Welcome address

Professor Nikola Čavlina, Ph.D
Welcome to Zagreb online Euro-CASE Annual Conference:

“Dealing with Challenges of the European Energy Transition”
„Dealing with Challenges ...”

Euro-CASE Board Meeting Oslo
October 2019

Euro-CASE Annual Conference
8th June 2020, Zagreb
„Dealing with Challenges ...” (2)

Euro-CASE and HATZ, March 2020

Coronavirus disease (COVID-19)

Euro-CASE Annual Conference
Autumn 2020, Zagreb
„Dealing with Challenges ...” (3)

Euro-CASE and HATZ, September 2020

Coronavirus disease (COVID-19)

Euro-CASE Online Annual Conference 20th November 2020
Zagreb in cloud
170 registered participants

21 Academies out of 23
Goals and challenges at the beginning of the power system development at the end of the 19th century

The goals were:

- large-scale generations and
- transmission of electricity to the consumers.

The challenges were:

- conceptually sound project,
- technically feasible and
- economically practical.
• In the 1896 - It was with Tesla's patents that George Westinghouse won the contract to construct the generators at Niagara Falls (ten 5,000 hp AC generators). The AC system and transformers allowed for long-distance transmission of power, which a DC system could not achieve. The current at 10,000volts was then transmitted through bare copper cable (on thousands of insulated wooden poles) to Buffalo, New York, 26 miles away.

• In these successful first of a kind project, we can clearly recognised: Invention, Entrepreneur, Industry, Investor.

• In the 1985 - the first AC electric power system in Croatia and one of first multiphase AC systems in the world. That time Croatia was a part of Austro-Hungarian Empire.

• HPP Jaruga 1 (42 Hz, 2x550 kW). The transmission line from the HPP to the City of Šibenik (11.5 km) to the municipal distribution grid 3,000/110V included six transforming stations.

• The system supplied 340 street lights and some electrified houses in the town.
... 125 years later

- **Electricity** has become a **basic need** in our lives. We have become completely dependent on electricity.
- **Electricity consumption** is **constantly growing**. Requirements for electricity supply become very high: reliability, security, affordability, sustainability, ...
- The pressure on the **environment** has become **unsustainably high**
- **Paris Agreement** temperature goal

**European Energy Transition**

- **The goal** has been set and it is very ambitious, to be **climate neutral by 2050**

**The challenges:**
- **Not only technical** and economical, but also environmental, social, political, legal..
- **No unique solutions**
- **The paths** to the goal **may be different**.
I wish you a fruitful Euro-CASE online conference!