

SLOVENIA invite SEERC Members to PANEL DISCUSSION

**MARIBOR,
May 22, 2017 at 17.30
SEERC PANEL**

First day

		HALL 1 CIGRE	HALL 2 CIGRE	HALL 3 CIRED	HALL 4 PANELS
MONDAY, 22 nd May 2017	09.00 - 10.30	CIGRE SC C3 System Environmental Performance	CIGRE SC D2 Information Systems and Telecommunication	CIRE SC 1 Network Components	11.00 - 13.00 PANEL 1 NEW TECHNOLOGIES Storages, FACTS, Breakers with new gases, New materials for conductors
	10.30 - 11.00		NETWORKING BREAK, REFRESMENTS		
	11.00 - 13.00	CIGRE SC B5 Protection and Automation	CIGRE SC D2 Information Systems and Telecommunication	CIRED SC 5 Planning of Power Distribution Systems	
	13.00 - 13.30		LUNCH BREAK - GOLD SPONSOR EVENT 1		
	15.00 - 17.00	OPENING CEREMONY INVITED SPEAKERS AND AWARDS			
	17.00 - 17.30		NETWORKING BREAK, REFRESMENTS – COCTAIL 1		
	17.30 - 19.30	Special Subject: (SEERC PANEL) TECHNICAL CHALLENGES FOR REGIONAL POWER SYSTEMS CONCERNING TO LARGE PENETRATION OF RES			
	19.30 - 22.00		GREETING COCTAIL ON THE SPONSOR'S AREA		

Presentation from SEERC member system: 20 - 25 min, only ppt, present situation / plans; Remarks on EU Regulation 2016/631 (14.4.2016) establishing a *network code on requirements for grid connection of generators*.

SLOVENIA INVITE YOU

Prague, March 15, 2017 Kresimir Bakic

Second day

TUESDAY, 23 rd May 2017	08.30 - 10.30	CIGRE SC B2 Overhead lines	CIGRE SC C2 System Operation and Control	CIREN SC 2 Power Quality and EMC	CIGRE SC B4 HVDC and Power Electronics
	10.30 - 11.00	NETWORKING BREAK, REFRESHMENTS - GOLD SPONSOR EVENT 2			10:30 - 13:00
	11.00 - 13.00	CIGRE SC B2 Overhead lines	CIGRE SC C2 System Operation and Control	CIREN SC 2 Power Quality and EMC	PANEL 2 Student's Competition for Best Paper
	13.00 - 14.30	LUNCH BREAK			
	14.30 - 16.30	CIGRE SC C5 Electricity Markets and Regulation	CIGRE SC B3 Substations	CIREN SC 3 Operation Control and Protection	15.00-16:30 PANEL 3 ONGOING EU PROJECTS
	16.30 - 17.00	NETWORKING BREAK, REFRESHMENTS GOLD SPONSOR EVENT 3			(Presentation of selected international Slovenian projects)
	17.00 - 19.00	CIGRE SC C5 Electricity Markets and Regulation	CIGRE SC B1 Insulated Cables	CIREN SC 3 Operation Control and Protection	ELES/EL/SODO
	19.00 - 20.00	Assembly of Members – Slovenian Association of CIGRE and CIREN – Members only			
	20.30	GALA DINNER WITH MUSIC			

GALA DINNER at the snow stadium

SLOVENIA INVITE YOU

Prague, March 15, 2017 Kresimir Bakic

Last day

WEDNESDAY, 24 th May 2017	08.30 - 10.30	CIGRE SC C1 System Development and Economics	CIGRE SC A1 Rotating Electrical Machines/ Power plants	CIREN SC 4 Distributed Energy resources and Active demand	CIGRE A2/D1/A3 Transformers, materials, HV Equipment	
	10.30 - 11.00	NETWORKING BREAK,REFRESHMENTS GOLD SPONSOR EVENT 4				242 papers 3 Panels 1 Round table
	11.00 - 13.00	CIGRE SC C1 System Development and Economics	CIGRE SC A1 Rotating Electrical Machines/ Power plants	CIREN SC 4 Distributed Energy resources and Active demand		
	13.00 - 14.30	LUNCH BREAK				
	14.30 - 16.30	CIGRE SC D3 SMART GRIDS Strategy	CIGRE SC C4 System Technical Performance	CIREN SC 6 Challenges for DSO's in new business environment		
	16.30 - 19.00	FINAL SESSION				



WELCOME TO MARIBOR



HABAKUK hotel Spa – famous skiing centre

SLOVENIA invite SEERC Members on C4 Colloquium

*International Colloquium on
Lightning and Power Systems
Ljubljana, 18th–20th Sept. 2017*



Papers

102 **Bečan Miha:** A challenging case of overhead transmission line lighting performance improvement by means of line surge arrester installing

103 **Skočir Sandi:** Protection of grazing livestock against lightning

104 **Warmi Yusreni, Michishita Koji:** Lightning performance of 150 kV Transmission Lines in West Sumatra in Indonesia

105 **Paul Christian, Heidler Fridolin:** Analysis of superimposed oscillations on lightning currents caused by the influence of high building structures

106 **Svancar Martin, Kocis Lubomir, Spurny Petr, Vranova Lidmila:** Automatic System for Evaluation of Lightning Effects on Transmission System using Euclid Database and ARO 112

107 **Sadovic Tarik, Mesić Miroslav, Xemard Alain, Marin** NEW UPGRADES AND CHALLENGES FOR THE STON - TRANSMISSION LINE LIGHTNING MONITORING PROJ 113

108 **Schulz Wolfgang, Poelman Dieter, Kaltenböck Rudo Goudenhoofd Edouard, Delobbe Laurent:** Outliers in the EUCLID network 114

109 **Schwalt Lukas, Pack Stephan, Schulz Wolfgang, Diendor** NUMBER OF SINGLE STROKE FLASHES IN THE ALPINE DETERMINED WITH A VIDEO AND FIELD RECORDING 116

110 **SAITO Mikiyoshi, MIKI Toru, SHINDO Takatoshi, ISHII M SONEHARA Takeo:** Characteristics of upward connecting leaders initiated from Tokyo Skytree 118

111 **Ribič Janez, Pihler Jože, Maruša Robert:** Analysis of the potential rise in the earth of transmission distribution systems grounding



Mesić Miroslav, Piliškić Silvia, Ćurin Luka: Application and Performance of the Line Surge Arresters of the 110 kV Overhead Lines of the Croatian Transmission System

Matsui Michihiro, Michishita Koji: Influence on the location accuracy of lightning stroke position due to difference in conductivity between sea and land

Fran Bojan, Uglešić Ivo, Mesić Miroslav, Ivanković Igor: Improving and advance control, maintenance and planning of transmission power system with lightning location systems data **Voncina Vid:** Remote Surge Arrester Condition Indicator

Uglesic Ivo, Milardić Viktor, Mesic Miroslav, Klobas Zavis, Puharic Milan: The study of improving the lightning performance of the double circuit 220 kV line Plomin-Pehlin

Jevnikar Klemen, Milev Goran, Djurica Vladimir: Comparison of lightning strike specific energy calculation between SIST EN 62305-1 standard and IEC TR 60071-4 technical report using Rise-Time and Peak-To-Zero time measured by Lightning Localization System

- 119 **ROUSSEAU Alain, Guthrie Mitchell:** Risk assessment of lightning-induced surges on PV Systems
- 120 **Yamaguchi Hiroshi, Suzuki, Tsutomu, Suzuki Takatsugu, Shimizu, Yasuhiro, Tsuge Kenji:** Field experience with externally gapped line surge arrester (EGLA) for lightning protection of 66kV and 154kV overhead transmission lines
- 121 **Teklić, Ljupko, Filipović-Grčić Božidar, Jerčić Roko:** Detection of high impedance faults in power transmission network with nonlinear loads using artificial neural networks
- 122 **Sobolewski Konrad:** New technologies used in lightning protection systems
- 123 **Loboda Marek, Lenarczyk Krzysztof:** Lightning performance of 220 kV and 400 kV overhead power transmission lines in Poland in years 2010–2016
- 124 **Jurišić Bruno, Poujade Paul, Xemard, Alain, Moreau Olivier, Uglešić Ivo, Lalléchère, Sébastien, Paladian Françoise:** Transformers modelling for lightning studies
- 125 **Tóth Zoltán, Kiss István, Németh Bálint:** Effect of near wind turbines on the risk of lightning stroke on overhead lines
- 126 **Goertz Max, Wenig Simon, Kahl, Matthias, Beckler Simon, Christian Jochen, Suriyah Michael, Leibfried Thomas:** Lightning Performance of HVDC Mixed Overhead-Cable Lines
- 127 **Halász Bálint G., Tóth Zoltán, Németh Bálint, Göcsei Gábor, Kiss István:** Lightning protection of medium voltage overhead lines
- 128 **Ećimović Vlatko, Petrović Ivica, Blažević, Danko:** Implementation of software application for lightning strikes locating within analysis of power transmission network elements fault emergence
- 129 **Musil Ladislav, Svancar Martin, Spurný Petr, Ovesný Radek:** Experiences Gained during Development of Methodology for Measuring Ground Resistance of High Voltage Transmission Lines Towers
- 130 **Pack Stephan, Wurzer Georg, Hribernik Christopher:** Transient voltage measurements in correlation with control records of a 110-kV-transmission line
- 131 **Trlep Mladen, Jesenik Marko, Beković Miloš, Hamler Anton:** Transient Analysis of a Grounding System as Time-Dependent Nonlinear Problem
- 132 **Tiso Lobato André, Cooray Vernon, Arevalo Liliana:** Striking distance of common buildings evaluated with a leader inception model
- 133 **Pedeboy Stephane, Bernardi Marina, Schulz Wolfgang, Rousseau Alain:** On the occurrence of intense lightning discharges in Western Europe
- 134 **Tossani Fabio, Borghetti Alberto, Napolitano Fabio, Piantini Alexandre, Nucci Carlo Alberto:** Lightning Performance of Overhead Power Distribution Lines in Urban Areas

WELCOME IN LJUBLJANA:

- Paper presentation
- Tutorials
- Colloquium fee: 380 Euros



Elektroenergetsko prenosno omrežje ELES-a:

Dolžina daljnovodov in kablovodov:	2.682 km (od tega 11,9 km kablovodov)
400 kV	508 km
220 kV	328 km
110 kV	2.618 km (od tega 1.842 km ELES)
Število RTP	24
Število transformatorjev	27 (5 na 110 kV, 10 na 220 kV, 11 na 400 kV)
Moč transformatorjev	5.936 MVA
Število prečnih transformatorjev	1
Moč prečnega transformatorja	1.200 MVA
Optično omrežje:	1.350 km

SLOVENIA 2015

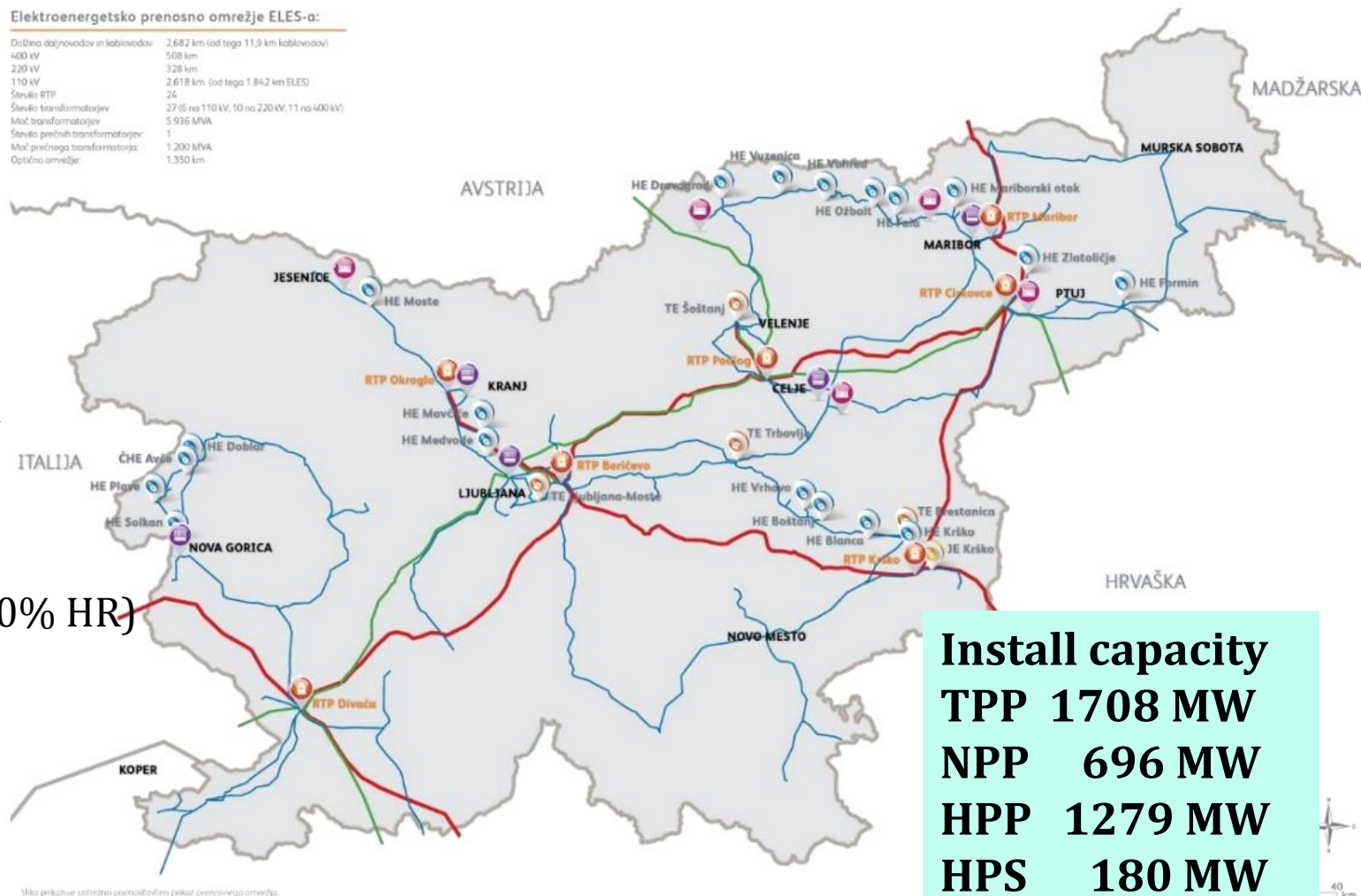
Consume: 13041 GWh

Losses T&D: 864 GWh

Peak load: 2052 MW

Annual production:

- **TPP 4012 GWh**
- **NPP 5370 GWh (50% HR)**
- **HPP 4056 GWh**
- **HPS 282 GWh**
- **PV 243 GWh**
- **WP 6 GWh**
- **Other 284 GWh**
- **Import 1750 GWh.**



Install capacity

TPP	1708 MW
NPP	696 MW
HPP	1279 MW
HPS	180 MW
Wind	6 MW
PV	265 MW
Other	64 MW
Total	4.198 MW

SLOVENIA INVITE YOU

Prague, March 15, 2017 Kresimir Bakic