SEI Asia Centre

Training on Low Emissions Analysis Platform

Overview and objectives

This training will introduce participants to the Low Emissions Analysis Platform (LEAP), a modeling tool for energy, environmental, and economic analysis. It will focus on building familiarity with LEAP's user interface and terminology, and on developing basic competency with:

- LEAP's functionality for modeling energy demand and supply, energy-related emissions, and energy system costs and benefits.
- Optimization modeling with LEAP and the Next Energy Modeling system for Optimization (NEMO).
- Connecting LEAP to the Water Evaluation And Planning system (WEAP), a water resources modeling tool.

The training will also provide an overview of LEAP's use in Southeast Asia and inform participants about other LEAP capabilities they may wish to explore on their own.

The training is funded by the Swedish International Development Cooperation Agency (Sida) and will be led by the Stockholm Environment Institute (SEI), the developer of LEAP. The event is structured as a remote workshop held on four days. Each day of the workshop will consist of a three-hour web meeting in which SEI will present key information and instruction on LEAP. Additionally, on the first three days, participants will be assigned hands-on exercises to complete before the subsequent meeting. *Completion of the exercises is essential for full participation in the training.* Participants who attend at least three days of the training will receive a certificate of attendance.

Before the workshop

Please use the checklist below to prepare for the workshop.

☐ **Verify prerequisites for running LEAP on your computer**

You will need a computer capable of running LEAP in order to participate in the training. The following attributes are required:

- Windows operating system – Windows 7, 8, or 10 64-bit. Note that LEAP is not supported on macOS, Linux, or Windows XP computers.
- Administrator privileges – To install LEAP, you must have access to a Windows user with administrative rights.
- Windows updates and anti-virus – Your computer should be fully patched with the latest Windows updates and should be running up-to-date anti-virus software.

☐ **Download and install LEAP and NEMO**

To save time in the workshop, please install LEAP on your computer beforehand. You should also install NEMO, an open-source tool LEAP uses for optimization modeling. Follow these steps:

- Sign up for the LEAP website
  - Go to https://leap.sei.org/ and click the "Sign Up" button in the top right hand corner.

- Complete the form to register for the LEAP website.

- Download and install LEAP
  - Click the "Download" button on the https://leap.sei.org homepage and download the latest 64-bit LEAP version.
  - While logged in to Windows as an administrator, double click on the downloaded file to start the installation process, and follow the on-screen prompts.

- Download and install NEMO
  - On the same page on the LEAP website, download the latest version of NEMO.
  - While logged in to Windows as an administrator, double click on the downloaded file to start the installation process, and follow the on-screen prompts.

☐ **Start and register LEAP**

As a final step, you should ensure LEAP starts properly, and you should register the software to activate all of its features.

- Start LEAP
  - Double click on the LEAP icon on your desktop, or select LEAP in the Windows start menu.
  - You may be asked to choose a folder for LEAP areas and to accept terms and conditions for using LEAP. Follow the on-screen prompts to do this.
  - If you are asked to register LEAP, skip registration for now. You will register the software after fully starting LEAP.
  - If you are asked which LEAP area to open, choose "Freedonia."

- Register LEAP
  - In LEAP, go to Help -> Register… to initiate registration.
  - Enter the following user name and registration code:

    User name: SEI Asia LEAP Training
    Registration code: 897-735-038-898-864

  - These credentials are for a temporary LEAP license created for the training. If you have your own individual LEAP license, you may use your credentials instead. To apply for an individual LEAP license, go to https://leap.sei.org/license/.

If you have trouble starting or registering LEAP, please post a question in the LEAP support forum.

Web meeting connection information

Connection information for the training's web meetings is provided below. The same link will be used for every meeting.

Join Zoom Meeting
https://us02web.zoom.us/j/87220415222?pwd=VWhuNFhHVFY3OUU1bGJRdE05MmFFQT09

Meeting ID: 872 2041 5222
Passcode: 353649

Find your local telephone access number: https://us02web.zoom.us/u/kblKMGBPqa

Agenda *(all times are local to Bangkok – UTC+7 hours)*

Time	Topic
Day 1: 19 October 2021	
18:30-18:40	**Welcome and review of workshop objectives and agenda**
18:40-19:00	**Participant introductions**
19:00-20:00	**Lecture 1: Introduction to LEAP** • Key features, history, structure, user interface, terminology
20:00-20:15	*Break*
20:15-21:05	**Lecture 2: Modeling energy demand with LEAP** • Definitions, concepts, and methods
21:05-21:20	**Orientation to Exercise 1: Energy demand modeling** • *Participants to complete Exercise 1 before Day 2*
21:20-21:30	**Preview of Day 2, open questions and answers**
Day 2: 20 October 2021	
18:30-18:35	**Welcome and review of day's agenda**
18:35-19:30	**Debriefing on Exercise 1** • Results, questions, and clarifications
19:30-20:30	**Lecture 3: Modeling energy supply with LEAP** • Definitions, concepts, and methods
20:30-20:45	*Break*
20:45-21:15	**Lecture 4: Modeling emissions with LEAP** • Definitions, concepts, and methods
21:15-21:20	**Orientation to Exercise 2: Energy supply and emissions modeling** • *Participants to complete Exercise 2 before Day 3*
21:20-21:30	**Preview of Day 3, open questions and answers**
Day 3: 21 October 2021	
18:30-18:35	**Welcome and review of day's agenda**
18:35-19:20	**Debriefing on Exercise 2** • Results, questions, and clarifications
19:20-19:50	**Lecture 5: Cost-benefit analysis with LEAP** • Definitions, concepts, and methods
19:50-20:05	*Break*
20:05-21:05	**Lecture 6: Optimization modeling with LEAP and NEMO** • Optimization modeling concepts, implementation in LEAP and NEMO

Time	Topic
	• Introduction to NEMO
21:05-21:20	**Orientation to Exercise 3: Cost-benefit analysis** **Orientation to Exercise 4: Optimization modeling** *Participants to complete Exercises 3 and 4 before Day 4*
21:20-21:30	**Preview of Day 4, open questions and answers**
Day 4: 22 October 2021	
18:30-18:35	**Welcome and review of day's agenda**
18:35-19:35	**Debriefing on Exercises 3 and 4** • Results, questions, and clarifications
19:35-19:45	**LEAP in Southeast Asia** • Overview of LEAP users and publications in the region
19:45-20:00	*Break*
20:00-20:30	**Lecture 7: Connecting LEAP and WEAP** • Concepts, approaches, and workflow for integrated LEAP-WEAP modeling
20:30-21:20	**Lecture 8: Advanced topics** • Introduction to other LEAP features participants may wish to explore: data manipulation, custom input and output variables, additional methods for energy demand modeling, additional result reporting options
21:20-21:30	**Wrap-up and closing**