

**Energy Modelling Platform for Africa  
Cape Town, 2019**

**Agenda – Geospatial Electrification Modelling**

<b>Monday January 14</b>				
<b>OnSSET track intro day</b>				
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:15</b>	<b>Registration and Welcoming</b>			
9:15 - 09:45	Introduction to Energy Modelling Platform for Africa 2019	UCT / World Bank	Introduction to EMP-A and UCT	-
09:45 - 10:15	Energy Modelling Activities at KTH & Introduction of Kartoza	Mark Howells (KTH) / Kartoza	Presentation of the open source energy modelling activities at KTH Royal Institute of Technology.	-
<b>10:15 - 10:45</b>	<b>Coffee break (30 min)</b>			
10:45 - 11:00	Introduction by the participants (A presentation with everyone's CV, brief description, introduction) - expectations of their learning outcomes	-	Brief presentation of the trainers and participants.	-
11:00 - 12:00	Lecture. <b>How on- and off-grid technologies can be combined for Energy Access for All &amp; SDG 7</b>   The role of GIS in electrification planning   Introduction to OnSSET	Andreas Sahlberg (KTH)	This lecture is meant to serve as an introduction to geospatial electrification modelling. In it the challenges at hand will be introduced and described. The importance of energy models in the planning process will be described.	-
<b>12:00 - 13:30</b>	<b>Lunch Break (1h30)</b>			
13:30 - 15:15	Lecture. <b>GIS Foundations</b>	Kartoza	Introduce the idea of SDI's Differences between Proprietary vs FOSS, ArcGIS versus QGIS, ArcSDE versus PostGIS Cost implications of FOSSGIS versus proprietary software Cloud based systems and considerations of security Review of what participants have in their home countries in terms of SDI's, Data, data sharing policies etc. The QGIS Project	-
<b>15:15 - 15:45</b>	<b>Coffee break (30 min)</b>			
15:45 - 17:00	Introduction of each country by the participants, as described in the invitation. The group of countries will be giving a presentation regarding the situation of their countries. Instructions to what to include will follow.	-	In this session the participants will present the electrification challenges in their countries. The objective is to create a common understanding between the participants that can facilitate interactions and synergies throughout the workshop.	-
17:00 - 17:05	Wrap-up and next steps for the following days activities	Andreas Sahlberg - (KTH)		-

<b>Tuesday January 15</b>				
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
09:00 -10:15	Hands on session. <b>How should the investment be distributed for universal least-cost electrification?</b> Hands on exercise using online electrification platforms	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will explore how to use geospatial electrification model scenarios to answer investment and policy questions using the Global Electrification Platform.	-
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 11:30	Lecture. <b>What are Geographic Information Systems (GIS) and what are they used for?</b> Introduction to (GIS)   Installation of QGIS and review of its main functionalities	Babak Khavari (KTH)	In depth introduction to GIS, including important functionality, terminology and the application of GIS in various fields.	-
11:30 - 12:00	Lecture. <b>What is vector data in GIS?</b>   Data types, format, basic functions	Babak Khavari (KTH)	This lecture will introduce vector data in depth. The different types of data and basic tools that apply to vectors will be presented.	-
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>How to perform basic vector data operations.</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this hands on session the participants to will get acquainted with QGIS and working with vector data.	QGIS
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Hands on session. <b>How to perform advanced vector data operations.</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this hands on session the participants to will get acquainted with QGIS and working with vector data.	QGIS
17:00 - 17:05	Wrap-up and next steps for the following activities	Andreas Sahlberg (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

<b>Wednesday January 16</b>				
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Hands on session. <b>How to perform advanced vector data operations.</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this hands on session the participants to will get acquainted with QGIS and working with vector data.	QGIS
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Lecture. <b>What is raster data in GIS?</b>   Data types, format, basic functions	Babak Khavari (KTH)	This lecture will introduce raster data in depth. The different types of data and basic tools that apply to rasters will be presented.	-
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>How to perform basic raster data operations.</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this hands on session the participants will continue to develop their GIS skills, working with raster data.	QGIS
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Hands on session. <b>How to perform advanced raster data operations.</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this hands on session the participants will continue to develop their GIS skills, working with raster data.	QGIS
17:00 - 17:05	Wrap-up and next steps for the following activities	Andreas Sahlberg & Babak Khavari (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

<b>Thursday January 17</b>				
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Hands on session. <b>How to perform advanced raster data operations.</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this hands on session the participants will continue to develop their GIS skills, working with raster data.	QGIS
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Lecture. <b>Where to find GIS data</b>   Introduction to Energydata.info, Globalwindatlas.info and Globalsolaratlas.info	Babak Khavari (KTH)	In this lecture the open GIS data platforms Energydata.info, Globalwindatlas.info and Globalsolaratlas.info will be introduced. A walkthrough of each platform will showcase their main functionalities, and how to download GIS data from them.	
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>How to transform the GIS data in order to use it in the OnSSET tool</b>   OnSSET database preparation	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will practice how to extract the processed GIS data to a CSV format, which can be used in the electrification model.	QGIS
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:15	Lecture. <b>How GIS is used in electrification analysis using the OnSSET tool</b>   The importance of GIS in the electrification analysis	Andreas Sahlberg (KTH)	This lecture will cover how the GIS data is used in the Open Source Spatial Electrification Model and the basic functions of the model.	-
17:00 - 17:05	Wrap-up and next steps for the following activities	Andreas Sahlberg & Babak Khavari (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

<b>Friday January 18</b>				
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Hands on session. <b>How to develop a national GIS database for geospatial electrification modelling</b>   Collection of GIS data	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will collect GIS data from online sources to build their own database, which can be used in the national electrification model in the following week.	QGIS
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Hands on session. <b>How to develop a national GIS database for geospatial electrification modelling</b>   Collection of GIS data	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will collect GIS data from online sources to build their own database, which can be used in the national electrification model in the following week.	QGIS
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>How to develop a national GIS database for geospatial electrification modelling</b>   Collection of GIS data	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will collect GIS data from online sources to build their own database, which can be used in the national electrification model in the following week.	-
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Hands on session. Open session related to GIS   Q&A (optional)	Andreas Sahlberg & Babak Khavari (KTH)	This will be an open session to clarify uncertainties and answer questions regarding GIS data processing	QGIS
15:45 - 17:00	Wrap-up and next steps for the following activities	Andreas Sahlberg & Babak Khavari (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

## Sessions Outline for Week 02 (21 - 25 Jan)

### Track: Track: Open Source Spatial Electrification Toolkit (OnSSET)

<b>Monday January 21</b>				
Introduction to running the OnSSET tool				
Time	Session Title	Speakers / Trainers	Summary	Tools to be used
8:30 - 9:00	<i>Summary of week one</i>			
9:00 -10:15	Lecture. <b>How the OnSSET tool is functioning</b>   Introduction to basic python concepts   Installation of Anaconda	Andreas Sahlberg (KTH)	Intro to basic Python principles (Versions, commands, IDEs). Python is the programming language of the OnSSET model.	Anaconda
10.15 - 10:45	<i>Coffee break (30 min)</i>			
10:45 -11:15	Lecture. <b>How to run the OnSSET tool</b>	Andreas Sahlberg (KTH)	This lecture will provide an overview of the modules of the OnSSET tool and how to run it using Jupyter Notebook.	-
11:15-12:00	Hands on session. <b>How to run an electrification analysis using OnSSET</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this Hands on session the participants will use the CSV file generated during the previous week to run the OnSSET model (Jupyter Notebook version). This includes i) Data acquisition and insertion to the electrification model ii) Scenario development and sensitivity analysis iii) Visualization of key results	Anaconda, OnSSET
12:00 - 13:30	<i>Lunch Break (1h30)</i>			
13:30-15:15	Hands on session. <b>How to run an electrification analysis using OnSSET</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this Hands on session the participants will use the CSV file generated during the previous week to run the OnSSET model (Jupyter Notebook version).This includes i) Data acquisition and insertion to the electrification model ii) Scenario development and sensitivity analysis iii) Visualization of key results	Anaconda, OnSSET
15:15 - 15:45	<i>Coffee break (30 min)</i>			
15:45 - 16:15	Lecture. <b>What are common error messages</b>	Andreas Sahlberg (KTH)	In this lecture common Python errors while running the code will be covered, as well as how to read the error messages and find what may be causing it.	-
16:15 - 17:00	Hands on session. <b>How to run an electrification analysis using OnSSET</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this Hands on session the participants will use the CSV file generated during the previous week to run the OnSSET model (Jupyter Notebook version).This includes i) Data acquisition and insertion to the electrification model ii) Scenario development and sensitivity analysis iii) Visualization of key results	Anaconda, OnSSET
17:00 - 17:05	Wrap-up and next steps for the following days activities	Andreas Sahlberg - KTH Royal Institute of Technology (KTH)		
17:05	<i>End of activities</i>			

<b>Tuesday January 22</b>				
<b>Scenario analysis using the OnSSET tool</b>				
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Lecture. <b>How to find robust answers in electrification modelling</b>   Scenario development and sensitivity analysis.	Andreas Sahlberg (KTH)	This lecture covers the concept of scenario and sensitivity analysis to provide robust strategies and answer policy and investment questions.	-
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Hands on session. <b>What is the investment cost required to meet SDG7?</b>   Scenario analysis using the OnSSET tool.	Andreas Sahlberg & Babak Khavari (KTH)	In this Hands on session the participants will practice scenario analysis for their country using OnSSET. This includes customizing socio- and techno-economic variables. This will be a challenge-based approach where the participants will try to answer different policy- and investment questions using the tool.	Anaconda, OnSSET
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>What is the investment cost required to meet SDG7?</b>   Scenario analysis using the OnSSET tool.	Andreas Sahlberg & Babak Khavari (KTH)	In this Hands on session the participants will practice scenario analysis for their country using OnSSET. This includes customizing socio- and techno-economic variables. This will be a challenge-based approach where the participants will try to answer different policy- and investment questions using the tool.	Anaconda, OnSSET
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Hands on session. <b>What is the investment cost required to meet SDG7?</b>   Scenario analysis using the OnSSET tool.	Andreas Sahlberg & Babak Khavari (KTH)	In this Hands on session the participants will practice scenario analysis for their country using OnSSET. This includes customizing socio- and techno-economic variables. This will be a challenge-based approach where the participants will try to answer different policy- and investment questions using the tool.	Anaconda, OnSSET
17:00 - 17:05	Wrap-up and next steps for the following activities	Andreas Sahlberg (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			



<b>Wednesday January 23</b>		<b>OnSSET methodology and OnSSET country models</b>		
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Lecture. <b>How the OnSSET tool calculates the least-cost technology - Part 1</b>   A deeper look at the methodology and modules of the OnSSET tool.	Andreas Sahlberg (KTH)	This lecture goes into detail on the functions of OnSSET, how the LCOE is calculated for the different technology configurations and how the model arrives at the least-cost technology from start to end.	-
<b>10:15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Lecture. <b>How the OnSSET tool calculates the least-cost technology - Part 2</b>   A deeper look at the methodology and modules of the OnSSET tool.	Andreas Sahlberg (KTH)	This lecture goes into detail on the functions of OnSSET, how the LCOE is calculated for the different technology configurations and how the model arrives at the least-cost technology from start to end.	-
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>How to develop an electrification model tailored to a specific country</b>   National OnSSET model - Data collection, calibration, scenario runs and analysis.	Andreas Sahlberg & Babak Khavari (KTH)	Using the information and trainings from the previous Hands on sessions and lectures, the participants practice their skills developing electrification studies and answering policy- and investment questions for their own countries. This comprises collection and modification of GIS data, collection of socio- and techno- economic data, scenario development and vizualisation and post-analysis.	Anaconda, OnSSET, QGIS
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Hands on session. <b>How to develop an electrification model tailored to a specific country</b>   National OnSSET model - Data collection, calibration, scenario runs and analysis.	Andreas Sahlberg & Babak Khavari (KTH)	Using the information and trainings from the previous Hands on sessions and lectures, the participants practice their skills developing electrification studies and answering policy- and investment questions for their own countries. This comprises collection and modification of GIS data, collection of socio- and techno- economic data, scenario development and vizualisation and post-analysis.	Anaconda, OnSSET, QGIS
17:15 - 17:05	Wrap-up and next steps for the following activities	Andreas Sahlberg (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

<b>Thursday January 24</b>		<b>OnSSET - Working on country models</b>		
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Hands on session. <b>How to develop an electrification model tailored to a specific country</b>   National OnSSET model - Data collection, calibration, scenario runs and analysis.	Andreas Sahlberg & Babak Khavari (KTH)	Using the information and trainings from the previous Hands on sessions and lectures, the participants practice their skills developing electrification studies and answering policy- and investment questions for their own countries. This comprises collection and modification of GIS data, collection of socio- and techno- economic data, scenario development and visualization and post-analysis.	Anaconda, OnSSET, QGIS
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Hands on session. <b>How to develop an electrification model tailored to a specific country</b>   National OnSSET model - Data collection, calibration, scenario runs and analysis.	Andreas Sahlberg & Babak Khavari (KTH)	Using the information and trainings from the previous Hands on sessions and lectures, the participants practice their skills developing electrification studies and answering policy- and investment questions for their own countries. This comprises collection and modification of GIS data, collection of socio- and techno- economic data, scenario development and visualization and post-analysis.	Anaconda, OnSSET, QGIS
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>How to develop an electrification model tailored to a specific country</b>   National OnSSET model - Data collection, calibration, scenario runs and analysis.	Andreas Sahlberg & Babak Khavari (KTH)	Using the information and trainings from the previous Hands on sessions and lectures, the participants practice their skills developing electrification studies and answering policy- and investment questions for their own countries. This comprises collection and modification of GIS data, collection of socio- and techno- economic data, scenario development and visualization and post-analysis.	Anaconda, OnSSET, QGIS
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Lecture. <b>How to present the results to different audiences</b>   Advanced visualization in OnSSET	Babak Khavari (KTH)	In this lecture the most important aspects to cover in a (PPT) presentation will be examined, and how this may change depending on the audience. It also presents more advanced visualization techniques in OnSSET. This includes more customized data visualization depending on multiple conditions, as well as a method to easily generate maps with the standard OnSSET results.	-
17:00 - 17:05	Wrap-up and next steps for the following activities	Andreas Sahlberg (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

<b>Friday January 25</b>		<b>OnSSET - Working on country models</b>		
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Hands on session. <b>How to develop an electrification model tailored to a specific country</b>   National OnSSET model - Data collection, calibration, scenario runs and analysis.	Andreas Sahlberg & Babak Khavari (KTH)	Using the information and trainings from the previous Hands on sessions and lectures, the participants practice their skills developing electrification studies and answering policy- and investment questions for their own countries. This comprises collection and modification of GIS data, collection of socio- and techno- economic data, scenario development and vizualisation and post-analysis.	Anaconda, OnSSET, QGIS
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Hands on session. <b>How to develop an electrification model tailored to a specific country</b>   National OnSSET model - Data collection, calibration, scenario runs and analysis.	Andreas Sahlberg & Babak Khavari (KTH)	Using the information and trainings from the previous Hands on sessions and lectures, the participants practice their skills developing electrification studies and answering policy- and investment questions for their own countries. This comprises collection and modification of GIS data, collection of socio- and techno- economic data, scenario development and vizualisation and post-analysis.	Anaconda, OnSSET, QGIS
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Hands on session. <b>How to develop an electrification model tailored to a specific country and present the results</b>   Work on the country models & preparation of presentations	Andreas Sahlberg & Babak Khavari - KTH Royal Institute of Technology (KTH)	In this session the participants will continue their work on the national OnSSET model, and prepare a presentation for the last day.	Anaconda, OnSSET, QGIS
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Hands on session. <b>How to develop an electrification model tailored to a specific country and present the results</b>   Work on the country models & preparation of presentations	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will continue their work on the national OnSSET model, and prepare a presentation for the last day.	Anaconda, OnSSET, QGIS
17:00 - 17:05	Wrap-up and next steps for the following weeks activities	Andreas Sahlberg & Babak Khavari (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

## Sessions Outline for Week 03 (28 - 29 Jan)

### Track: Track: Open Source Spatial Electrification Toolkit (OnSSET)

<b>Monday January 28</b>				
<b>Presentation of OnSSET country models</b>				
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:15	Hands on session. <b>Final presentation preparations.</b>	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants may do any final preparations for the presentations if necessary.	-
<b>10.15 - 10:45</b>	<b><i>Coffee break (30 min)</i></b>			
10:45 - 12:00	Presentation by participants	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will present their results. Each group will be given 10 minutes for the presentation, followed by 5 minutes for questions and feedback.	-
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Presentation by participants	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will present their results. Each group will be given 10 minutes for the presentation, followed by 5 minutes for questions and feedback.	-
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Presentation by participants	Andreas Sahlberg & Babak Khavari (KTH)	In this session the participants will present their results. Each group will be given 10 minutes for the presentation, followed by 5 minutes for questions and feedback.	-
17:00 - 17:05	Wrap-up and next steps for the following days activities	Andreas Sahlberg (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			

<b>Tuesday January 29</b>		<b>Energy planning and digitization</b>		
<b>Time</b>	<b>Session Title</b>	<b>Speakers / Trainers</b>	<b>Summary</b>	<b>Tools to be used</b>
<b>8:30 - 9:00</b>	<b><i>Welcoming</i></b>			
9:00 - 10:30	Lecture. TBD	World Bank / FEEM	Additional lectures relating to energy planning and digitization	-
<b>10.30 - 11:00</b>	<b><i>Coffee break (30 min)</i></b>			
11:00 - 12:00	Lecture. TBD	World Bank / FEEM	Additional lectures relating to energy planning and digitization	-
<b>12:00 - 13:30</b>	<b><i>Lunch Break (1h30)</i></b>			
13:30 -15:15	Lecture. TBD	World Bank / FEEM	Additional lectures relating to energy planning and digitization	-
<b>15:15 - 15:45</b>	<b><i>Coffee break (30 min)</i></b>			
15:45 - 17:00	Lecture. TBD	World Bank / FEEM	Additional lectures relating to energy planning and digitization	-
17:00 - 17:05	Wrap-up and next steps for the following activities	Andreas Sahlberg (KTH)		-
<b>17:05</b>	<b><i>End of activities</i></b>			