparing market pricing to forecasts "yields little value in planning space."
  - Thus, price forecasts shouldn't determine resource allocation
- All-source RFP obtains price and performance information directly from the marketplace

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# Colorado Model: Unrestricted Access to Market Opportunities

- **Every four years:** Electricity resource plan (ERP) initiates an all-source procurement
- **Process:** Includes planning, procurement, then an abbreviated CPCN proceeding
- **Several need scenarios:** Final decision on need occurs after procurement
  - "Clean Energy Plan" scenario included early retirement of two coal plants
- **Colorado ERP approvals:** RFP documents, model contracts, modeling assumptions, etc.
- **RFP issued:** Uses different forms for intermittent, dispatchable, and semi-dispatchable
- **Bid evaluation:** All bids considered together in utility system planning model
- **Utility owned?** Yes, allowed to participate in and own projects that result from their own RFPs
- **Key tradeoff:** Colorado's process can be long – requires concentrated, long-term effort from involved stakeholders, utility, and commission staff.

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# Duke Energy's Criticisms

**"One-size-fits-all" approach.**

- Backwards. All-source is more flexible than single-source procurement.

**Solution in search of a problem.**

- False. Problems clearly described in our filings.

**Would reduce the utility management's role in selecting new resources.**

- True. Would provide greater transparency and less potential for utility bias.

**Inconsistent with North Carolina regulations and statutes.**

- Counsel will address.

# Duke Energy's 2020 IRPs Contemplate Single-Source Procurements

| Winter-Rated Capacity Additions (MW) | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|---|---|---|---|---|---|---|---|---|
| **Duke Energy Carolinas** | | | | | | | | |
| Combined Cycle | | | | | | | | |
| Combustion Turbine | | | | | | | 457 | 457 |
| Solar | | 1 | 1 | 1 | 1 | 20 | 20 | 20 |
| Battery | | | | | | | | |
| Compliance Renewables | 9 | (14) | 2 | 30 | 24 | 29 | 14 | 9 |
| **Duke Energy Progress** | | | | | | | | |
| Combined Cycle | | | | | 1,224 | 1,224 | | |
| Combustion Turbine | | | 457 | 457 | | 913 | | |
| Solar | | | | | | | 38 | 38 |
| Battery | | | | | | | | 457 |
| Compliance Renewables | | | (9) | 19 | 18 | 14 | (4) | 11 |
| **Total Resource Additions** | **9** | **(13)** | **451** | **507** | **1,267** | **2,200** | **525** | **992** |

# Some of the Problems Solved by All-Source Procurement

| Problem | Solution |
|---|---|
| Waiting until plants are already uneconomic | **P**rovide economic basis for retirement sched. |
| Litigation during regulatory (CPCN) approvals | **R**esolve tech/policy issues in advance |
| Select resources based on Duke's research | **O**btain price/performance from market |
| Considering one solution at a time | **C**reate opportunities with technology blends |
| Making investment decisions in silos | **U**pdate coordination of generation w/EE & Tx |
| Potential financial / cultural bias | **R**egulate RFPs for fair and competitive bidding |
| Risk delay in heavily contested proceedings | **E**xpedite certification of winning bids |

# Should utility or regulator lead all-source procurement?

## UTILITY-LED

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**Best examples:**

- NIPSCO (Indiana)
- El Paso Electric (NM/TX)
- PNM (New Mexico)

**Features:**

- IRP provides guidance
- Regulator reviews the process retrospectively
- RFP results in single “winning” portfolio

**Most Significant Risks:**

- Biased outcome
- Litigated CPCN (PNM, Minnesota Power) resulting in **delay or re-do** of RFP

## REGULATOR-LED

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**Best example:**

- Xcel Colorado

**Features:**

- IRP results in regulatory approval for need, eligibility, assumptions and evaluation method
- RFP results in alternative portfolios

**Most Significant Risks:**

- Litigated IRP resulting in longer overall timeline
- Tradeoff between cost and certainty – “best” combination of resources raises reliability or implementation issues

# Shifting from utility-led to regulator-led in North Carolina

- Without all-source procurement, the 2026-2031 resource mix will be determined by Duke Energy's IRP assumptions
  - Duke Energy is likely to issue an RFP late this year to obtain about 900 MW of gas peaking capacity for delivery in 2026
  - Duke Energy's IRP identifies 6,000 – 9,300 MW of winter-rated capacity for procurement from 2026-2031
- The Commission can use Duke Energy's 2022 IRP to launch a comprehensive procurement process that challenges the market to deliver a cheaper, cleaner mix of resources

# Regulatory & Statutory Basis for All-Source Procurement

Presented by Nick Jimenez, Southern Environmental Law Center