

IEEE/G-PTSC 2020 System Operator Survey on Global Power System Transformation

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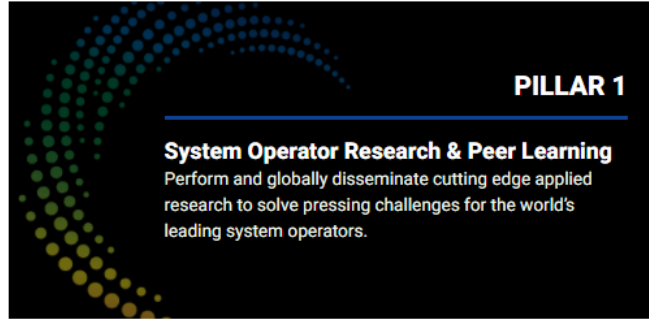
Emerging Technologies Forum, PJM
September 1st, 2021

Global Power System Transformation

The G-PST Consortium provides coordinated, holistic end-to-end support and knowledge infusion for system operators pursuing clean energy transitions, including performing cutting edge research, providing implementation support for world-class engineering and operational solutions; supporting workforce development; building and disseminating open-access data and tools; and accelerating localized technology adoption, standards development, and testing programs.

<https://globalpst.org/>





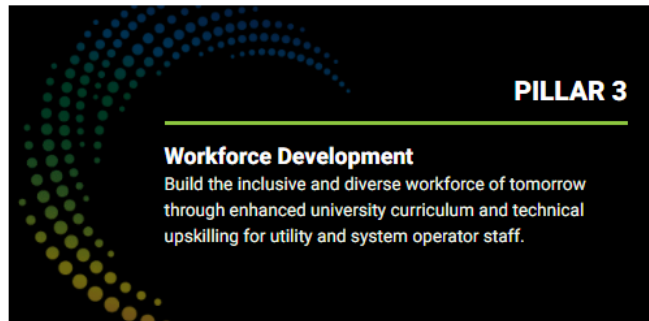
PILLAR 1

System Operator Research & Peer Learning
Perform and globally disseminate cutting edge applied research to solve pressing challenges for the world's leading system operators.



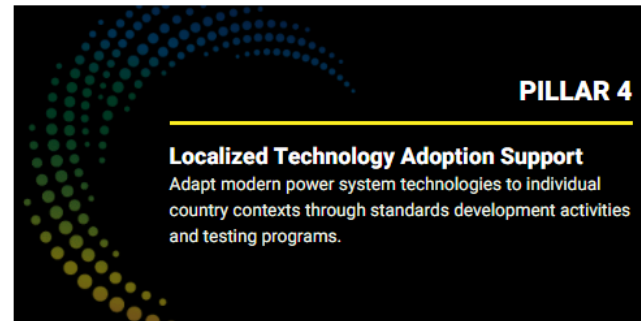
PILLAR 2

System Operator Technical Support
Provide implementation support to scale established best practice engineering and operational solutions for developing country system operators.



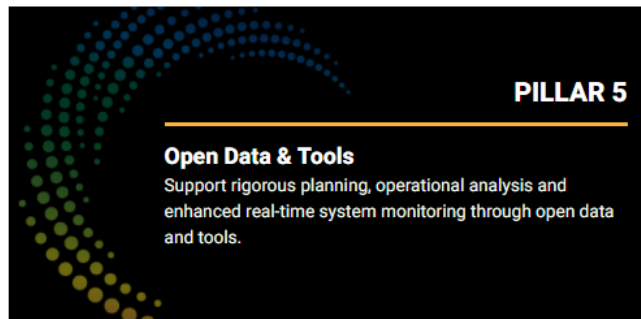
PILLAR 3

Workforce Development
Build the inclusive and diverse workforce of tomorrow through enhanced university curriculum and technical upskilling for utility and system operator staff.



PILLAR 4

Localized Technology Adoption Support
Adapt modern power system technologies to individual country contexts through standards development activities and testing programs.



PILLAR 5

Open Data & Tools
Support rigorous planning, operational analysis and enhanced real-time system monitoring through open data and tools.

- In August 2020, IEEE Standard Association and IEEE Power and Energy Society, through IEEE PES local chapters, conducted a global power system operator survey with the focus on
 - System Operator’s strategic technical priorities, and
 - Key enabling technical standards in use and priority standard needs

https://resourcecenter.ieee-pes.org/publications/white-papers/PES_TP_WP_GPSTC_011121.html



Power System Operator Survey Toward Global Energy Transformation Summary Report



Power System Operator Survey Summary Report: Toward Global Energy Transformation

Authored by
IEEE Standards Association and IEEE Power & Energy Society

Posted:
11 Jan 2021

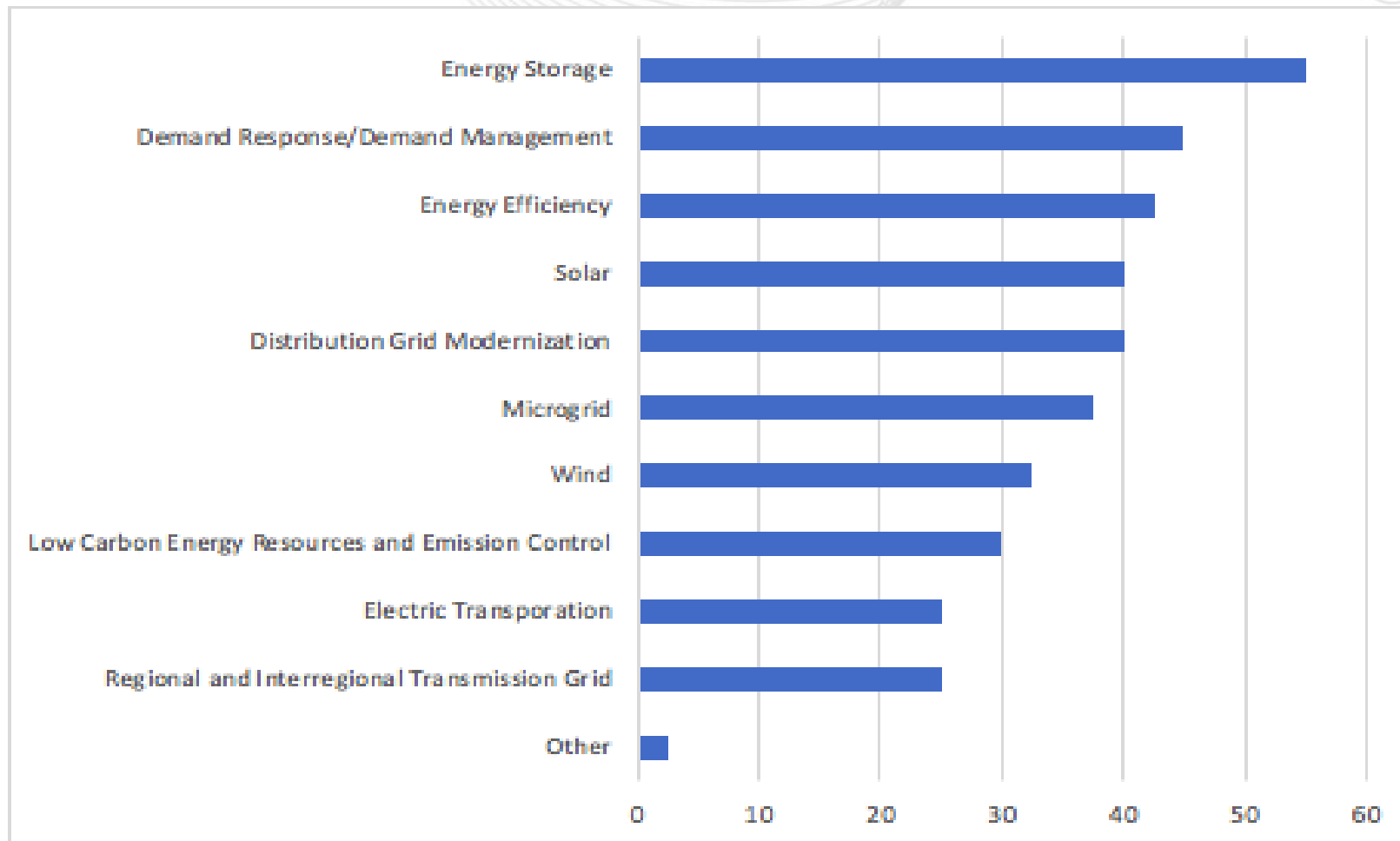
Authors:
IEEE Standards Association and IEEE Power and Energy Society

Session Type:
White Paper

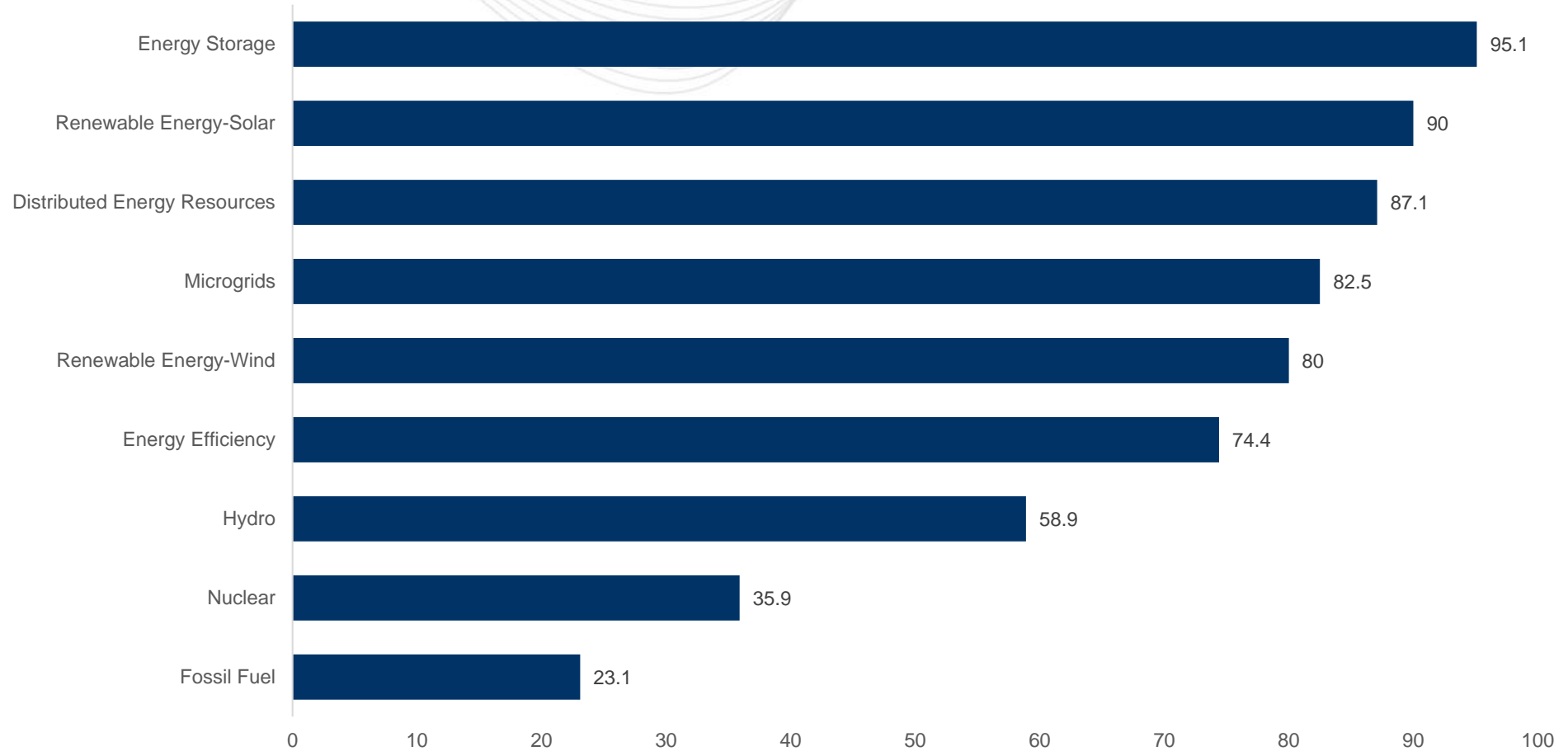
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IEEE SA and the IEEE Power and Energy Society are working with the Global Power Systems Transformation Consortium (G-PSTC) to assess viewpoints in the area of next-generation energy (e.g. renewables, energy storage, DER, energy efficiency, and grid modernization, etc.) to support priority needs and interests for specific countries/regions. This document provides a summary of the first survey developed and administered by IEEE in support of Pillar 4 of G-PSTC on Localized Technology Adoption Support. The target audience for the survey was system operators and was distributed to G-PSTC and IEEE contacts in August 2020. The survey was processed in the

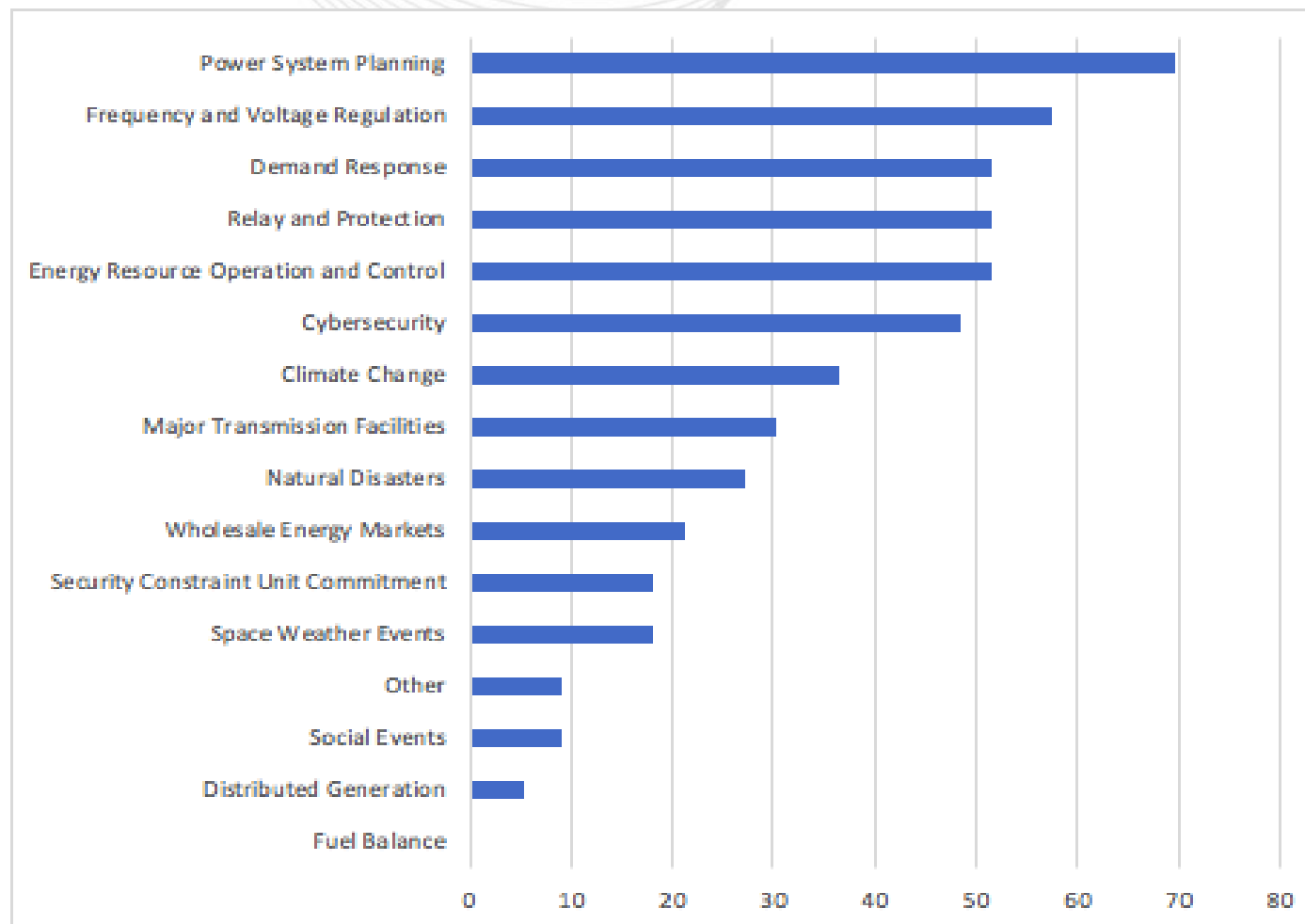
IEEE 2020 System Operator Survey – Business Strategies on Sustainable Energy



IEEE 2020 System Operator Survey – Demands on new standards



IEEE 2020 System Operator Survey – Business Strategic Plans



Latest Accomplishments

26

08, 2021



IEEE Standard 1547: DER Requirements and Implementation to Interconnection Processes

This presentation introduces key concepts and functionality required for IEEE Std 1547 compliant distributed energy resources (DERs). The presentation also includes discussion of overall DER capabilities and grid support functions under normal and abnormal grid conditions. Additional material will present considerations for adopting the standard into local jurisdictions.

Featured Speakers:

- David Narang – Principal Engineer in the Power Systems Engineering Center, NREL; Chair of IEEE 1547 Working Group.
- Ravi Subramaniam – Director, IEEE-SA Conformity Assessment Program

[Watch the recording.](#)

27

04, 2021



Impact of Inverter Based Generation on Bulk Power System Dynamics and Short-Circuit Performance

Featured Speakers: Gary Kobet, Tennessee Valley Authority and Pouyan Pourbeik, PEACE®.

Electric power systems around the world are undergoing a historic change in their generation mix, from synchronous ac rotating machines to inverter-based resources, which are power-electronic based technologies. Conventional planning and operating practices are adapting to the benefits and challenges these resources bring to reliability of the bulk power system (BPS). One issue that is increasingly becoming apparent under higher penetrations of inverter-based resources such as wind and solar photovoltaic (PV) generation, is a reduction in fault currents and short circuit strength. This webinar explores some of the technical challenges and opportunities presented by this transformation of the grid, as has been presented in the [IEEE Technical Report PES-TR68, *Impact of Inverter Based Generation on Bulk Power System Dynamics and Short-Circuit Performance, July 2018*](#), and goes a little beyond by briefly also touching on the latest developments in the industry and how some of the issues and gaps identified in the IEEE PES-TR68 are being addressed by industry efforts that have started since that time.

[Watch the recording.](#)

[Review the presentation deck.](#)

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