GRID DEPLOYMENT OFFICE

Department of Energy's **Draft National Transmission Needs Study**

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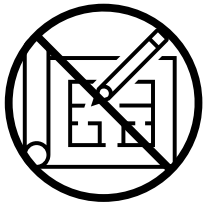
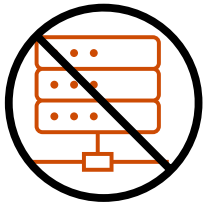
Webinar Notice

- None of the information presented herein is legally binding.
- The content included in this presentation is intended for informational purposes only relating to the Draft 2023 National Transmission Needs Study.
- Any content within this presentation that appears discrepant from the Needs Study language is superseded by the Needs Study language.

Understanding the Needs Study

	What It Is	What It Isn't
Objective	 Assessment of Needs	 Not prescribing solutions
Methods	 Considers published data and reports (80 references)	 No new modeling, cost-benefit analysis, or system planning
Output	 Needs organized by geographic regions	 Regions not synonymous with corridors

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National Transmission Needs Study

Executive Summary

I. Introduction

II. Legislative Language

III. Transmission Concepts

IV. **Historical Data: Current Need**

V. Review of Existing Studies: Current and Future Needs

VI. **Capacity Expansion Modeling: Anticipated Future Need**

https://www.energy.gov/gdo/national-transmission-needs-study

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IV. Historical Data: Current Need

IV.a. Historical Transmission Investments

IV.b. Market Price Differentials

- IV.b.1. Regional Price Differentials
- IV.b.2. Interregional Price Differentials
- IV.b.3. Transmission Value during Extreme Events

IV.c. Qualified Paths

IV.d. Interconnection Queues

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Transmission investments decreased during the second half of the 2010's.

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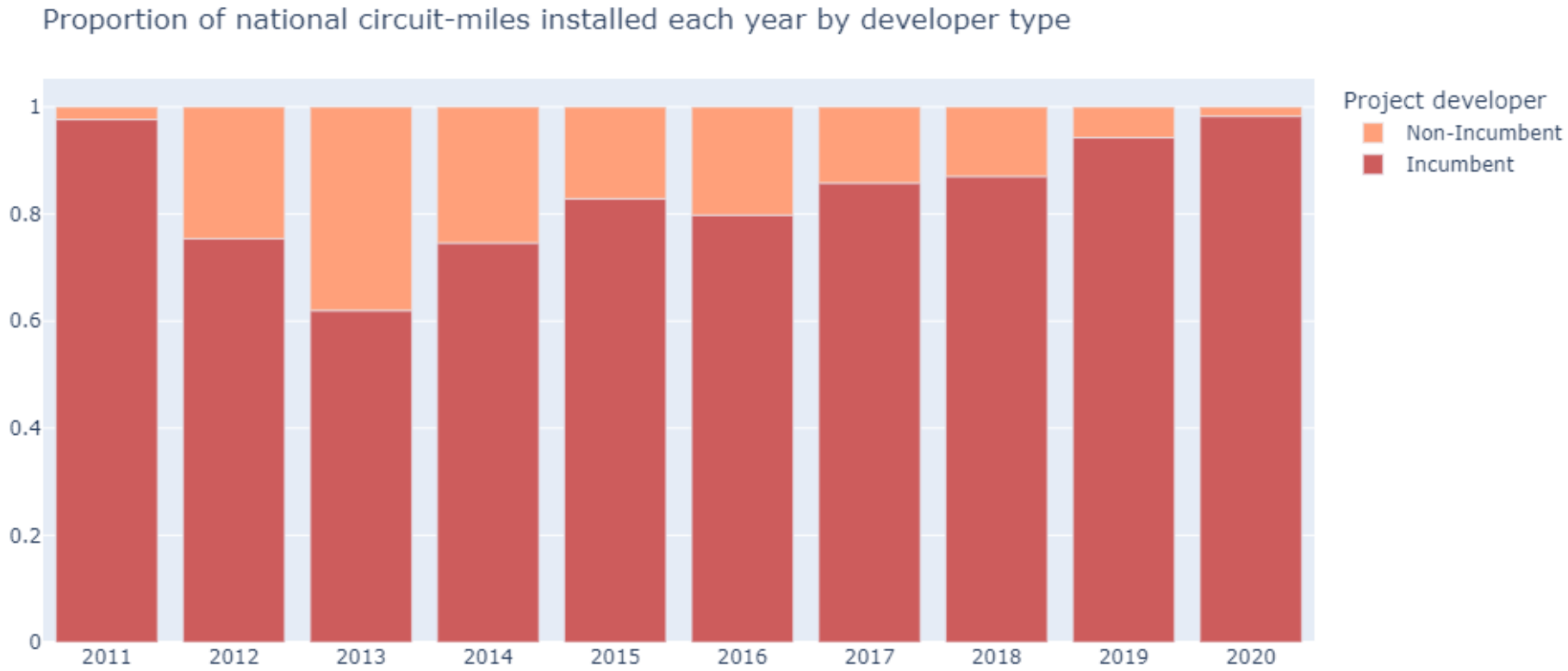
Non-incumbent developers' share of energized projects has decreased from 40% in 2013 to less than 5% in 2020.



Data from MAPSearch Transmission Database (2020). All transmission lines rated at or above 100kV.

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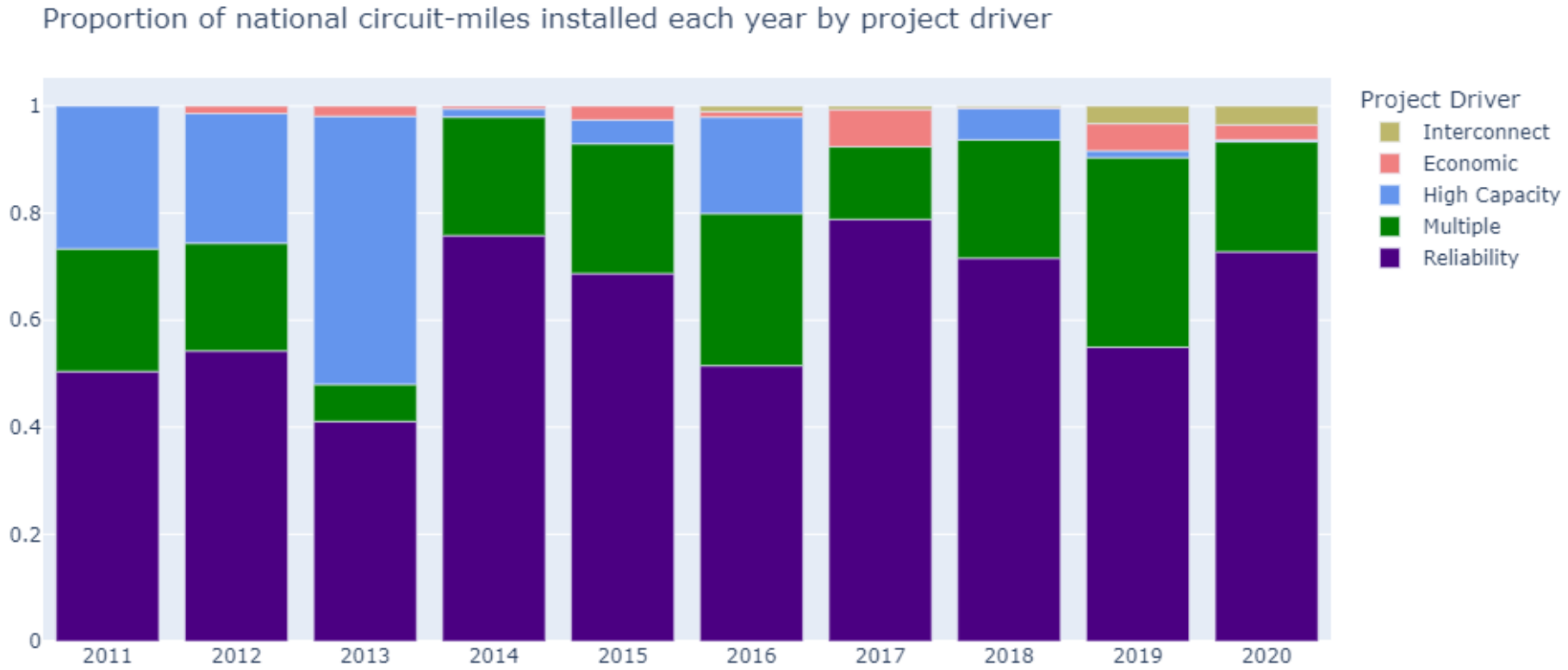
Share of projects addressing reliability concerns have increased. Share of high-capacity projects moving generation have decreased.



Data from MAPSearch Transmission Database (2020). All transmission lines rated at or above 100kV.

Interconnect projects to designed to connect power plants to grid.
Economic projects are designed to alleviate congestion causing high electricity prices.
High-capacity projects are designed to bring large amounts of generation far distances, usually at voltages >=345kV.
Reliability projects are meant to address a reliability concern on the grid.
Multiple drivers are for projects designed for at least two of the above drivers.

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VI. Capacity Expansion Modeling: Anticipated Future Need

VI.a. Included Studies and Scenarios

VI.b. Within Region Transmission Deployment

VI.c. Interregional Transfer Capacity

VI.d. International Transfers

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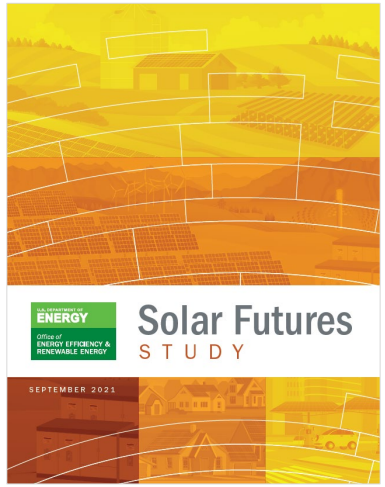
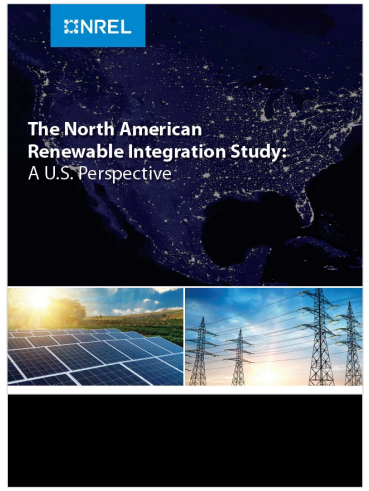
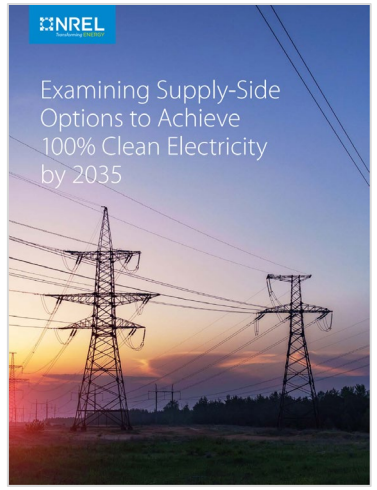
Data from 6 capacity expansion studies are analyzed to identify future regional and interregional transmission needs.

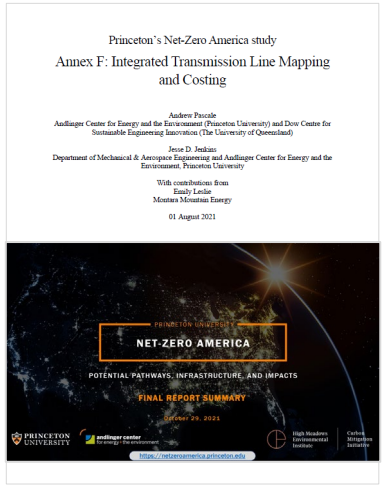
National Lab Reports

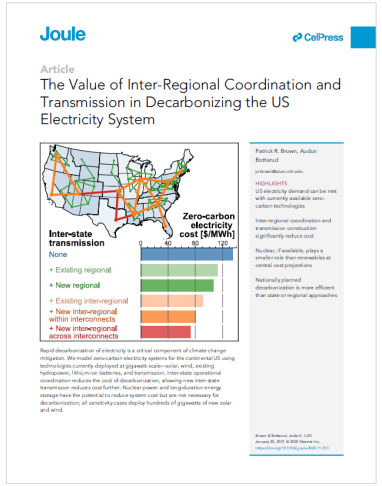






Academic Reports





Capacity expansion models optimize for least cost power sector solutions nation-wide given a range of input assumptions.

Model results help identify quantities of cost-effective transmission solutions and are used here as a proxy for future need to meet generation and demand growth.

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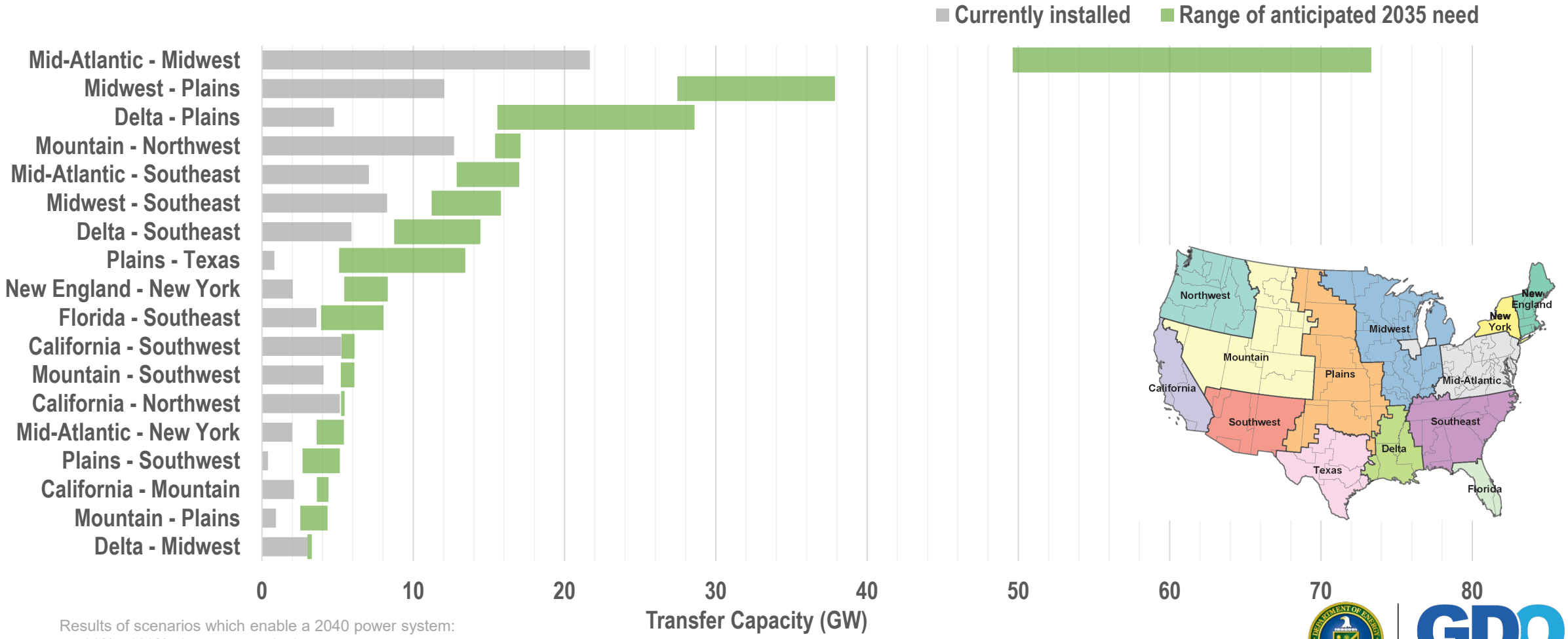
Interregional Transfer Capacity Expansion Results: 2035 Mod/High



Results of scenarios which enable a 2040 power system:

- 80% - 100% clean energy deployment
- 25% - 75% load growth
- 95 - 100% decarbonization from 2005 levels

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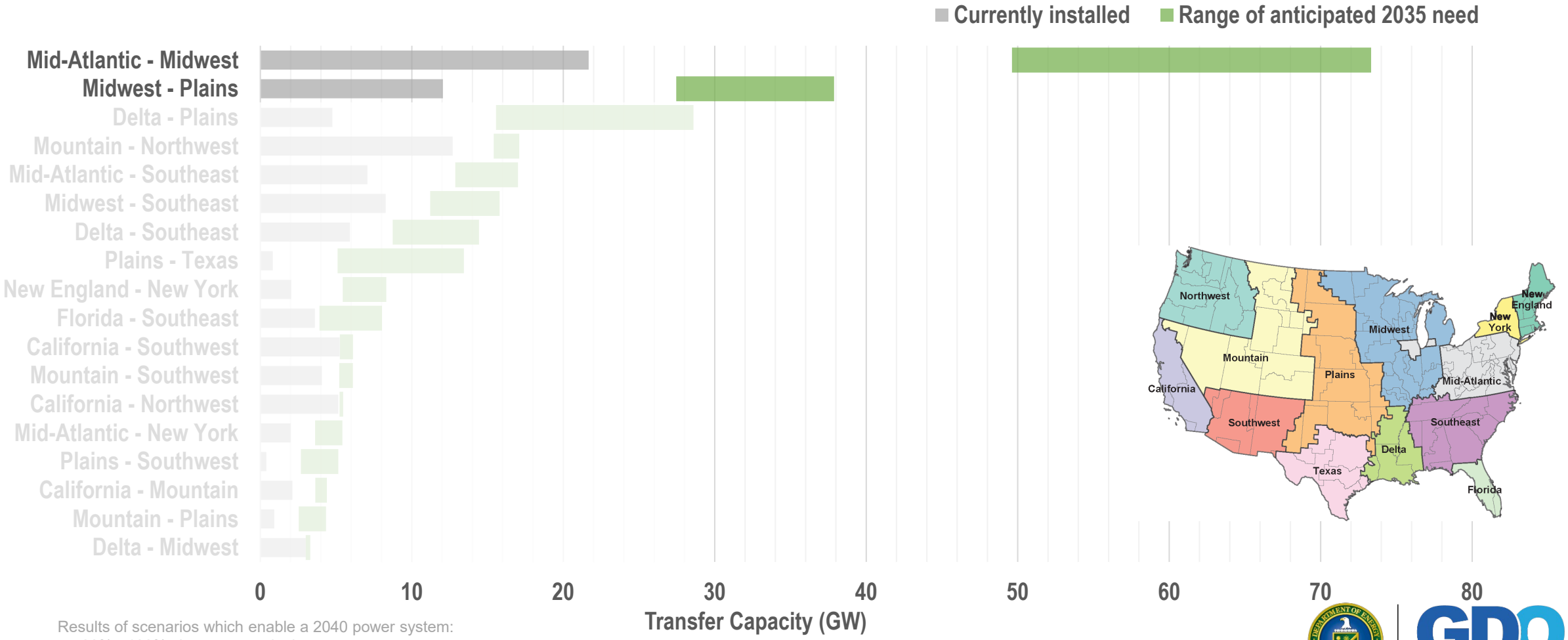

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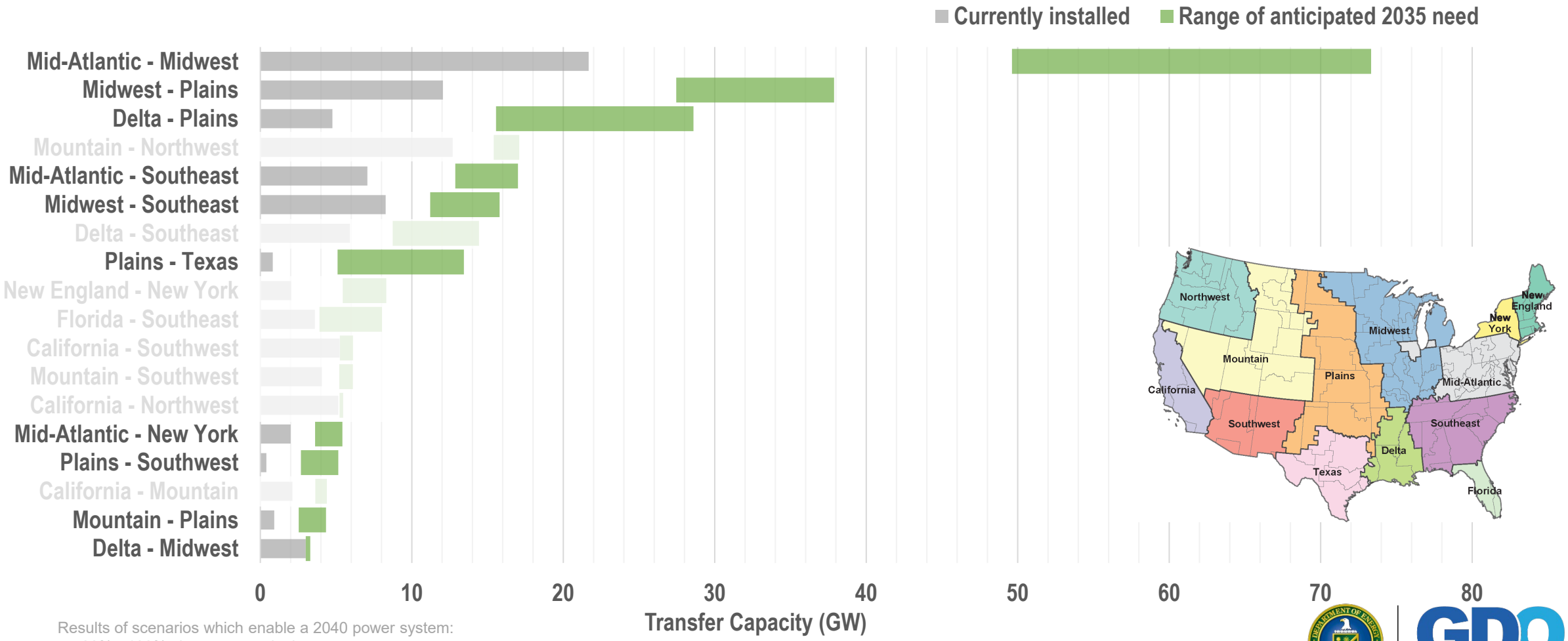

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Your input is requested!

To comment on the Needs Study, please email your comments as a **pdf attachment** to **NeedsStudy.Comments@hq.doe.gov**
Deadline April 20

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Thank you!

NeedsStudy.Comments@hq.doe.gov