

*1<sup>st</sup> PECE/PMI Electricity Group Meeting*

*10<sup>th</sup> October, Energy Community Secretariat*

**400 kV interconnection  
Bitola (MK) – Elbasan (AL)  
& 400/110 kV SS Ohrid**

**- project status and progress -**

A watercolor illustration of a high-voltage power line tower. The tower is a complex lattice structure, rendered in black ink with some purple and pink washes. It stands on a rocky, uneven ground. In the background, there are rolling hills or mountains, also rendered with watercolor washes in shades of purple, pink, and green. The overall style is artistic and sketchy.

**MEPCO**

# regional aspects of the project

- Implementation of the 400 kV interconnection Bitola (MK) – Elbasan(AL) is planned to achieve the following regional targets:
  - ▲ Establish the 400 kV Ring Albania - Macedonia - Greece
  - ▲ Increase transmission capacity of the network to support the forecasted load growth, transit of electricity and connection of new generation facilities in Albania and in the Republic of Macedonia and generally in the Balkans Region
  - ▲ Improve the reliability of the regional network, security of supply and stability of the transmission system
  - ▲ Reduce the technical losses in the transmission system
  - ▲ Improve the quality of electricity supply (normalize the voltage levels, stabilize the load flow and the frequency fluctuations, etc.)
  - ▲ Support the developing of a regional electricity market in South East Europe and create trading opportunities with Italy

# description of the project

## EnCS and ENTSO-E reference

- ▲ PECI/PMI list: EI\_13
- ▲ TYNDP: Project 147 (South Balkan CSE9), Investment 239

## 400 kV interconnection will connect 400/110 kV SS Bitola 2 (MK) and 400 kV SS Elbasan 3 (AL) with an in/out connection of the new 400/110 kV SS Ohrid

## Macedonian part of the project include construction of:

- ▲ New 400 kV transmission line Bitola 2 – MK/AL border,
- ▲ Extension of 400 kV SS Bitola 2 to connect 400 kV transmission line,
- ▲ New 400/110 kV SS Ohrid,
- ▲ Unbundling and redirecting existing 110 kV lines in Ohrid area.

# map and OHL routing



# technical parameters, MK part

Nominal voltage level:	400 kV
Length	95 km
CAPEX	49 MEUR (37 MEUR loan + 12 MEUR grant)
Conductors:	ACSR 3x2x490/65 mm <sup>2</sup>
Capacity	Rated power: 1330 MVA NTC: MK -> AL 1000 MW / AL -> MK 600 MW
Earthwires:	1 <sup>st</sup> : ACS (Alumoweld) type SA1A 126.1 mm <sup>2</sup> 2 <sup>nd</sup> : OPGW 15 mm, 48 monomode fibres + 48 multimode fibres, and stranding part AA/ACS
Insulators:	Glass cap and pin U 160 BS (280/146)
Towers:	Single circuit, steel lattice "Y" shape with two earthwires
Number of towers:	269 (SS Bitola2 – MK/AL border) <ul style="list-style-type: none"><li>- Suspension: 190</li><li>- Angle-tension: 79</li><li>- Average span: 358 m</li></ul>
Line route altitude:	550 m - 1200 m

# completed tasks

- Feasibility Study – January 2013
- ESIA Study – January 2013
- Ministry of environmental and physical planning approved the ESIA – July 2015
- Financial agreement with EBRD – December 2015
  - ▲ Loan: 37 MEUR
  - ▲ Grant: 12 MEUR
- ESIA additional investigations: impact of the project on birds and bats – May 2017
- Design and tender – in preparation

# next steps

- ④ Detail design, final & reviewed version – expected to be delivered
- ④ Draft tender documents – expected to be delivered
- ④ Application for permit for construction – after completion of detail design
- ④ Land acquisitions – in 2018
- ④ Tendering – 2018
- ④ Construction – 2018/2019