

August 2020 Newsletter and Research Highlights

The ESCA group recently sent out the third installment of its 2020 quarterly newsletter. Download the [PDF version](#) of the August 2020 newsletter. If you would like to sign up for the ESCA public mailing list, please email eea@epri.com.

ESCA Research “At a Glance”

Interested in learning more about the breadth of research within the ESCA Group’s portfolio? Check out our new research overviews that summarize our current focus!

[Energy, Environmental, and Climate Policy Analysis](#)
[Resource Planning for Electric Power Systems](#)

Tech Brief – Incorporating Energy Efficiency and Demand Response into Electric Company Power System Resource Planning

Electric companies, industry stakeholders, and regulators are placing increasing emphasis on accurately representing distributed energy resources (DER) in electric company long-term resource planning efforts. This [study](#) quantitatively demonstrates the impact of a variety of approaches to representing energy efficiency (EE) and demand response (DR) in electric company resource planning modeling and analysis. Resource planners can use the results and insights developed to assist them in selecting EE and DR modeling approaches for their own resource planning.

The Value of Carbon Dioxide Removal

Carbon dioxide removal (CDR) technologies represent a potentially potent, and possibly essential, strategy for helping manage future climate change and the possibility of rapid industry and company level decarbonization. This [research](#) explores and develops insights regarding the potential value of CDR technologies – to climate management, the electric power industry, and companies – and identifies additional research opportunities. For more information on this topic, please contact Steve Rose (srose@epri.com).

Review of 1.5°C and Other New Global Emissions Scenarios: Insights for Company and Financial Climate Low-Carbon Transition Risk Assessment and Greenhouse Gas Goal Setting

In May 2020, EPRI hosted a public launch event for a new [report](#) that provides insights for companies (electric and non-electric) on low-carbon transition risk assessment, scenario analysis, and greenhouse gas goal setting.

There is increasing interest in analyzing company and financial climate-related risk and/or setting greenhouse gas (GHG) goals, with third-party organizations offering recommendations and methodologies. This research updates EPRI’s 2018 study and assesses 1.5°C and other newer global GHG emissions scenarios and derives new insights as well as validates previous insights.

Among other things, the study finds that caution is merited regarding the use of 1.5°C pathways in risk assessment or goal setting, and that it is important to consider pathway attainability, uncertainties, and global scenario issues that make them problematic as benchmarks. By validating previous technical observations, we are assured that EPRI’s insights and guidance are robust and a reliable basis for developing company methodologies, and evaluating third-party methodologies, now and into the future. For more information about this study and related research, please contact Steve Rose (srose@epri.com).

Peer-Reviewed Publications

The ESCA group routinely submits publicly available research to peer-reviewed publications. Recent articles include:

[Electric sector impacts of renewable policy coordination: A multi-model study of the North American Energy System](#)

[Parameterizing open-source energy models: Statistical learning to estimate unknown power plant attributes](#)

June 2020 Newsletter and Research Highlights

The ESCA group recently sent out the fifth installment of its public newsletter. Download the PDF version of the [June 2020 Newsletter](#). If you would like to sign up for the ESCA public mailing list, please email eea@epri.com.

Encouraging STEM Careers

During times like these, many of us have spent more time with family and some have become instant teachers. While teaching children at home can be challenging, science experiments and other projects have helped keep kids engaged. Learn the story of EPRI Scientist and ESCA researcher, Dr. Nidhi Santen, and find out how she is encouraging children from all backgrounds to get involved in science.

Dr. Santen has always used science as a tool to protect nature and says there is room in science for all types of skill sets. As a way to break barriers & stereotypes in STE(A)M, she has helped create “I am a Scientist” to encourage young students from all over the world.

Learn more about the campaign [here](#).

Efficient Electrification in U.S. States

Following the publication of the U.S. National Electrification Assessment EPRI launched, a series of assessments at the state level to evaluate the economic potential for electrification over the next three decades across the buildings, transportation, and industrial sectors. Using EPRI’s US REGEN model, EPRI evaluated electrification outcomes across a range of state specific scenarios that varied different policy, market, and technology drivers.

Back Pocket Insight — Minnesota High Renewables Standards

Using EPRI’s US-REGEN model, this study explores the implications of several future policy scenarios for reducing CO₂ emissions in Minnesota’s electric sector. The scenarios are designed to represent a series of increasingly stringent clean energy standard (CES) policies that progress toward meeting 100% of Minnesota’s electric load by 2050 from carbon free generation resources. Key insights from the analysis include:

- Minnesota can repower and expand in-state wind, expand solar, and extend other existing zero CO₂ generation operations to cost effectively meet stringent CES policies.
- Achieving a 100% CES by 2050 in the presence of strict in state physical or policy induced technology constraints could be very costly.
- Battery storage can help Minnesota most cost effectively comply with a 2050 CES but does not fully displace fossil resources in the scenarios studied.

ESCA Recent Publications

Bistline, J. Estimating Power Sector Leakage Risks and Provincial Impacts of Canadian Carbon Pricing
Bistline, J. and Young, D. Emissions Impacts of Future Batters Storage Deployment on Regional Power Systems