



2023 Integrated Resource Plan (IRP)

Stakeholder Update

February 27, 2023

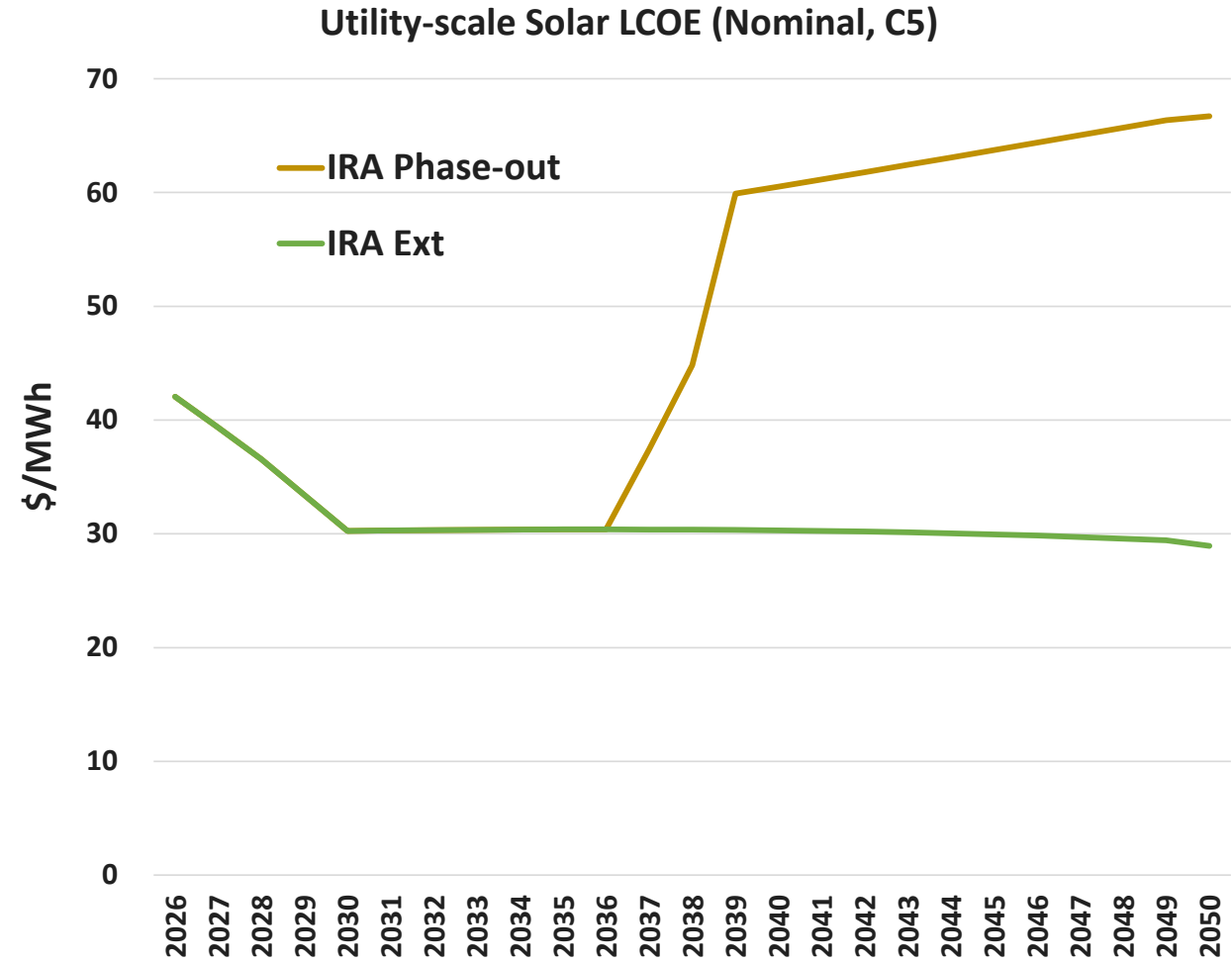
Renewable Resource Options

Renewable PPA Pricing

- IRP assumes all solar, energy storage, and wind technology resource options are provided as PPAs
- PPA price based on Levelized Cost of Energy (LCOE) or Levelized Cost of Capacity (LCOC) for new resource installations over the IRP study period
 - Capital and O&M costs based on NREL and industry data sources
 - Capital and O&M costs derived from NREL ATB 2022 Moderate Case assumptions
 - Solar and BESS capital costs updated for NREL's 2022Q1 Cost Benchmark and are assumed to persist through the IRP study period
 - Wind capital and O&M costs adjusted to reflect higher EPRI costs for Southeast U.S. projects and additional contingency to account for uncertainty of developing wind in South Carolina (no existing or proposed large-scale projects in the state)
 - Impacts of Inflation Reduction Act (IRA)
 - Reflects the lower of pricing provided by the applicable PTC or ITC credit
 - PTC rate adjusted to \$27.50/MWh (2022\$, subject to inflation indexing) based on recent Treasury guidance
 - IRA credits are assumed to persist over the IRP study period (do not phase out after 2033)

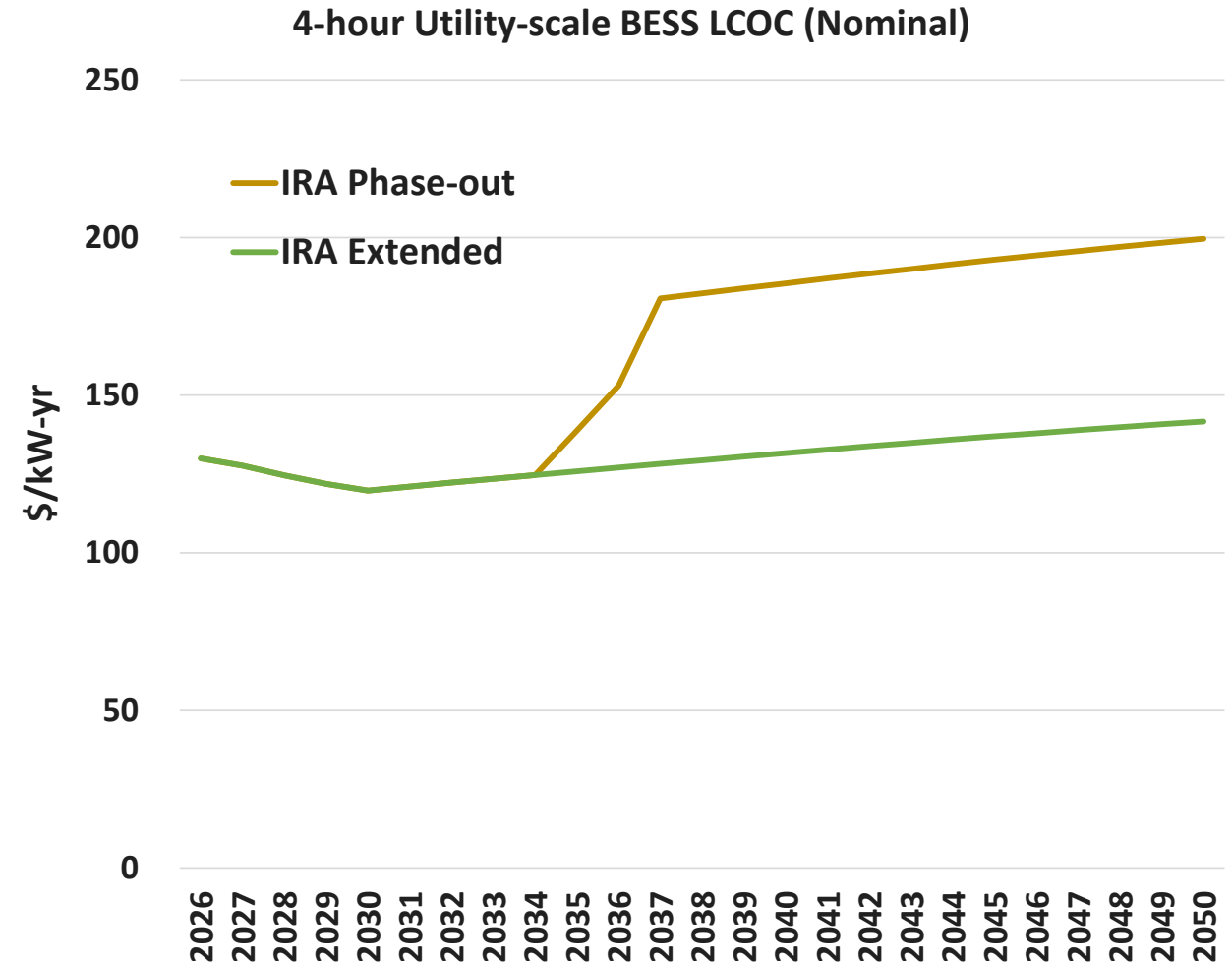
New Solar Resources

- Utility-scale solar PV resources modeled as PPA resource options, priced at LCOE
 - PPA price assumes the lower of ITC or PTC based pricing (PTC is projected to be lower beg. 2025)
 - IRA credits are assumed to extend through the end of the IRP study period
 - Assumes 30-year technology life
- Facility assumptions
 - NREL ATB Moderate Case
 - Capital costs adjusted upward by 15% based on NREL 2022Q1 Cost Benchmark
 - Class 5 solar irradiance (Eastern S.C.)
- Diversified production profiles based on NREL System Advisor Model (SAM)
- ELCC based on Astrapé studies



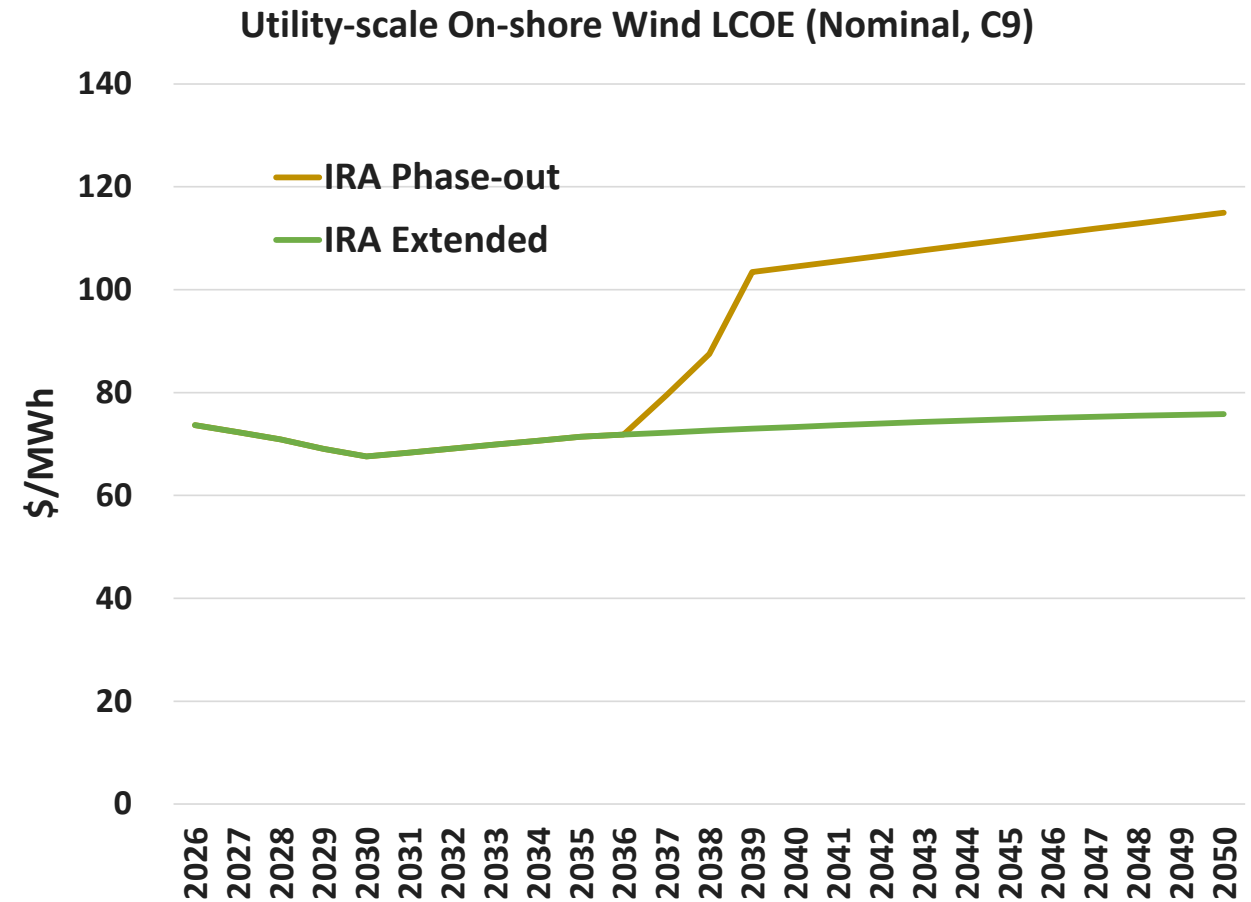
Battery Energy Storage System

- Utility-scale BESS resources modeled as PPA resource options, priced at LCOC
 - Assumes 30% ITC
 - IRA credits are assumed to extend through the end of the IRP study period
 - Assume 30-year technology life (in response to stakeholder feedback)
 - 10% ITC bonus credit to be modeled for limited quantity of BESS installations
- Facility assumptions
 - NREL ATB Moderate Case
 - Capital and fixed O&M costs adjusted upward by 15% based on NREL 2022Q1 Cost Benchmark
- Industry standard technical operating characteristics
 - Cost of charging and discharging modeled as dispatchable system energy cost/value
- ELCC based on Astrapé studies



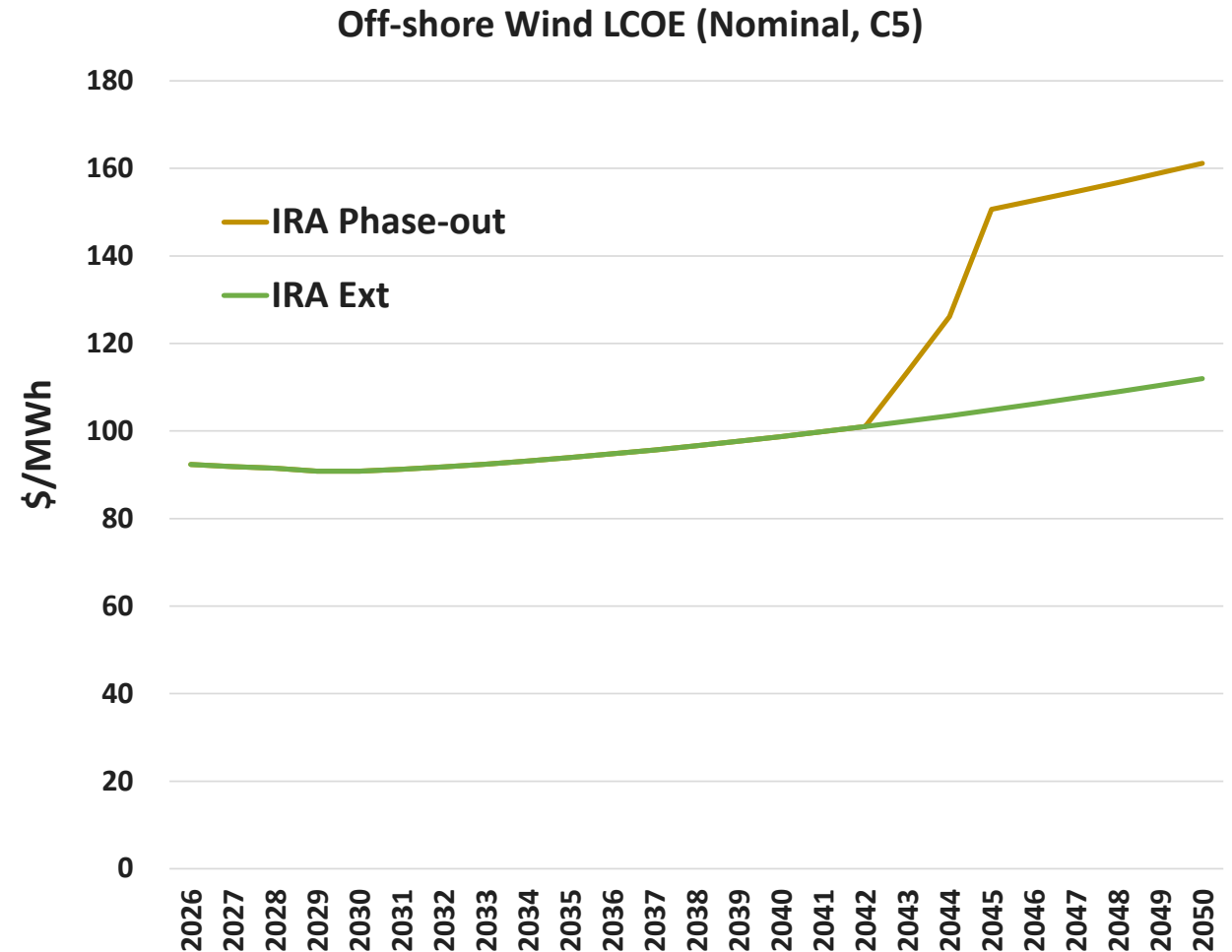
Onshore Wind Resource Option

- Utility-scale onshore wind resources modeled as PPA resource options, priced at LCOE
 - PPA price assumes the lower of ITC or PTC based pricing (PTC is projected to be lower beg. 2029)
 - IRA credits are assumed to extend through the end of the IRP study period
 - Assumes 30-year technology life
- Facility assumptions
 - NREL ATB Moderate Case
 - Capital and O&M costs adjusted upward by 19% and 14%, respectively, due to expected cost differentials for site and size of Southeast U.S. projects, based on EPRI data
 - Capital costs adjusted upward by 20% to account for uncertain development costs in South Carolina
 - Class 9 wind resource
- Production profiles based on NREL System Advisor Model (SAM)
- ELCC derived from prior Duke IRP filings



Offshore Wind Resource Option

- Offshore wind resources modeled as PPA resource options, priced at LCOE
 - PPA price assumes the lower of ITC or PTC based pricing (ITC is projected to be lower in all years)
 - IRA credits are assumed to extend through the end of the IRP study period
 - Assumes 30-year technology life
- Facility assumptions
 - NREL ATB Moderate Case
 - Capital and O&M costs adjusted upward by 11%, based on EPRI data
 - Class 5 wind resource
- Production profiles developed from industry sources
- ELCC derived from prior Duke IRP filings



Resource Portfolios

IRP Portfolios to be Studied

Economically Optimized

- Consider all resource options

Future Coal Retirements

- Earliest practical retirement of Cross (2034)

No New Fossil Generation

- No new fossil generation additions over study period

Net-zero CO2 by 2050

- Earliest practical coal retirement
- Achieve 70% CO2 reduction from 2005 levels by 2030
- Allow for CO2 offsets

- *No New Fossil Generation* portfolio scenario has been adjusted
 - The previous portfolio scenario (named *Environmentally Constrained*) assumed no new fossil additions and earliest practical retirement of all coal resources
 - However, such a portfolio would be largely the same as the Net-zero CO2 by 2050 portfolio throughout most of the IRP study period, thus providing limited usefulness for comparing IRP portfolios
 - The revised portfolio provides useful findings associated with restricting future resource additions to renewable, energy storage, and DSM technologies