

Advanced Transmission Technologies: Framework and Procedure

July 10, 2026

Project Scope

- The project aims to facilitate Indiana utilities ATTs deployment by developing Indiana-specific:
 - Advanced Transmission Technologies Framework Development
 - **Stakeholder Responses review**
 - ATT Deployment Procedures and Toolset
 - Comparative Cost and Timeline Analysis of ATTs vs. Traditional Transmission Solutions

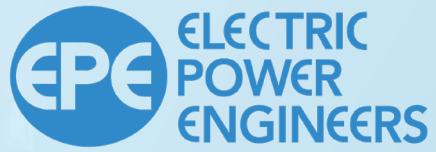
Presentation Outline



Stakeholder Response
Review and Lessons Learned



Next Steps



Stakeholder Response Review and Lessons Learned

Stakeholder Engagement Process

A stakeholder survey questionnaire was developed by the project team and distributed by the IURC, with responses received from :

- Duke Energy Indiana
- Hoosier Energy
- Indiana Michigan Power
- Wabash Valley Power Association
- ACORE
- Citizens Action Coalition of Indiana (CAC), Environmental Law & Policy Center (ELPC), Solar United Neighbors (SUN), and Vote Solar
- Pew Charitable Trusts
- WATT Coalition & AMP Coalition
- PJM Interconnection



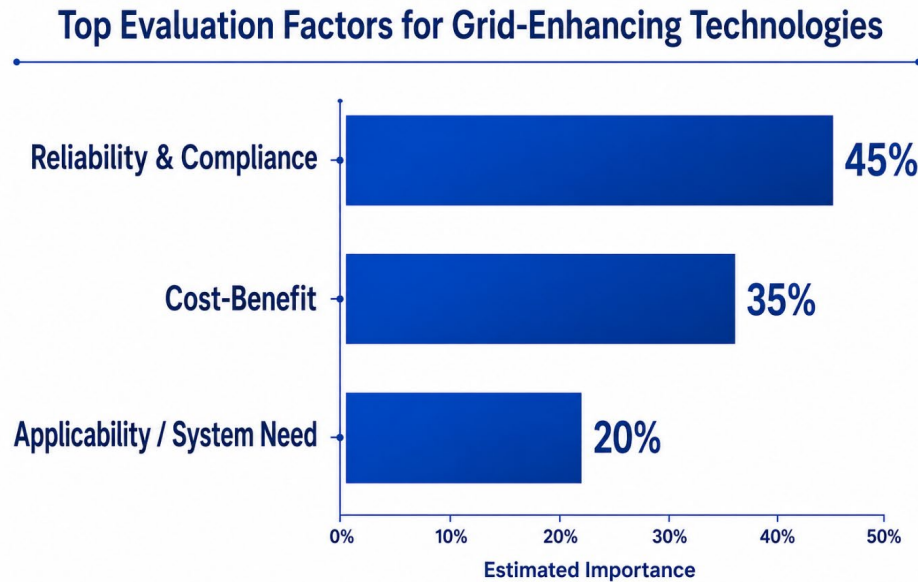
Stakeholder Engagement Process

- Stakeholder feedback was instrumental in **tailoring the framework to Indiana's needs**.
- The following slides present **selected insights** that shaped Task 1
- Additional survey responses and detailed findings are available upon request.

- **Special thanks to the IURC for distributing the survey, and especially to Beth Helene for coordinating the outreach and responses.**

1.Initial ATT Screening Criteria

Histogram based on stakeholder responses



- Evaluation framework based on Indiana utility criteria and best practices.

2. Differentiate Between Voltage and Thermal Constraints

Stakeholder Responses

Determine if the issue is purely voltage-related or purely thermal-related or involves both voltage and thermal

- **The evaluation framework should first classify the constraint as voltage-related, thermal, or a combination of both. This classification will guide the selection of the appropriate mitigation strategy.**

3. Identify Limiting Series Components!

Stakeholder Responses

Utilities identify and evaluate series limiting components before considering broader transmission upgrades or ATT solutions

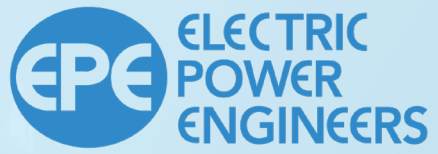
- **Evaluation framework includes a screening step to identify limiting series components. If a localized component is the root cause, it address it before evaluating broader mitigation options.**

4. Same corridor or not!

Stakeholder Responses

Differentiate between corridor-based and non-corridor-based transmission constraints

- **The evaluation framework should explicitly distinguish between constraints occurring within the same transmission corridor and those located in different corridors, as this distinction directly influences the selection of the most appropriate mitigation strategy.**



Next Steps

Next Steps

- Indiana specific ATTs Framework Development and Technology Characterization
- Indiana specific ATTs Procedure
- Indiana Specific ATTs Screening Tool

Indiana specific ATTs Framework Development and Technology Characterization

The first step is to develop a comprehensive taxonomy and evaluation framework for alternative technologies.

The framework will include, but is not be limited to:

- Advanced Conductors
- Advanced Power Flow Control Devices (APFC)
- Static Synchronous Compensators (STATCOMs)
- Static VAR Compensators (SVCs)
- Synchronous Condensers
- Transmission Switching Technologies
- Tower Lifting Techniques
- Voltage Source Converters (VSCs)
- Dynamic Line Ratings (DLRs)

Indiana specific ATTs Procedure

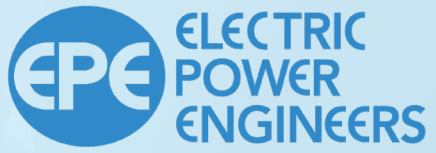
- Develop an Indiana-specific screening procedure
- Evaluate the applicability of Advanced Transmission Technologies
- Apply a structured, rule-based framework
- Determine technology suitability
- Rank feasible ATT options

Indiana Specific ATTs Screening Tool

- Develop two Indiana-specific ATT screening tools:
 - Thermal Violation Screening Tool
 - Voltage Violation Screening Tool
- Implement the ATT evaluation framework using a rule-based decision process.
- Identify and evaluate feasible ATT solutions for each violation.
- Rank viable technologies based on their expected effectiveness.
- Provide a consistent, transparent decision-support tool for transmission planning and generation interconnection studies.

Project Task Status

Task	#	Item Short Description	Status
Tasks 1-3	1	Task 1. Advanced Transmission Technologies Framework Development	
	2	Task 1.1: Framework Development and Technology Characterization:	
	3	Task 1.1.1: Stakeholder Questions and Interviews	Reviewed
	4	Task 1.1.2: ATTs Framework: Thermal Violations	In Progress
	5	Task 1.1.3: ATTs Framework: Voltage Violations	In Progress
	6	Task 1.1.4: Interim Results, Progress Report, and IURC Feedback	
	7	Task 1.2. Technology Attribute Matrix:	
	8	Task 1.3. Final Report Task 1: ATTs Framework and Attribute Matrix	
	9	Task 1.4. Debrief/Post-Study Report	
	10	Task 1.5. Project Timeline Alignment (if needed)	
	11	Task 2. Indiana-Specific ATT Deployment Procedures	
	12	Task 3. Comparative Cost and Timeline Analysis of ATTs vs. Traditional Transmission Solutions	



Thank You!