Transmission Reserve Margin
Progress Energy - Carolinas

TRM

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Transmission Reserve Margin

- What is TRM?
- What are prudent TRM considerations?
- Who benefits from TRM?
- Conclusions

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What is TRM?
NERC Definition of TRM

- The amount of transmission transfer capability necessary to provide reasonable assurance that the interconnected transmission network will be secure. *TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change.*

NERC Operating Manual, Glossary of Terms, *Effective April 1, 2005*

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What are Prudent TRM Considerations?

- System Conditions Can Change Rapidly
  - Transmission Forced Outages
  - Generation Forced Outages
  - Parallel Path Flows
  - Outages/Events on Neighboring Systems
- TRM allows margin for inherent system uncertainty and to provide operating flexibility to ensure reliability of the interconnected transmission network (reality vs assumptions)

NERC Operating Manual, Available Transfer Capability Definitions and Determination, *June 1996*

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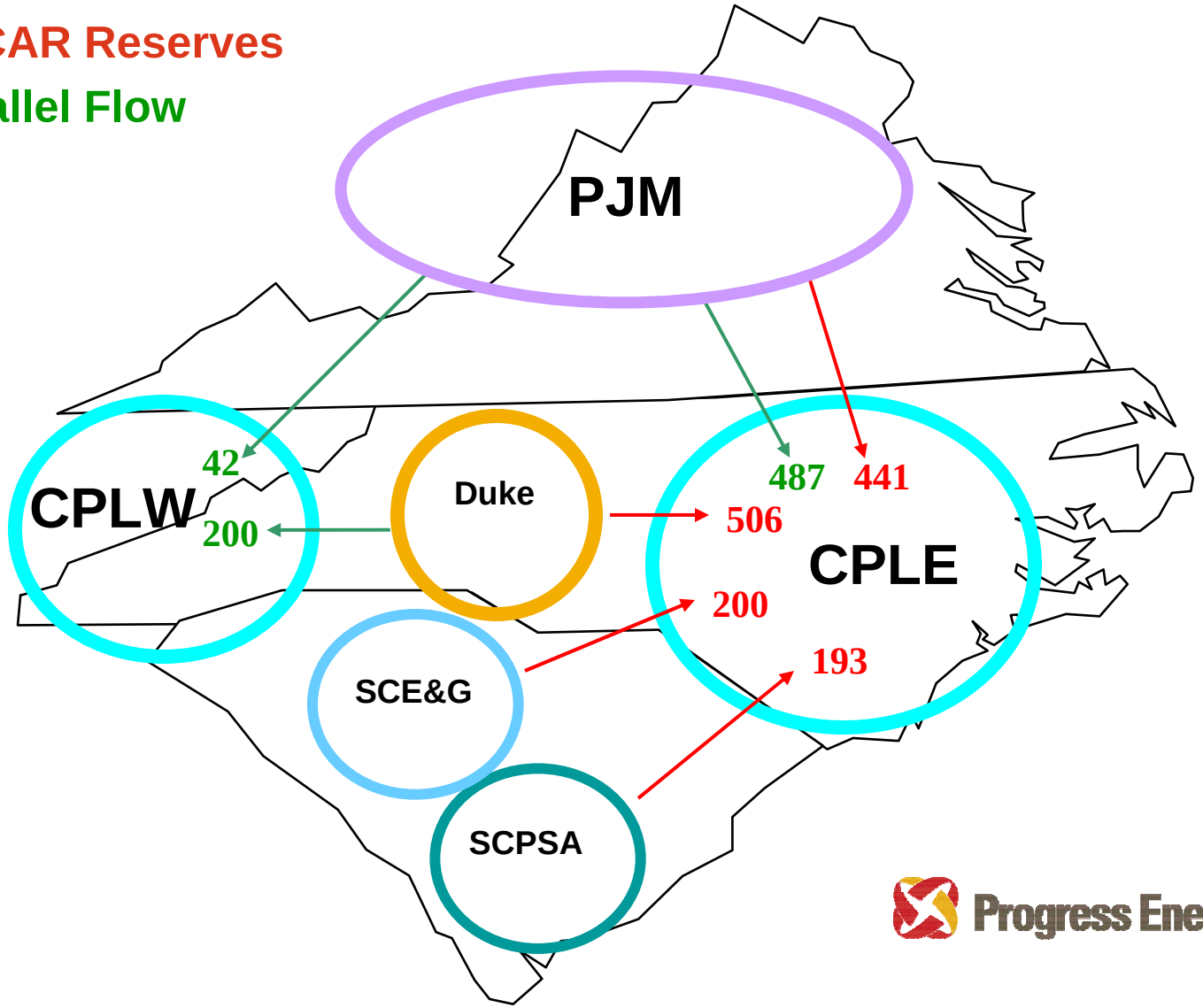
TRM Components

- VACAR Reserves
- Parallel Flow



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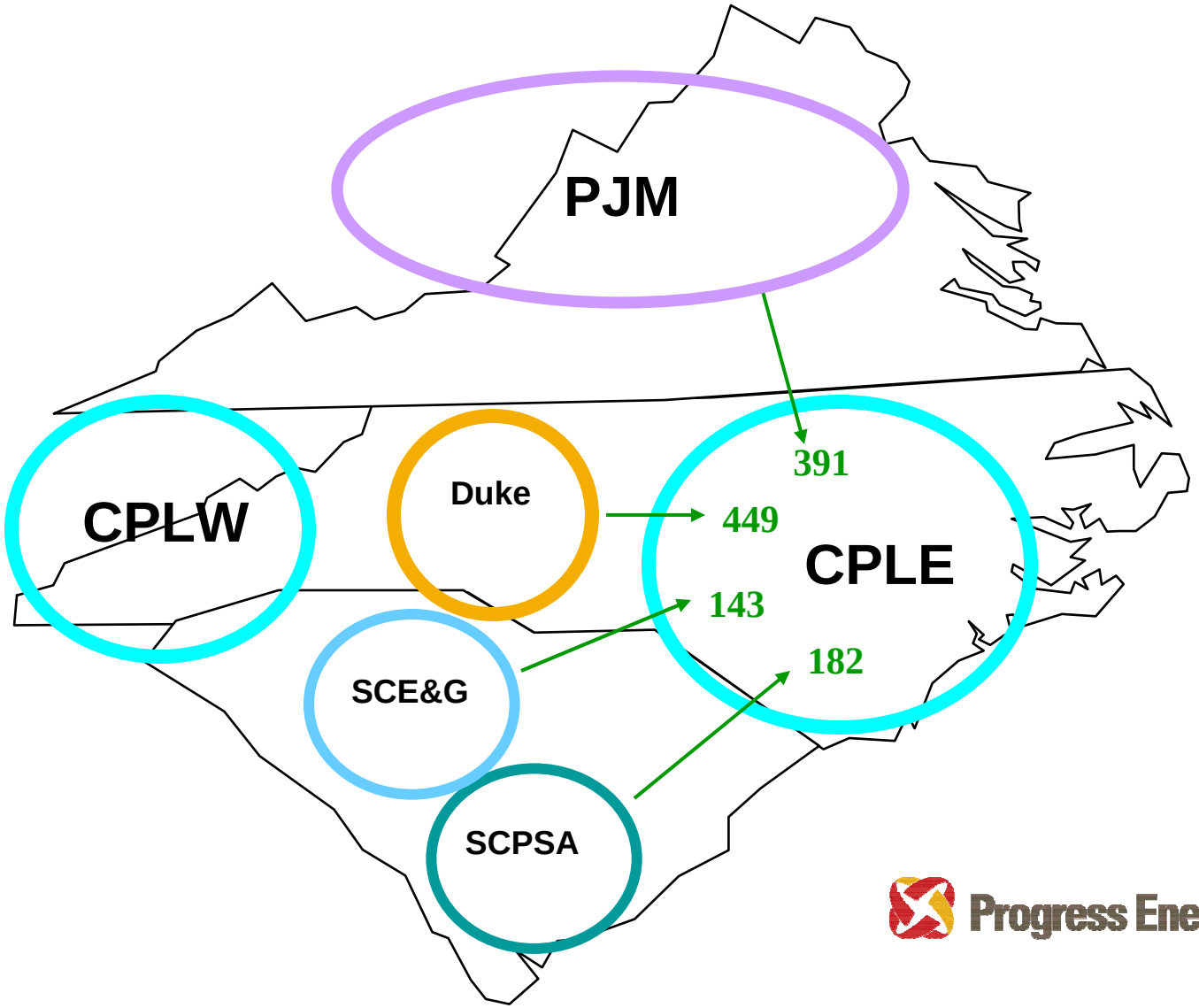
Import Capability for Inrush



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Who Benefits from TRM?

- CP&L Business Practices allow ***all*** load-serving entities to use TRM upon experiencing or anticipating an Energy Emergency Alert
- TRM has benefited all load-serving entities
  - NCEMC in January 2005 projected demand above resources and requested use of TRM
  - Loss of Brunswick 1 and 2 (>1800MW) in August 2005 required the use of TRM to reliably meet demand for ***all load-serving entities***

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Summary

- CPLE minimum required TRM is 1827MW for inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change
  - 1340MW for VACAR Reserves
  - 487MW for Parallel Flows
- Also, 1827MW TRM preserves reliability for inrush events
- CPLE TRM is used to support reliable service for all load-serving entities

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Questions?