



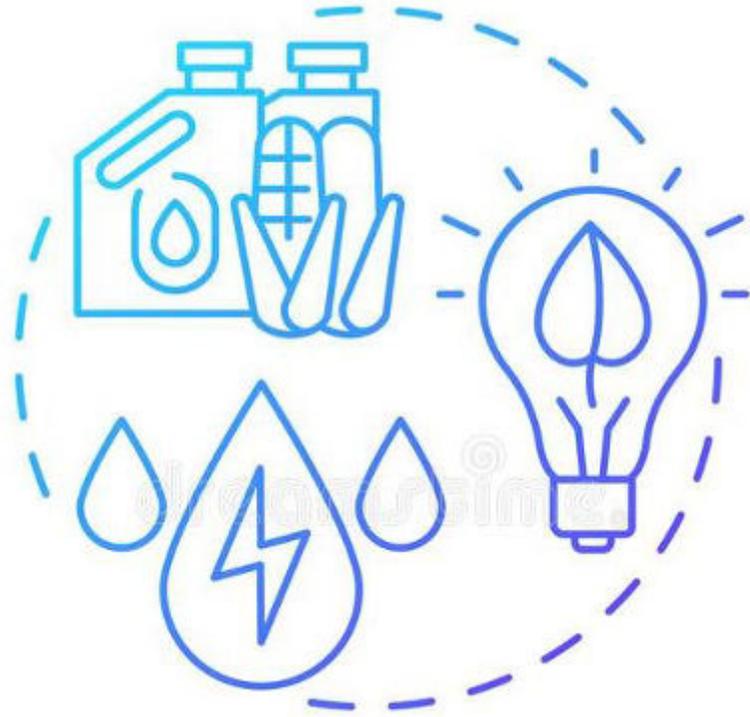
# Renewable diplomacy vs. Energy transition

## The Case of Kosovo

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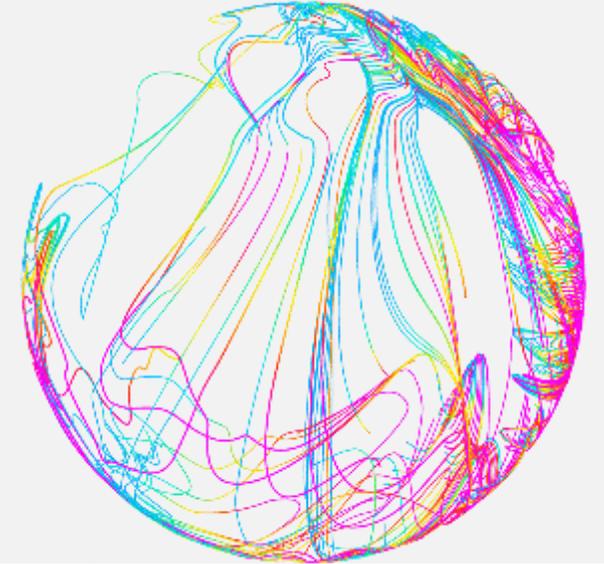
# Energy Transition



- Energy transition = **more than the fast deployment of renewable resources & rapid closure of coal-fired power plants**
- **Transformation of the global energy sector from fossil-based to zero-carbon**
- **Emphasis should be on the development of comprehensive techno-economic analyses on:**
  - ✓ How can renewable energy resources be integrated into an existing energy system and the effects and challenges systems are facing when integrating weather-dependent generators that are non-dispatchable
  - ✓ How to replace the primary energy resource -the ageing and polluting coal power plants with cleaner gas plants?

# How Renewables Diplomacy led to Energy transition

- An aggressive renewables diplomacy + policy measures designed to limit GHGs, **fashioned a pattern shift in energy systems**
- Declining costs of renewable technologies (solar, wind & energy storage) have mobilized green investments, thus becoming a driving mechanism for achieving low-carbon development paths
- This latest dominance of variable renewable energy in investment, pose **new challenges for energy policy and planning** as well as for the **institutional organization of power systems**



# Matching Supply & Demand: new challenge for system integration & energy security

Wind & Solar power are **intermittent** and considered **non-dispatchable**

*To ensure electricity supply meets demand, more flexible generation capacities are required as well as back-up resources to address the costly system balancing needs*





- Solar & wind require that natural gas plants, batteries or some other form of **flexible and reliable** power be ready when the wind stops blowing and the sun stops shining
- From an investment perspective, however, **providing such flexibility and reliability results in extra costs, but not necessarily extra revenue.**
- System planners and operators need to proactively consider whether markets are designed in an optimal manner & ensure renewable energy generators are 'balance responsible' & plan more flexible generators to provide the back-up ancillary services.

**Intermittency can be constrained or even overcome using electricity battery storage**

With the declining cost of new technologies, investing in battery storage will help increase the **dispatchability and predictability** of renewables & create new revenue for investors by delivering **arbitrage and load shifting**

Kosovo's system has to be supported by a new battery energy storage system (BESS) of installed capacity equal to at least 35 MW





# The case of KOSOVO

- Coal plants supply more than **90%** of the country's electricity needs
- Renewable Energy has recently doubled to about 5% of the consumption
- URGENT NEED to address the climate crisis through the energy transition process, means Kosovo can't make thoughtless investments now that will have to be paid off for decades
- We must consider **clean options** but, also ones that are **cost-effective** for consumers
- **It is unavoidable that Electricity prices must rise due to investments in green energy and gas-fueled power plants**
- While nominal tariffs are among the lowest in Europe, Kosovo's **ratio of power prices and the average salary is among the highest**

# Energy transition in Kosovo



- In parallel with the timely construction of the **gas infrastructure**, the real challenge is to **gradually reduce the production in the coal-fired power plant** & accommodate the **largest possible shares of variable renewable** energy sources.

- While renewable sources are being developed faster than it was planned, the replacement of coal-fired power plants with the gas-fired power plants takes longer than planned.

- Renewable projects require **less due diligence**, are **not capital intensive**, have shorter implementation periods and favorable FEED-in tariffs, while gas infrastructure projects require **longer due diligence**, **political economy decisions tend to cover several countries**, are more capital intensive and have longer implementation schedules.