

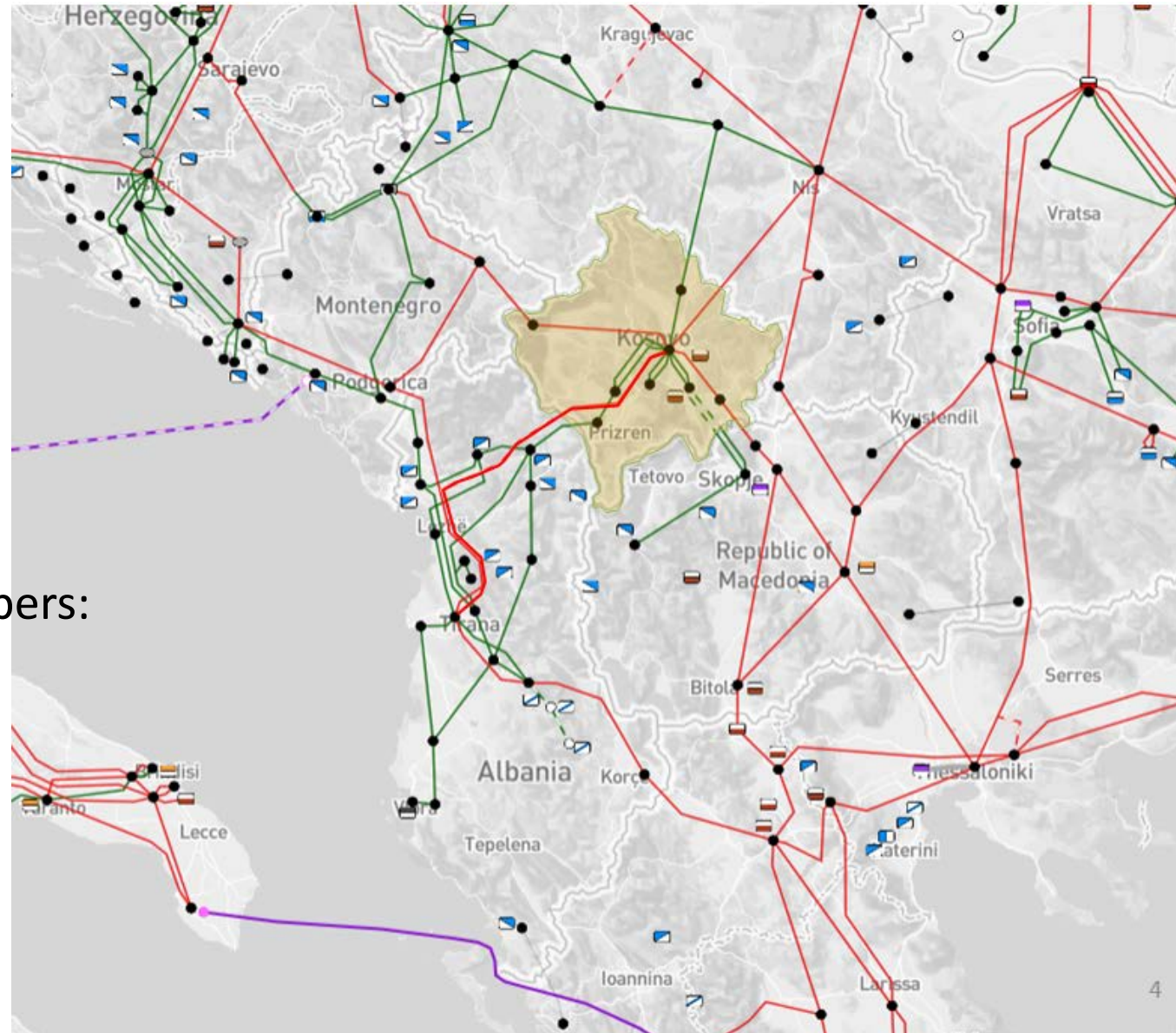


The Kosovo Electric Power System 2017

Basic facts

- Area: 10,908 km²
- Population: 1.816 million
- Number of electricity consumers: 400000 (te verifikohet KEDS)
- Number of TSOs: 1
- Number of DSOs: 1
- Peak load in 2017: 1161 MW
- Electricity consumption 5781GWh

The map of Kosovo Power System in regional network and interconnection lines



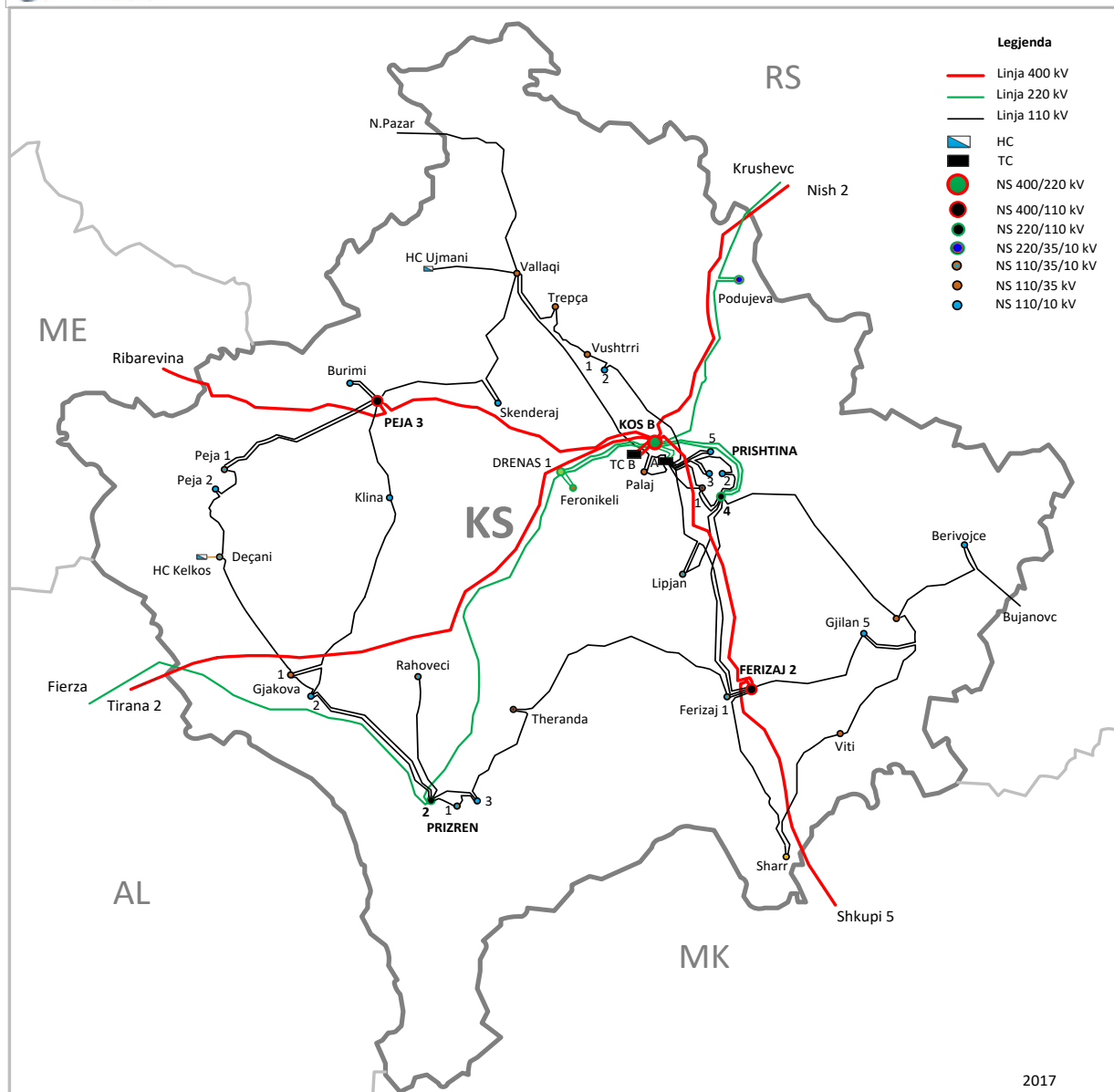
Interconnectors with:

- Montenegro
- Macedonia
- Serbia and
- Albania

Interconnection numbers:

- 400 kV = 4
- 220 kV = 2
- 110 kV = 2

Total = 8



Transmission lines

HV Lines in KOSTT	Line length km
400 kV	279.7
220 kV	231.8
110 kV	841.8

Total line length = 1353.4 km

Power Transformers and SS

Autotransformers	3750 MVA
Transformers	2080 MVA
Main HV Substations	6
Load Substations	28

Peak demand last three years

Y-2015	Y-2016	Y-2017
1129 MW	1160 MW	1161 MW

Electricity demand

Y-2015	Y-2016	Y-2017
5663 GWh	5426 GWh	5781 GWh

Increase tendency

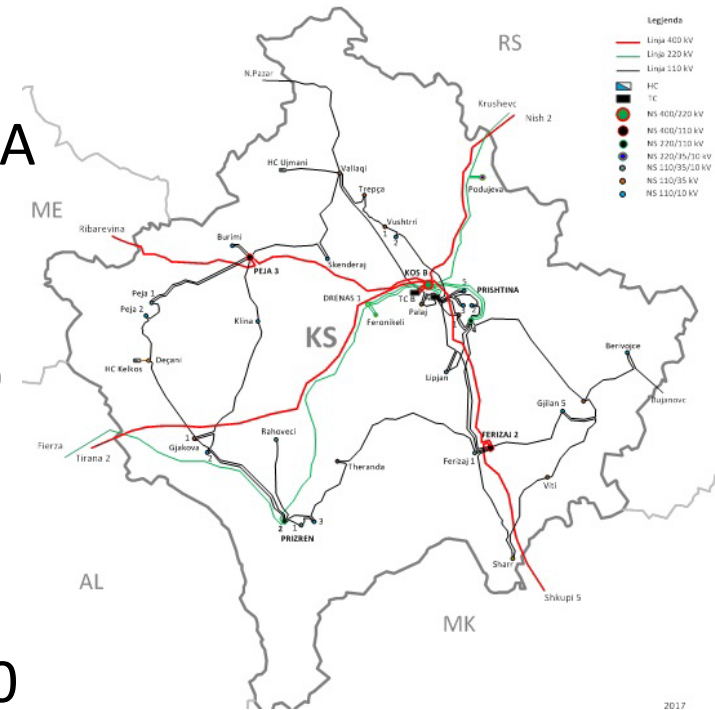


Structure of electrical power system



- KOSTT (Kosovo Transmission System and Market Operator)
- KEDS (Kosovo Energy Distribution Services)
- KEK (Energy Corporation of Kosovo - Public Supplier of Electricity/generation and mines)
- KESCO (Kosovo Electricity Supply Company)
- ERO (Energy Regulatory Office)
- Small producers (HPP, Wind, Solar)

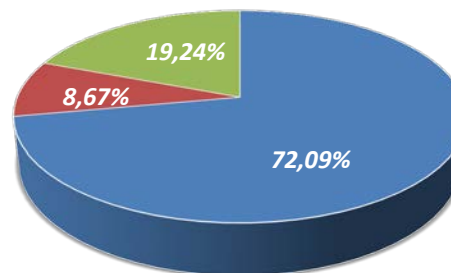
- State owned (Kosovo assembly)
- Natural Monopoly , Regulated tariffs by NRA
 - TSO license and MO License
- Develops, Maintain and Operates Transmission Network (400, 220 and 110 kV)
- Owns
 - 1353 km High voltage lines and 35 Sub Station
- More the 270 Million Euro investment in 10 Years
- Manages RES energy found
- 360 employees



Installed Capacities	TPP Coal	HPP	Wind	Solar	Run of river	TOTAL RES	TOTAL GENERATION
MW	1200	43	0	0.6	31.32	31.92	1274.92

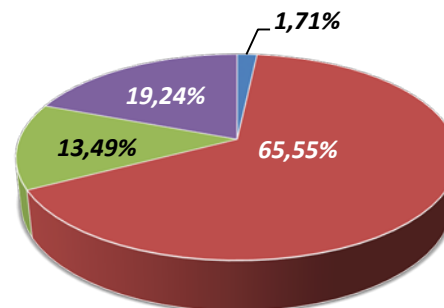
Transmission Network Energy Output (Y 2017)

- Demand (5781 GWh)
- Net Export (1044 GWh)
- Transit (1543 GWh)



Transmission Network Energy Input (Y 2017)

- Hydro Power Plants (137.3 GWh)
- Thermal Power Plants (5257 GWh)
- Net Import (1082 GWh)
- Transit (1543 GWh)



Consumption per customer groups

- Industry 26.6%
- Commercial 14.4%
- Households 56%
- Other consumption 3%

(source: Agency for Statistics - 2017)

Integration of RES in the transmission system

Support factors for RES Integration

Reliable and secured transmission network

Priority in dispatching

KOSTT manages RES Found through Market Operator

Feeding Tariffs (for 150 MW wind, 240MW HPP, 14 MW Biomass, 10 MW Solar - 12 years)

Market integration with Albania and next step integration in regional market

Constrains factors for RES Integration:

Lack of power reserves,

Inflexible TPP units and age and technical condition of existing TPP

no energy storage facilities or flexible units such a pump storage units

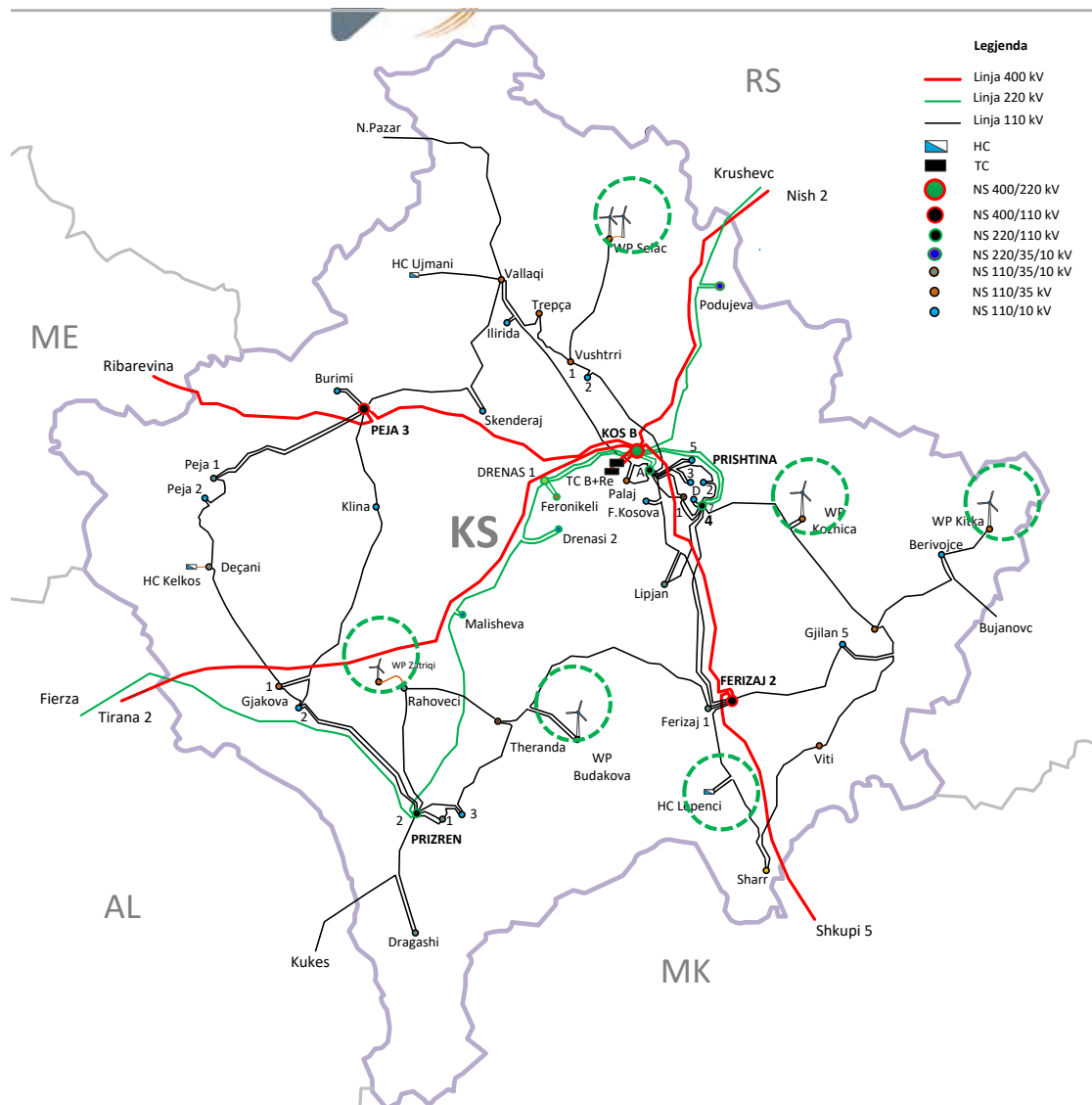
Connection application up to the date:

-Wind = 360 MW,

-Solar= 9 MW,

-HPP=10 MW

Integration of RES in the transmission system



RES application for connection in KOSTT:

- **WP KITKA**, 32.5 MW (under construction/2018 in operation)
- **WP SELACI** 105 MW (in process/ Connection agreement)
- **WP Koznica** 34.5 MW (in process/ Connection agreement)
- **WP Budakova** 46 MW in process/connection offer)
- **WP Zatriqi** 64.8 MW in process/connection offer
- **WP Kamenica 1 and 2**, 76.8 MW(In process/connection offer)
- **HPP Lepenci** 10 MW/ under construction)
- **SOLAR PARK 9 MW** “Bejta Commerce” (process/connection offer)

- Deregulation of Wholesale market
- Retail market deregulation in phases
- Generators to offer their capacities in open market to all market participants
- MO will manage RES found and will pay RES generators
- Market based purchase of Grid Loses
- Organization of Day Ahead market

Based on law obligation ERO issued Guidelines for market opening starting from 1st of April 2017

Balancing mechanism (BM)

- Operates as a contract between TSO and Trading Parties for delivery of power (not energy)
 - Payment is for energy delivered with that power.
- From 1st October 2016- 31st May 2017 was implemented as dry run with no financial impact.
- From 1st June 2017 BM is in real operation
- There are lack of national balancing reserves
- Procedures for cross border procurement of services are developed .

RES Energy Found

- From 1st Jun 2017 KOSTT MO manages RES energy Found
- RES Generator Sells to MO their production regulated incentive price (feed-in tariff)
- MO Sells to Suppliers proportionally to their demand with referent market price.
- MO charges Supplier to cover price difference RES tariff
- RES generator are charged for 25% of imbalances for both direction (being long or short)
- RES generator nominates their production at D-1. they have the right to re nominate every three hours in advance

Grid Losses

- From 1st April 2017 Transmission and distribution Grid losses are purchased at deregulated price in the open market
- Part of grid losses are purchased from KEK generation with contracted Price
- KOSTT signed with cross border traders who are operating in Kosovo market the framework contract for purchasing grid losses
- From 1st September 2017 KOSTT is organizing auction on D-1 for purchasing part of losses not covered by KEK generation

Establishment Common Market KS-AL

- As first step common Power exchange with Albania
- KOSTT will be shareholder of ALPX
- Expected to joint on 2019
- Adaptation of regulation and Market design and market is needed
- Stepwise volume of energy will be traded through ALPX
- Business plan and decision are in process recently for approval

- Common market of Kosovo and Albania in line with EU target model – objective of Energy community
- a single bidding zone in all markets' timeframes
 - interconnections KS-AL will be considered as internal lines
 - No capacity booking or scheduling requirement
- would be coupled with other zones on the day ahead and intraday markets
- cross-border capacities with other zones would be allocated in line with the Forward Network Code
- The generation mix would allow generators to optimize their generation portfolio
- will link a hydro-based system of Albania with a lignite-based system of Kosovo