



Power Systems Engineering Research Center

Industry Advisory Board Meeting Highlights May 17-19, 2023



Iowa State University

The Industry Advisory Board (IAB) meeting this May took place on the Iowa State University campus. The meeting venue was the Memorial Union.

The meeting was attended by 102 people:

- 20 industry members representing 17 industries
- 32 university faculty and staff from 10 universities
- 47 students
- 3 invited guests

Our host during the 3-day long meeting was Prof. Venkataramana Ajarapu, PSERC site director at Iowa State. We thank him and the ECE staff for taking care of the many logistical and catering arrangements needed for such a complex undertaking.

Wednesday, May 17th

The meeting started in the early afternoon with stem meeting sessions:

Markets:

- Kory Hedman (Arizona State), *Chair*
- Tongxin Zheng (ISO-NE), *Vice Chair*

Presentations:

- Pradip Kumar, NYISO
- Anupam Thatte, MISO
- Xiaobo Wang, CAISO
- Harvey Scribner / Casey Cathey, SPP

Systems:

- Venkataramana Ajarapu, Iowa State, *Chair*
- Bo Gong, SRP, *Vice Chair*

Presentations:

- Bishnu Sapkota, GE
- Fei Ding, NREL

T&D:

- Sakis Meliopoulos, Georgia Tech, *Chair*
- Kurt LaFrance, CMS, *Vice Chair*

Presentations:

- Name, Company

Thursday, May 18th

After breakfast, the day began with an organizational update by Dr. Kory Hedman, PSERC Director, followed by a warm welcome from Dr. W. Samuel Easterling, Dean of Engineering at Iowa State University.

To start the Thursday session, attendees had the opportunity to listen to presentations from invited guest speaker Rodrigo Fuentes from GURROBI about *Cutting-edge Optimization for the Power Industry* and from industry member Pradip Kumar from NYISO about *NYISO's GURROBI User Experience*.

Following the GURROBI & NYISO session, projects ending in 2023 were presented. The presentations were:

- **S-90 (Systems):** *Grid Supporting Controllers for Enabling 100% Penetration of Inverter Based Resources*
Project Leader: Maryam Saedifard (Georgia Tech)
Team Members: Sakis Meliopoulos (Georgia Tech) and Saeed Lotfifard (Washington State)
- **S-95 (Systems):** *Reliable fault-ride through and protection of converter-dominated power systems under unbalanced conditions*

Project Leader: Dominic Gross (UW Madison)
Team Member: Maryam Saeedifard (Georgia Tech)

- **S-96 (Systems):** *Data driven control of DERs & hybrid PV plants for enhancing voltage stability with TSO-DSO interactions over multiple timescales*
Project Leader: Venkataramana Ajjarapu (Iowa State)
Team Members: Hugo Villegas-Pico (Iowa State), Anurag Srivastava (Washington State), and Anjan Bose (Washington State)
- **S-97G (Systems):** *System identification tools for power systems using synchronized measurements*
Project Leader: Vaithianathan (Mani) Venkatasubramanian (Washington State)
- **T-65 (T&D):** *Identification and Mitigation of T&D Operational Security Vulnerabilities in Inverter Dominated Power Systems*
Project Leader: Saeed Lotfifard (Washington State)
Team Members: Venkataramana Ajjarapu (Iowa State) and Sakis Meliopoulos (Georgia Tech)

Later in the afternoon students, faculty, and industry members participated in a poster session that featured 17 posters based on ongoing PSERC research projects. The posters presented by the students were entered into the annual *Best Poster* competition evaluated by PSERC industry members.

Following the poster session, the IAB members participated in a closed industry meeting. The day ended with a dinner that provided an opportunity to relax and network.

During dinner, Dr. Kory Hedman, PSERC's Director, announced the Best Student poster competition winner. The winning poster was for the project S-90: *Grid Supporting Controllers for Enabling 100% Penetration of Inverter Based Resources* by Siyao Cai from Georgia Tech.

We would like to express our gratitude to the industry members who participated in the posters' evaluation.

Friday, May 19th

At the beginning of the session the IAB chair, Tongxin Zheng presented a summary of the main outcomes of the closed IAB meeting.

After the summary from Tongxin, the Friday morning session continued with a Panel on *HVDC Transmission in the US: past, present, and future*. The panel was led by Jim McCalley from Iowa State University with invited speakers Raj Rajan from Soo Green HVDC Link and Bob Harrison from Transmission Developers, Inc.

Following the panel, Manimaran Govindarasu from Iowa State University gave a presentation and demo titled, *Cybersecurity for the Smart Grid with DER and EV integration*.

The meeting adjourned at 12:30 p.m. We would like to express a special thanks to our host Iowa State University, our attendees, and our invited guests.