



## **Training course 1**

### **Capacity building programme on strategic long-term energy planning in the Kingdom of Swaziland**

**June 27 – July 8, 2016  
Manzini, Swaziland**

***Objectives of the training course: (1) completing the update of SPLAT-Swazi model (2) finalize a reference scenario and (3) develop alternative scenarios for the inclusion in the master plan***

## **AGENDA**

***The below agenda will be implemented flexibly according to the progress the team makes, and any additional needs that may arise during the course will be addressed as the course progress.***

### **DAY 1: JUNE 27 MONDAY**

10:00 – 10:15	<b>Welcome remarks</b>	Swaziland official
10:15 – 10:30	<b>Participants self introduction</b>	All participants
10:30 – 11:00	<b>Training course program – preview of the agenda</b>	IRENA
11:00 – 11:45	<b>Summary of the work done since the kick-off</b> <ul style="list-style-type: none"> <li>- MESSAGE online training course</li> <li>- Data collection</li> </ul>	Swaziland
11:45 – 12:30	<b>Energy planning – experience from Lithuania</b> <ul style="list-style-type: none"> <li>- Process</li> <li>- Methodologies</li> </ul>	IRENA
12:30 – 13:30	Lunch break	
13:30 – 16:30	<b>RES – SPLAT-SW mapping exercise</b> <ul style="list-style-type: none"> <li>- Instruction of the exercise</li> <li>- Exercise: Map technology names in the SPLAT-SW on the RES drawing in the excel file</li> </ul>	All participants
15:00 – 15:15	Coffee break	

## DAY 2: JUNE 28 TUESDAY

10:00 – 11:00	<b>Theory behind solving a model</b> <ul style="list-style-type: none"><li>- Key concepts</li><li>- Mathematics</li><li>- Economics aspects</li><li>- Technical aspects</li><li>- Various constraints</li></ul>	IRENA
11:00 – 13:30	<b>Updating technologies in SPLAT-SW</b> <ul style="list-style-type: none"><li>- Instruction: finding correspondence between data input template (Excel) and SPLAT-SW technology tab (MESSAGE)</li><li>- Discussion: review the data template (data collected by Swazi team)</li><li>- Exercise: completing the RES in SPLAT-SW (adding new technologies and updating technology parameters)</li></ul>	All participants
12:30 - 13:30	<b>Lunch break</b>	
13:30 – 15:30	<b>Updating technologies in SPLAT-SW (continued)</b> <ul style="list-style-type: none"><li>- Instruction: finding correspondence between data input template (Excel) and SPLAT-SW technology tab (MESSAGE)</li><li>- Discussion: review the data template (data collected by Swazi team)</li><li>- Exercise: completing the RES in SPLAT-SW (adding new technologies and updating technology parameters)</li></ul>	All participants
15:30 – 16:30	<b>Identifying the RE projects</b> <ul style="list-style-type: none"><li>- Presentation: use of the MapRE decision support making tool</li><li>- Discussion: agree on the projects to be considered</li><li>- Exercise: updating the data input template (Excel)</li><li>- Exercise: updating the SPLAT-SW technology tab (MESSAGE)</li></ul>	IRENA / all participants
16:30 – 17:30	<b>Representing variability of an energy system</b> <ul style="list-style-type: none"><li>- Demand</li><li>- Hydro</li><li>- Solar</li><li>- Wind</li></ul>	IRENA

## DAY 3: 29 JUNE WEDNESDAY

9:30-10:30	<b>New data template file</b> <ul style="list-style-type: none"><li>- Transfer of the updated SPLAT-SW file</li><li>- Solar and wind tab</li><li>- Zoning attribute file</li><li>- Any remaining questions</li></ul>	
------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

10:30 – 11:30	<b>Representing variability of an energy system (Continued)</b> <ul style="list-style-type: none"> <li>- Discussion on hydro variability</li> <li>- Representing the variability in SPLAT-SW</li> </ul>	
11:30 -13:00	<b>Running the SPLAT-SW and extracting the results</b> <ul style="list-style-type: none"> <li>- Execution of model run and the use of the data extraction template (excel)</li> <li>- Exercise: Extracting the results</li> </ul>	IRENA / all participants
13:00 - 14:00	<b>Lunch break</b>	
14:00 – 15:30	<b>Controlling technology deployment</b> <ul style="list-style-type: none"> <li>- Site specific projects vs generic technologies</li> <li>- Bounds on new capacity addition, on installed capacity, and on activity</li> <li>- Excercises</li> </ul>	IRENA / all participants
15:30 – 16:30	<b>Setting policy constraints</b> <ul style="list-style-type: none"> <li>- Basic mathematics</li> <li>- RM</li> <li>- CO<sub>2</sub> emissions</li> <li>- RE targets</li> <li>- Trade constraints</li> </ul>	IRENA / All participants

#### DAY 4: 30 JUNE THURSDAY

9:30 – 10:30	<b>Setting policy constraints (recap)</b>	All participants
10:30 – 13:00	<b>Reviewing the reference case results</b> <ul style="list-style-type: none"> <li>- Extract the results</li> <li>- Analyze the results</li> <li>- Improve the model</li> </ul>	All participants
13:00 – 14:00	<b>Lunch break</b>	
14:00 – 16:30	<b>Reviewing the reference case results (continued)</b>	All participants

#### DAY 5: 1 JULY FRIDAY

9:30 – 12:00	<b>Calibration of the results to the historical data</b>	All participants
12:00 – 13:00	<b>Incorporating time of use tariff</b>	All participants
13:00 – 14:00	<b>Lunch break</b>	
14:00 – 14:30	<b>Checking your input data</b> <ul style="list-style-type: none"> <li>- Use of the excel template for checking the adb file contents</li> </ul>	All participants
11:45 – 13:00	<b>Work session</b> <ul style="list-style-type: none"> <li>- Improving the reference scenario</li> </ul>	All participants
14:00 – 15:00	<b>Reviewing the reference case results</b>	All participants

15:00 – 16:00	<b>Wrap up of the week 1</b>	
---------------	------------------------------	--

#### DAY 6: 4 JULY MONDAY

9:30 – 10:45	<b>Review the homework and calibration</b>	IRENA / All participants
10:45 – 11:45	<b>Creating scenarios</b> <ul style="list-style-type: none"> <li>- What is scenario approach? Different types of scenarios.</li> <li>- Demonstration: How to create scenarios using the MESSAGE interface</li> <li>- Discussion: Possible scenario ideas</li> </ul>	IRENA / All participants
11:45 – 12:30	<b>Creating scenarios – group work (3 groups)</b> <ul style="list-style-type: none"> <li>- develop scenarios and compare with the reference case</li> <li>- prepare presentations</li> </ul>	All participants
12:30 – 13:30	Lunch	
13:30 – 16:30	<b>Creating scenarios – group work (Continued)</b> <ul style="list-style-type: none"> <li>- develop scenarios and compare with the reference case</li> <li>- prepare presentations</li> </ul>	All participants

#### DAY 7: 5 JULY TUESDAY

9:30 – 10:30	<b>Introduction to LEAP</b>	IRENA
10:30 – 12:00	<b>Group discussion – (results of scenario development from Monday)</b>	All participants
12:00 - 13:00	<b>Group discussion – scenarios to be reflected in the master plan</b>	All participants
13:00 – 14:00	Lunch break	
14:00 – 16:30	<b>Work session (to refine scenarios)</b>	All participants

#### DAY 8: 6 JULY WEDNESDAY

9:30 – 10:30	<b>Analyzing seasonal and diurnal dispatch patterns using the Interface</b>	IRENA
10:30 – 13:00	<b>Work session</b>	All participants
13:00 – 14:00	Lunch break	
14:00 – 16:30	<b>Work session</b>	All participants

#### DAY 9: 7 JULY THURSDAY

9:30 – 12:30	<b>Group presentation (3 groups) and identification of other outstanding issues</b> <ul style="list-style-type: none"> <li>- e.g. Ethanol blending, decentralized option, SE4ALL</li> </ul>	All participants
--------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------

12:30 – 13:30	Lunch break	
13:30 – 16:30	<b>Way forward and time lines</b> <ul style="list-style-type: none"> <li>- analysis</li> <li>- master plan drafting</li> </ul>	Swaziland

#### DAY 10: 8 JULY FRIDAY MEETING WITH STEERING COMMITTEE

9:30 – 9:45	<b>Summary of the training: reporting to the Steering Committee</b>	Swaziland
9:45 – 11:00	<b>Presentation of the key scenario results</b> <ul style="list-style-type: none"> <li>- 15 minutes each for presentation (3 groups)</li> <li>- 30 minutes group discussion</li> </ul>	Swaziland
11:00 – 11:15	Coffee break	
11:15 – 12:30	<b>Discussion on the outline of the Master Plan</b>	Swaziland
12:30 – 13:00	<b>Way forward and responsibilities</b> <ul style="list-style-type: none"> <li>- way forward and responsibilities</li> </ul>	Swaziland