

eSai Spark

October 2025 Digest



What's the Buzz?

Welcome to eSai's monthly digest! Each month we'll bring you regional utility developments and highlights from our team, so you have all you need to know about the energy space in the Mid-Atlantic!



Regional Landscape

Washington D.C

eSai's Principal, Dr. Nandini Mouli, attended the **Association of Energy Services (AESP)-Mid-Atlantic Regional Chapter Meeting** hosted by Washington Gas on September 25th. The energy landscape is changing rapidly, with policy and funding shifts, rising energy loads, concerns on affordability and increased focus on energy system adequacy. The timely insights from **the utility leadership representatives of BGE, PSE&G, Washington Gas, Pepco and SMECO** addressed today's questions of how to turn the uncertainty into opportunities for advancing a clean energy future that prioritizes security, equity, and sustainability from policy, funding, and system reliability.

Virginia

The eSai-VA Team—Hannah Aiken, Allison Sacamano, and Nandini Mouli—promoted Dominion Energy Programs at the **Virginia Clean Energy Summit (VACES)** held on September 30th and October 1st at the Richmond Convention Center. The agenda focused on how Virginia's energy demand—driven by explosive data center development in state—requires smart policies that implement energy storage, nuclear power, offshore wind, solar, carbon strategies, community aggregation and infrastructure innovation without burdening the existing systems. The **Clean Energy Round Table** sessions provided ample opportunities for the stakeholders to voice their input with the Department of Energy and its allies, while the exhibitors' booths displayed an array of technologies and services available for the Trade Allies to engage in.

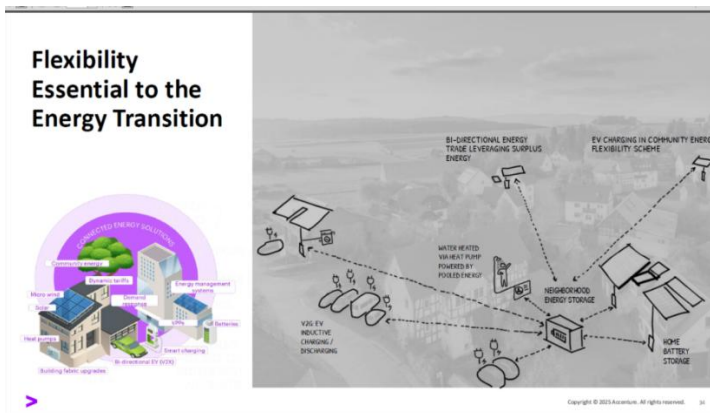


Allison Sacamano, Hannah Aiken and Nandini Mouli at VACES 2025



New Jersey and Pennsylvania

Navigating Change was the theme of the **14th Annual Policy Conference** held by Keystone Energy Efficiency Alliance (KEEA) and Energy Efficiency of NJ (EEA-NJ) on September 10th and 11th. To advance energy efficiency in PA and NJ, Steve Nade, the Executive Director of ACEEE spoke in his keynote that reducing the median low-income energy burden from 9.4% for the Mid-Atlantic area should be an immediate goal for the states. He listed increasing savings targets, raising the cost cap, expanding Low-Income and Demand Response programs as opportunities for improvement.



Nandini Mouli at the KEEA-EEA-NJ Summit

Molley Bauch, America's Connected Energy Services Lead, spoke on customers wanting increasingly seamless, automated and affordable energy. From individual integrators who provide individualized end-to-end empowering connected energy solutions to system integrators offering networked, resilient and balanced connected energy solutions, the energy efficiency landscape is being reframed around affordability and flexibility for better digital customer journey.

Maryland



Nandini Mouli at Maryland Clean Energy Center's Summit

Dr. Nandini Mouli was chosen to be a panelist at the **2025 Maryland Clean Energy Center's Summit** that was held on October 14th and 15th at the College Park, Maryland. The session **on Resilience-Building Retrofit Made Easy**, focused on how making retrofits is a crucial part of the clean energy transition for buildings which make up ~ 40% of total energy consumption. eSai's Principal talked about how retrofit projects are not just for energy savings, but also enhancing resilience, lowering operating expenses,



improving overall building performance, and meeting BEPS requirements. To demonstrate her points, she highlighted case studies of how eSai helps in building energy modeling as part of the engineering analysis. Specifically, adding Distributed Energy Resources such as CHP, thermal and battery storage with sophisticated controls systems as part of retrofits enhance demand flexibility, reliability and long-term sustainability of the public and private sector buildings. The other panelists reiterated it with retrofits of heat pumps for multi-family housing (Ben Roush) geothermal for large university complexes (Randy Clark) and funding for these including Energy as Service contracts (Brad Dockser, GreenGen).



Utility Space

Dominion Energy

Dr. Nandini Mouli presented on **the Science of Liquid Cooling for Data Centers** on October 28th as our **Monthly Technology Spotlight** series. This was our 7th webinar hosted for Dominion Energy. The technical discussions series serves to promote Dominion Energy's energy efficiency programs in Virginia. List of our upcoming webinars is attached at the end of the eSai Spark, please feel free to register. For previous discussions, check out this [link](#) to our website.

Southern Maryland Energy Cooperative (SMECO)

On October 2nd, Nandini Mouli visited the **Washington Suburban Sanitary Commission's (WSSC's)** largest bio-digester facility in Accokeek, VA to inspect three 2.5 MW CHP generators. The project aiding in the energy efficiency of the facility is funded by the Southern Maryland Energy Cooperatives (SMECO). We provided details of how the efficiency of the operation can be enhanced by upgrades to the electronic and gas instrumentation and detailed tuning and commissioning of the CHP central plant including digesters, boilers, Heat Recovery Steam Generators, storage and distribution system. The local operating team is meeting with the general contractors, and we will regroup with the WSSC's leadership on November 13th.



3 CHP's, 1.5 MW each



Heat Recovery Steam Generator



Baltimore Gas and Electric (BGE)

eSai's engineer, Ven Peruri, performed a post-inspection this month for a new construction office space (689,400 sq.ft.) comprised of a single high-rise structure with two main wings and an underground parking garage. The building is a curtain wall structure with all new construction building envelope. All spaces in the building are served by a centralized electrical meter and there is no natural gas usage in the building. The total kWh savings are about 1,972,357 kWh when compared with a Baseline model associated with ASHRAE Standard 90.1-2016 Appendix G.



Ven Peruri's visit to the office building



Air cooled chiller and outside air handling units



The U value of roof is 0.032, exterior walls are 0.045 and vertical glazing at U-0.31 & SHGC-0.31. All the new lighting systems utilize LED, primary cooling is provided by both unitary direct-expansion equipment on the main air handling units with chilled water (IPLV 19.03) supplied to downstream fan-powered air terminal units with sensible-only cooling coils. Primary heating and reheat are provided by electric resistance heating. Primary air handling units are provided with total energy heat recovery wheels

Thermal zones are served by air terminal units with sensible-only cooling coils and electric resistance reheat. Building dehumidification is provided exclusively at the main air handling unit via 48F sub-cooled primary air.

Cooling for the data centers on each floor is provided by a dedicated air-cooled chiller (IEER 16.71). Heating is provided by a dedicated electric boiler. Heating-only spaces are served by electric resistance unit heaters. Building controls are provided by central head end automatic temperature control system.





Team Updates

A warm welcome to eSai's new hire – Kirtivardhan Singh

eSai LLC has hired a Mechanical Engineer, Kirtivardhan Singh, a recent graduate with a master's degree from the Johns Hopkins University, Baltimore. He brings experience in Fluid Dynamics, Thermal Processes, Wind-turbine blade aero-structural optimization, Solar vapor-absorption (VAM) chiller design, and HVAC system design for TOTAL. Kirti worked at Bharat Electronics Limited for two years prior to his graduate program, where he focused on QA/QC, testing, validation, and production support. At eSai he will be leading the whole building energy modeling work for the utility clients. Let us give a warm welcome to Kirti to the eSai Engineering Team!



Contact Kirtivardhan at kirti@esai.technology

Soham Joshi

Other updates from our engineering team: Soham Joshi reviewed 18 projects and participated in 3 scoping calls for applications submitted to BGE's Building Tune-up and Custom incentive programs. Those projects propose total annual electrical savings of 2,745 MWh. The types of ECMs proposed by those projects included optimization of setpoints for: HVAC operation schedules, cooling/heating temperature for unoccupied hours of HVAC operation schedules, indoor CO2 levels/Demand Control Ventilation (DCV), minimum position of outdoor air dampers during economizer operation, differential pressure for hot water/chilled water pump loops, duct static pressure for supply air fans, as well as tune-ups of VAVs, indoor and outdoor coils of HVAC units, filter replacements and isolation dampers installation in ducts shared by multiple air handlers.



Tune-up (cleaning) of an HVAC unit's coils

BDCHW-S	On	Bi-Dir Primary Flow (Off=Pri, Or
CHWDP-SP	9.7 psi	CHW Differential Pressure Set
NCHW-DP	9.7 psi	North Chill. Water Differential P
SCHW-DP	6.0 psi	South Chill Water Differential P
SCHWP-O	26.3 %	Secondary CHW Pump VSD Ou
CHWBYPV-O	0.0 %	Chilled Water Bypass Valve Ou

Setpoints of differential pressure for a chilled water pump loop

The electrical savings calculations were based on historical temperature & weather data-based bin hour calculations & equations in spreadsheets and outputs from energy models developed in software like eQUEST, Carrier HAP 6, Trane Trace 3D Plus.



B_AHU-4 SF-C	On	Supply Fan Control
B_AHU-4 SF-S	On	Supply Fan Status
B_AHU-4 SF-VSD	56.8 %	Supply Fan Var Spd Drive
B_AHU-4 SASP-SP	1.40 in wc	Sup Static Press Spnt
B_AHU-4 SA-SP	1.39 in wc	Supply Static Pressure
B_AHU-4 RF-C	On	Return Fan 9 Control
B_AHU-4 RF-S	On	Return Fan 9 Status
B_AHU-4 RF-VSD	56.2 %	Return 6 Var Spd Drive
B_AHU-4 RASP-SP	1.40 in wc	Ret Static Press Spnt
B_AHU-4 RA-SP	1.41 in wc	Return Static Pressure

Set points of duct static pressure for a supply air fan

IAQ Econo Override Pos	100 %	IAQDVPOS
Diff Air Quality LoLimit	100	DAQ_LOW
Diff Air Quality HiLimit	700	DAQ_HIGH
DAQ PPM Fan Off Setpoint	600	DAQFNOFF
DAQ PPM Fan On Setpoint	800	DAQFNON
Diff AQ Responsiveness	0	IAQREACT
DAQ Lock-out Value	0	DAQLOCK
User determined DAQ	400	DAQ_USER
IAQ Low Reference	0	IAQREFL
IAQ High Reference	2000	IAQREFH
DAQ Low Reference	0	DAQREFL
DAQ High Reference	2000	DAQREFH

Indoor Air Quality setpoints for CO2 Levels requiring ventilation

Contact Soham at soham@esai.technology

Allison Sacamano and Hannah Aiken

Our Dominion Energy team, Allison Sacamano and Hannah Aiken started the month off strong at the VACE Summit (detailed above). Since starting in July, Allison is now completing solo inspections in the Northern Virginia territory, including three recent pre-installation AHU and Pump VFD projects. Aside from technical project inspections, Allison has been managing clients in the Dominion Trade Ally network, helping with the processing of over 15 newly submitted project proposals from HBS Solutions. Allison is working on expanding her outreach efforts in the Northern Virginia area to capture new industrial, healthcare, and lodging projects for the incentive program.

Hannah Aiken has also had a busy month, kicking up outreach efforts in the Richmond area and completing four inspections. These inspections included looking at window film installation and LED lighting. On October 29th, Hannah attended the Virginia Society of Health Engineers (VSHE) Fall Seminar 2025 in Richmond Virginia alongside Travis Clemmens, from the TRC Companies team. Hannah tabled for Dominion’s Energy Solutions Program with a fun new headband!



Hannah Aiken at VSHE Fall Seminar 2025

Contact Allison at allison@esai.technology

Contact Hannah at hannah@esai.technology



Mark your calendars!

New topics the 4th Tuesday of each month at 2PM

3rd Tuesday!

11/18

Optimized Ventilation & Heat
Recovery to Reduce Energy
Consumption of Facilities

[Registration](#)

3rd Tuesday!

12/16

Financial Solutions using Utility
Incentives for Cost-effective
Energy Projects

[Registration](#)

1/27

Thermal Management Guidelines
for Data Centers

[Registration](#)

2/24

Metering & Monitoring Energy
Consumption in Data Centers

[Registration](#)

4/28

Impact of Power Distribution
Unites for Energy

[Registration](#)

*No webinar for
March 2025

