DOCKETED

Docket Number:	15-RETI-02
Project Title:	Renewable Energy Transmission Initiative 2.0
TN #:	215223
Document Title:	Smart Wires, Inc. Comments on the January 3, 2017 RETI 2.0 Plenary Group Meeting and Draft Report
Description:	N/A
Filer:	System
Organization:	Smart Wires
Submitter Role:	Public
Submission Date:	1/10/2017 4:56:32 PM
Docketed Date:	1/10/2017

Comment Received From: Smart Wires
Submitted On: 1/10/2017
Docket Number: 15-RETI-02

Smart Wires, Inc. Comments on the January 3, 2017 RETI 2.0 Plenary Group Meeting and Draft Report

Additional submitted attachment is included below.

January 10, 2017

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: Docket: 15-RETI-02 – Smart Wires, Inc. Comments on the January 3, 2017 RETI 2.0 Plenary Group Meeting and Draft Report

Dear Members of the California Energy Commission:

Smart Wires Inc. ("Smart Wires") is a California-based grid solutions company that designs, manufactures, and delivers modular power flow control solutions for transmission systems. Smart Wires commends the tremendous effort of the Renewable Energy Transmission Initiative's (RETI 2.0) Plenary and technical groups developing the draft reports and recommendations.[1] The team has done an impressive evaluation of the transmission, land-use, and environmental implications of renewable development scenarios and potential mitigation solutions. In particular, Smart Wires applauds the groups for recognizing advanced technologies such as power flow control as a mitigation solution to resolve constraints on the transmission system.

In the January 3 meeting, the Plenary Group requested information on the applicability of conceptual mitigation solutions and ideas for next steps. **As a next step in RETI 2.0 process, Smart Wires respectfully requests the TTIG to update the conceptual studies to include alternative mitigation solutions such as advanced transmission technologies.** Without updating these studies or conducting new special studies, it is difficult to know the applicability of alternative transmission mitigation options to system constraints.

The Draft Report is based on existing studies, which was an important starting point in RETI 2.0 to move renewable planning forward. However, in order to better understand the viability and applicability of alternative solutions such as advanced technologies, these existing studies need to be updated to include the latest renewable scenarios and potential mitigation solutions. Smart Wires recognizes this may be an extensive effort; therefore, TTIG could start in a few areas with known key constraints, such as those noted in Conclusion #1 of the report. Additionally, Smart Wires suggests that the California Public Utility Commission include advanced technologies in its Integrated Resource Plan scenarios to ensure alternative solutions are considered.

[1] California Natural Resources Agency. "Renewable Energy Transmission Initiative Plenary Report, Public Review Draft. December 16, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-RETI-02/TN214835_20161216T110654_Renewable_Energy_Transmission_Initiative_20.pdf

The Benefits of Flexible, Advanced Transmission Technologies

Advanced transmission technologies can *increase the full capacity/energy only capacity in TAFAs* by offering more flexibility in transmission grid infrastructure and operation. This additional flexibility provides consumer savings and helps California meet its renewable energy targets.

Flexible grid technologies, such as modular power flow control, dynamic line rating, and energy storage, can enable further utilization of existing infrastructure and allow transmission owners to defer large upgrades until interconnection becomes more certain. In addition, devices that can be installed incrementally and redeployed can provide optionality in transmission investments. This optionality allows transmission owners and renewable energy developers to make a modest upgrade to the system to increase capabilities in the near-term, which allows time to know with more certainty whether and where large, longer-term upgrades are necessary and enable their implementation where needed in an orderly fashion.

By adding flexible grid technologies, it is possible for the TTIG to more quickly integrate renewable energy, increase optionality in transmission investments, and mitigate constraints in a lower cost way using the existing transmission infrastructure. The Garamendi Principles[2] also support considering solutions to use existing infrastructure before major upgrades or new lines.

Conclusion

We appreciate the opportunity to participate in and submit comments to the RETI 2.0 process. RETI 2.0 comes with the implicit responsibility to find the best possible investments on behalf of the California rate-payers. By using flexible grid technologies to mitigate constraints, CAISO and transmission owners can provide consumer savings, improve network optimization, and provide optionality in infrastructure upgrades. We therefore respectfully suggest that the TTIG update the conceptual studies to ensure flexible grid technologies that improve utilization of existing infrastructure are evaluated as a mitigation solution.

Sincerely,

Todd Ryan

Todd Ryan, Ph.D. | Director of Regulatory Affairs
todd.ryan@smartwires.com
Smart Wires Inc.

[2] SB 2431 (Garamendi, Chapter 1457, Statutes of 1988)

About Smart Wires

Based in the San Francisco Bay Area, with offices in the United States, United Kingdom, Ireland and Australia, Smart Wires is the leader in grid optimization solutions that leverage its patented modular power flow control technology. Driven by a world-class leadership team with extensive experience delivering innovative solutions, Smart Wires partners with utilities globally to address the unique challenges of the rapidly evolving electric system. Smart Wires technology was developed by utilities for utilities, led by a consortium of large US utilities at the National Electric Energy Testing Research and Applications Center (NEETRAC). This core group of utilities, which included Southern Company, the Tennessee Valley Authority (TVA), Baltimore Gas and Electric Co. (BG&E) and the National Rural Electric Cooperative Association (NRECA), defined the vision for the original modular power flow control solution. Today, the technology is rapidly becoming part of the utility tool kit as more and more electric utilities explore new ways to alleviate congestion, improve network utilization, manage changing generation profiles and maintain reliable electric service.

Smart Wires' technology is used to mitigate transmission challenges, such as network congestion, at a time when increasing the capabilities of the current grid is essential. Smart Wires is a modular advanced power flow control solution that enables control of the power through each power line, directing flows away from lines that are heavily loaded and onto lines with spare capacity. By turning the lines themselves into dispatchable assets that can be dialed up or down like a power plant, grid operators can transfer much more power using the existing infrastructure they already have. In addition, power flow control allows grid operators to spread the variability across a wide area. By adding Smart Wires strategically to their grids, grid owners and operators can dramatically lower the investment required to accommodate a much higher penetration of renewable energy.