



Ministry of Infrastructure



United Nations
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TECHNICAL TRAINING ON ENERGY PLANNING

LONG-RANGE ENERGY ALTERNATIVES PLANNING SYSTEM (LEAP) AND OTHER CONTEMPORARY PLANNING APPROACHES

September 29 - October 3, 2014
Kigali, Rwanda

DAY 1

8:00 - 9:30	Participant Registration	
9:30 - 10:15	Welcoming Remarks	Ministry of Infrastructure, Rwanda; Rwanda Energy Group; OneUN Rwanda
	Workshop Overview and Objectives	
10:15 - 10:30	Day 1 Program Agenda	Yohannes Hailu, UN Economic Commission for Africa, Sub-regional Office for Eastern Africa
10:30 - 10:35	Group Photo	
10:35 - 10:50	<i>Coffee Break</i>	
	Demonstration and Introduction to LEAP	
10:50 - 11:10	An overview of the Long-range Energy Alternatives Planning system is presented, including a review of its capabilities and a tour of the software using a sample data set.	Taylor Binnington, Stockholm Environment Institute (SEI)
	Hands-On Exercises: Part 1	
11:10 - 13:00	Beginning of core LEAP training modules, using sample data. Participants will learn to set up a new LEAP model, and begin a simple energy demand analysis for households. Exercises will be interspersed with short discussions to introduce concepts, as necessary.	Taylor Binnington
13:00 - 14:00	<i>Lunch Break</i>	
	Hands-On Exercises: Part 1 (continued)	
14:00 - 16:00	Completion of household demand assessment, and introduction to supply-side electricity modeling in LEAP.	Taylor Binnington
16:00 - 16:15	<i>Coffee Break</i>	



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Hands-On Exercises: Part 1 (continued)

16:15 - 17:00	Completion of supply-side modeling discussion and implementation in LEAP. Emissions accounting, and introduction to the concept of scenarios in LEAP.	Taylor Binnington
17:00 - 17:10	Wrap up and Instructions for Day 2	

Day 2

9:00 - 9:05	Day 2 Program Agenda	Yohannes Hailu
	Hands-On Exercises: Part 1 (continued)	
9:05 - 10:30	Construction of a second scenario for “Demand-side Management”, and completion of training module.	Taylor Binnington
10:30 - 10:45	<i>Coffee Break</i>	
	Hands-On Exercises: Part 2	
10:45 - 13:00	Following a discussion about demand modeling techniques, participants will extend demand analysis covered during previous day to include more advanced methodologies.	Taylor Binnington
13:00 - 14:00	<i>Lunch Break</i>	
	Hands-On Exercises: Part 2 (continued)	
14:00 - 16:00	Implementation of different demand modeling in LEAP, allowing fuel switching.	Taylor Binnington
16:00 - 16:15	<i>Coffee Break</i>	
	Hands-On Exercises: Part 2 (continued)	
16:15 – 17:00	Implementation of useful energy analysis in LEAP, allowing technology switching.	Taylor Binnington
17:00 – 17:10	Wrap up and Instructions for Day 3	

Day 3

9:00 - 9:05	Day 3 Program Agenda	Yohannes Hailu
9:05 - 10:30	Hands-On Exercises: Part 3	
	Participants will learn to add other energy transformation processes in LEAP, beyond the electricity sector.	Taylor Binnington
10:30 - 10:45	<i>Coffee Break</i>	Taylor Binnington



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10:45 - 13:00 **Hands-On Exercises: Part 3 (continued)** Taylor Binnington

13:00 - 14:00 *Lunch Break*

Cost-Benefit Analysis

14:00 - 16:00 Short discussion of the cost-benefit analysis approach, its advantages and its limitations, and implementation in LEAP. Taylor Binnington

16:00 - 16:15 *Coffee Break*

Hands-On Exercises: Part 4

16:15 - 17:00 Creation of a group of new scenarios, and a reminder of advanced scenario management and inheritance, covered earlier. Discussion of net present values. Taylor Binnington

17:00 - 17:10 Wrap up and Instructions for Day 4

Day 4

9:00 - 9:05 Day 4 Program Agenda Yohannes Hailu

Advanced Data Manipulation in LEAP

9:05 - 10:30 Lecture designed to teach additional features including importing and exporting data to/from Microsoft Excel and multiple scenario analysis. Taylor Binnington

10:30 - 10:45 *Coffee Break*

National Baseline Scenario

10:45 - 13:00 Begin incorporating Supply/Transformation data into baseline scenario, **using national data for Rwanda or other countries**. The content and proceedings of this section depend on the available energy data. Participants will work in groups to model assigned sectors in LEAP. Taylor Binnington

13:00 - 14:00 *Lunch Break*

National Baseline Scenario (continued)

14:00 - 15:45 Groups should begin to wrap up their respective modules, to be incorporated into multi-sector baseline scenario in LEAP. Groups will be asked to summarize progress made in respective areas. Taylor Binnington

15:45 - 16:00 Wrap-up of LEAP part of training

16:00 - 16:15 *Coffee Break*



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IRENA
International Renewable Energy Agency

Day 5

Introduction (IRENA, UNECA SRO-EA)

9:00 - 9:45	Discussion about IRENA, its Energy Planning programme, the SPLAT models and overall session objectives.	Asami Miketa, International Renewable Energy Agency (IRENA) Yohannes Hailu
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IRENA's SPLAT model: modeling approach

9:45 - 10:30	General introduction of the modeling approach, process of model development and optimization and scenario approaches.	Asami Miketa
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10:30 - 10:45	<i>Coffee Break</i>	
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IRENA's SPLAT model: Main results from IRENA's preliminary scenario analysis

10:45 - 11:30	Focuses on generation, inter-country energy trade, grid and off-grid power, generation cost and investment needs analysis.	Nawfal Saadi, International Renewable Energy Agency (IRENA)
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Hands-on exercise: reviewing main model assumptions

11:30 - 12:15	This session focuses on model structure, scenario definitions, data sources, resources data, trade data, characterization of renewable energy technologies (cost, fuel price, etc), and characterization of transmission and distribution technologies (loss, cost, reserve margin, etc).	Asami Miketa Nawfal Saadi
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Energy security assessment: methods and application

12:15 - 13:00	This session goes through energy security monitoring and evaluation methods and provides applied examples based on data from countries in Eastern Africa sub-region.	Yohannes Hailu
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13:00 - 14:00	<i>Lunch Break</i>	
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Hands-on demonstration using SPLAT model

14:00 - 15:30	Exercise about scenario development, sensitivity analysis and results generation and interpretation.	Asami Miketa Nawfal Saadi
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15:30 - 16:00	Gap analysis in energy planning capacity: the case of Rwanda	James Wahogo, MININFRA/UNECA Consultant
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16:00 - 16:15	<i>Coffee break</i>	
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Round table discussion: Gap analysis in energy planning in Eastern Africa sub-region

16:15 - 17:00

Discussion aims to identify further training needs, data gaps and follow-up activities.

Discussion with participants

17:00 - 17:10

Closing

Ministry of Infrastructure, Rwanda;
UNECA, SRO-EA