Integrated Energy Systems Tools: FORCE training 2023

What

The DOE Office of Nuclear Energy Integrated Energy Systems (IES) program, led by Idaho National Laboratory (INL), is hosting a online/in-person **hybrid overview and training session for its modeling and simulation (M&S) tool suite "Framework for Optimization of ResourCes and Economics" (FORCE).** For more background on FORCE, please visit the IES website: https://ies.inl.gov/SitePages/System_Simulation.aspx.

When

3-day day training: April 4, 5 and 6, 2023

A final agenda with specific session times indicated will be distributed at a later date.

Who

The overview and training are primarily **targeted at people new to energy systems modeling** that plan to use the FORCE tool suite. However, anyone interested in knowing more about the M&S capabilities and efforts within IES is welcome to participate.

Format

The event will be hybrid online and in-person.

- Short overview presentations will be given in-person before hands-on training sessions. These presentations will also be streamed live through the Microsoft Teams platform.
- Hands-on training sessions will be available only in-person.

Contact

Registration: Brenda Monson
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General inquiries: Aaron Epiney
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Day 1 (April 4): INTRODUCTION, HERON

- Introduction to the IES program and overview of FORCE. Participants interested only in an IES program overview can opt to attend only this part. Participants interested in more detailed trainings on the different tools within FORCE should plan to join the subsequent parts.
- Holistic Energy Resource Optimization Network (HERON) is a primary part of FORCE that allows the user to construct workflows to solve complex resource allocation problems to meet target economic goals.

Day 2 (April 5): HYBRID

- HYBRID is a collection of transient process models used by FORCE to evaluate use cases. Developed in the Modelica language, these models are capable of representing the physical dynamics of various integrated energy systems and processes.

Day 3 (April 6): ECONOMICS, DYNAMIC CONTROL, VISUALISATION, USE CASES, AND EXPERIMENTS

- Overview of the Tool for Economic AnaLysis (TEAL), Feasible Actuator Range Modifier (FARM) for system control, input visualization for FORCE, and IES use cases. An overview of the IES experimental program will also be provided as well as an introduction to energy markets.

Registration

Registration is **free**. However, **registration is required** by email to brenda.monson2@inl.gov. Please indicate if you plan to participate in-person or through Teams for the presentations only.