SEA Consulting

Sustainable Energy Advisors

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“Europe’s Critical Energy Choices”

“Impacts of the Current Energy Crisis in the Albanian Power Sector”

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SEA Consulting

Sustainable Energy Advisors

Services and experience;

- Policy and Sectorial Analysis
  - authors of the Albania section of the SEE Energy Outlook 2022 with IENE
  - Long term development plans of the gas sector in Albania
- Natural Gas, LNG, Hydrogen
  - Skopje-Pristina gas pipeline pre-feasibility
  - Vlora SFRU market analysis
  - Drafting of regulations, strategy of gas sector development & Albgaz
  - Potential of H2 exports to EU via EastMed pipeline
- Electricity
  - PV,
  - SHPP,
  - Regulatory

Partners;

Shkelqim Bozgo

Entela (Fico) Shehaj

Abaz Aliko

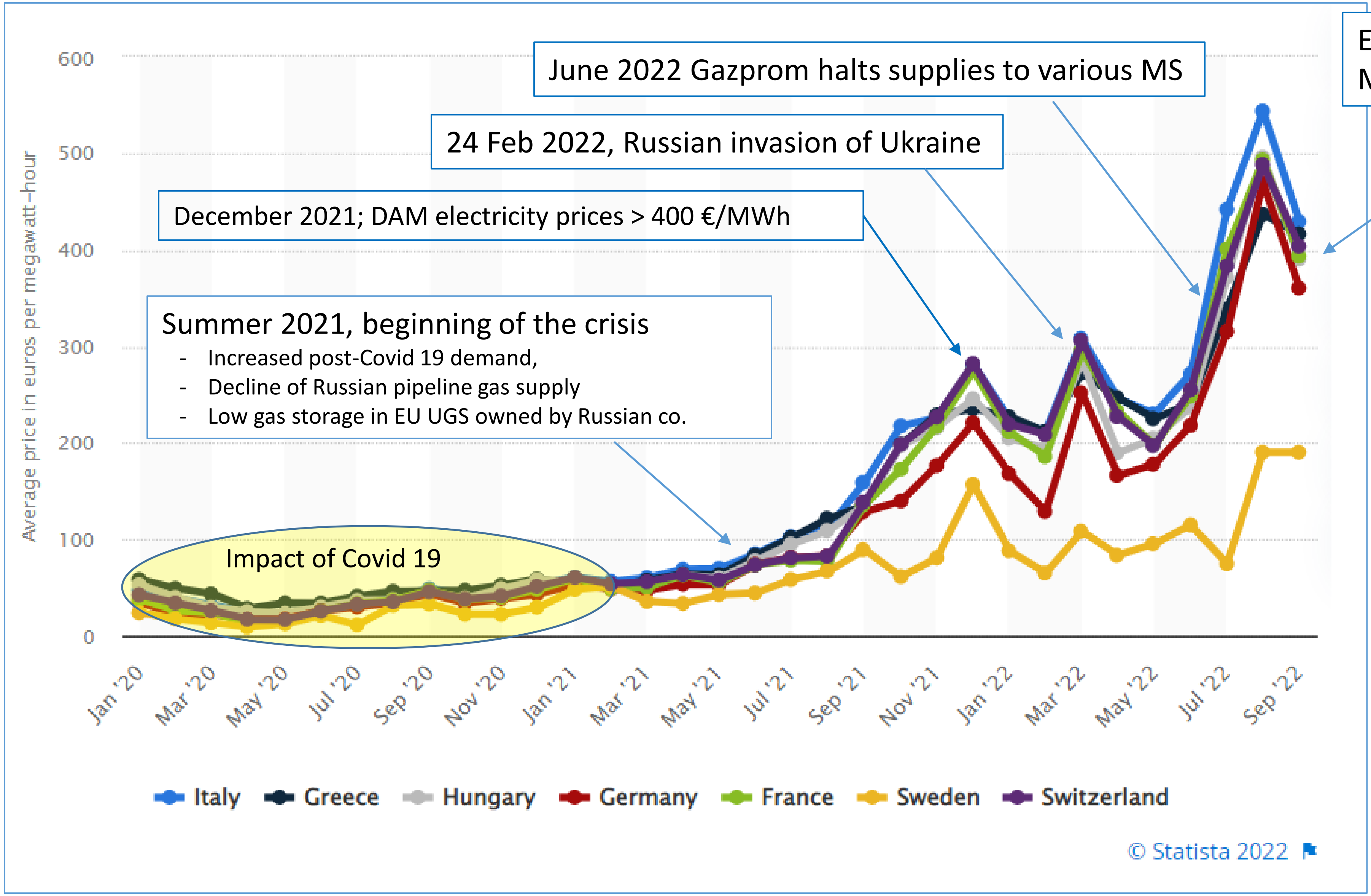
in close cooperation with a wide network of local and international energy experts

Clients;

Deloitte. uniper ExxonMobil BLACK & VEATCH INTESA SANPAOLO BALFIN abkons IENE INSTITUTE OF ENERGY FOR SOUTH EAST EUROPE RTI INTERNATIONAL ELVA 2001 EMMEPI POWER

The latest energy crisis and its impact on Albanian power sector

Average monthly electricity wholesale prices in selected countries in the European Union (EU)
January 2020 - September 2022

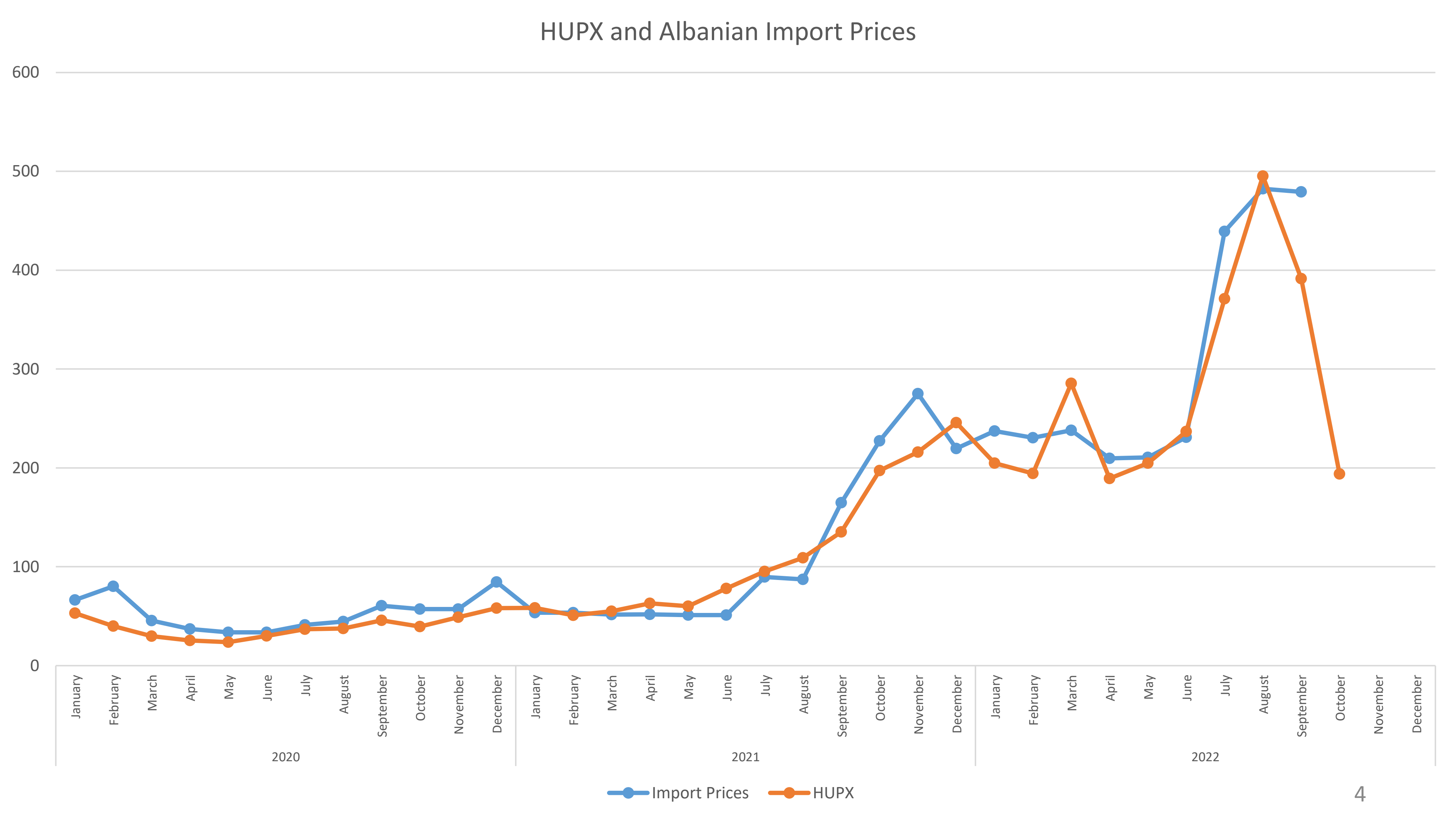


EU Gas storage level 92%
Mild autumn

The latest energy crisis and its impact on Albanian power sector

Evolution of Albania electricity import prices during 2020, 2021 and 2022

- HUPEX is the reference for Albanian imports prices
- Price increase had an immediate impact
- Main importers/buyers
  - Free Market Supplier (FTL)
  - KESH
  - Universal Service Supplier



The latest energy crisis and its impact on Albanian power sector

Domestic hydro production vs growing consumption

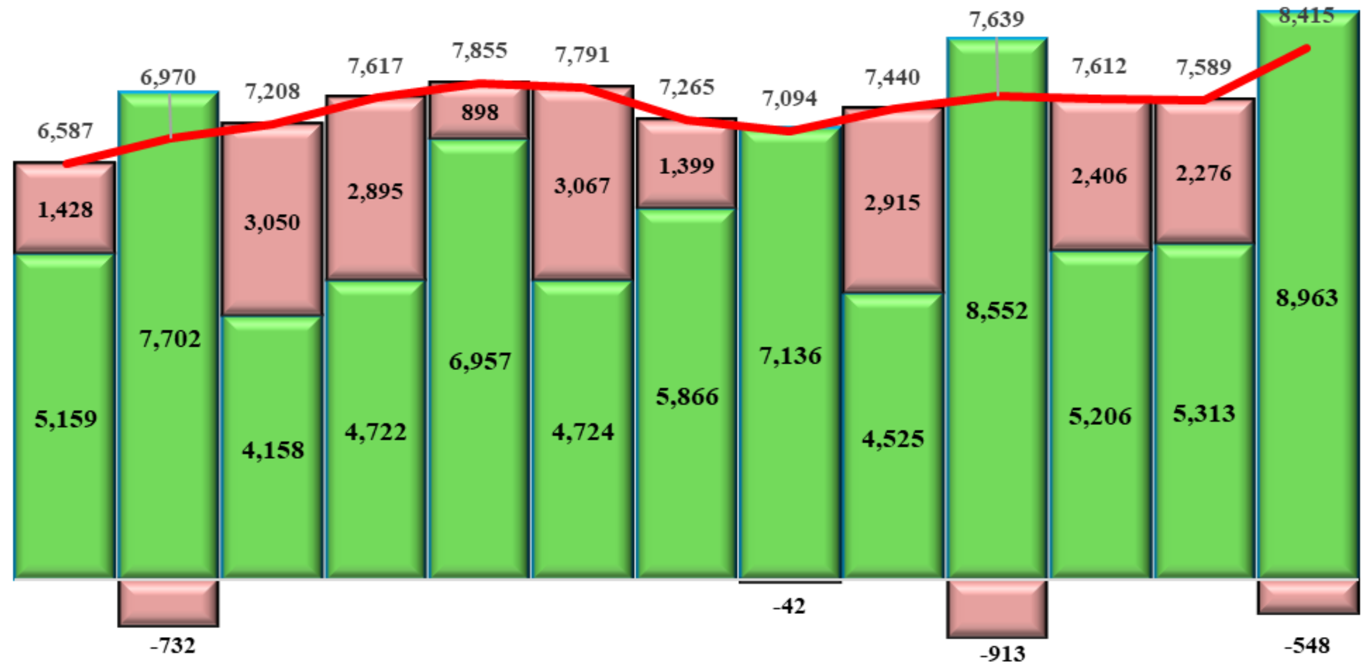
- Year 2021 was the best hydrological and power **production** year (**8.9 TWh**)

  but

- **consumption** was above historical average (**8.4 TWh**)
- **Despite higher production than consumption the cost of electricity imports the highest ever!**

- <u>**DEMAND PROJECTIONS**</u>
  Power consumption is expected to increase steadily in the next 10 years

History of Power Consumption, Domestic Production and Import/Export Balance during 2009-2021

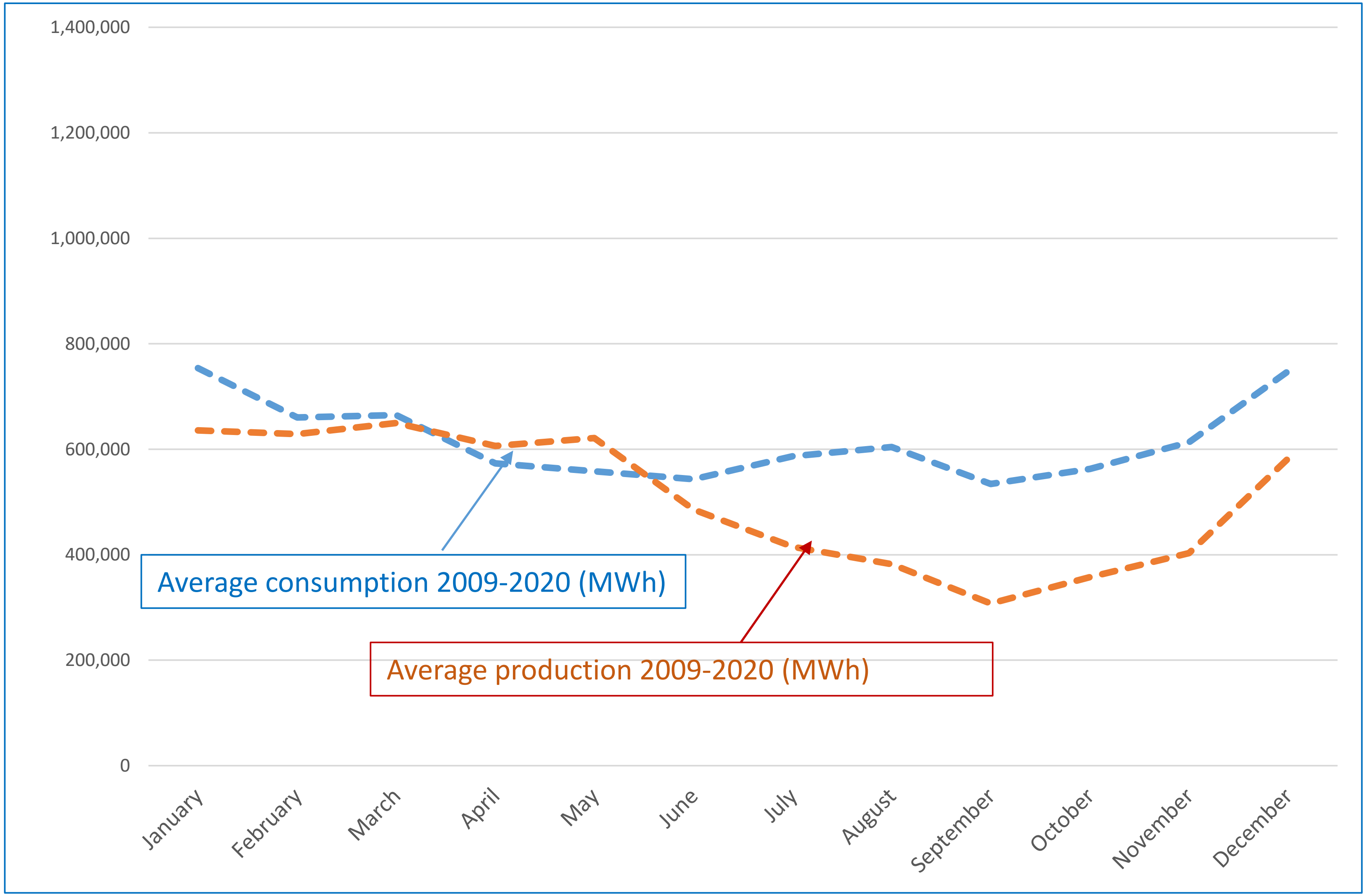


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Imp-Exp Balance	1,428	-732	3,050	2,895	898	3,067	1,399	-42	2,915	-913	2,406	2,276	-548
Net Domestic Production	5,159	7,702	4,158	4,722	6,957	4,724	5,866	7,136	4,525	8,552	5,206	5,313	8,963
Domestic Comsuption	6,587	6,970	7,208	7,617	7,855	7,791	7,265	7,094	7,440	7,639	7,612	7,589	8,415

The latest energy crisis and its impact on Albanian power sector

2021 – why the highest electricity import costs?

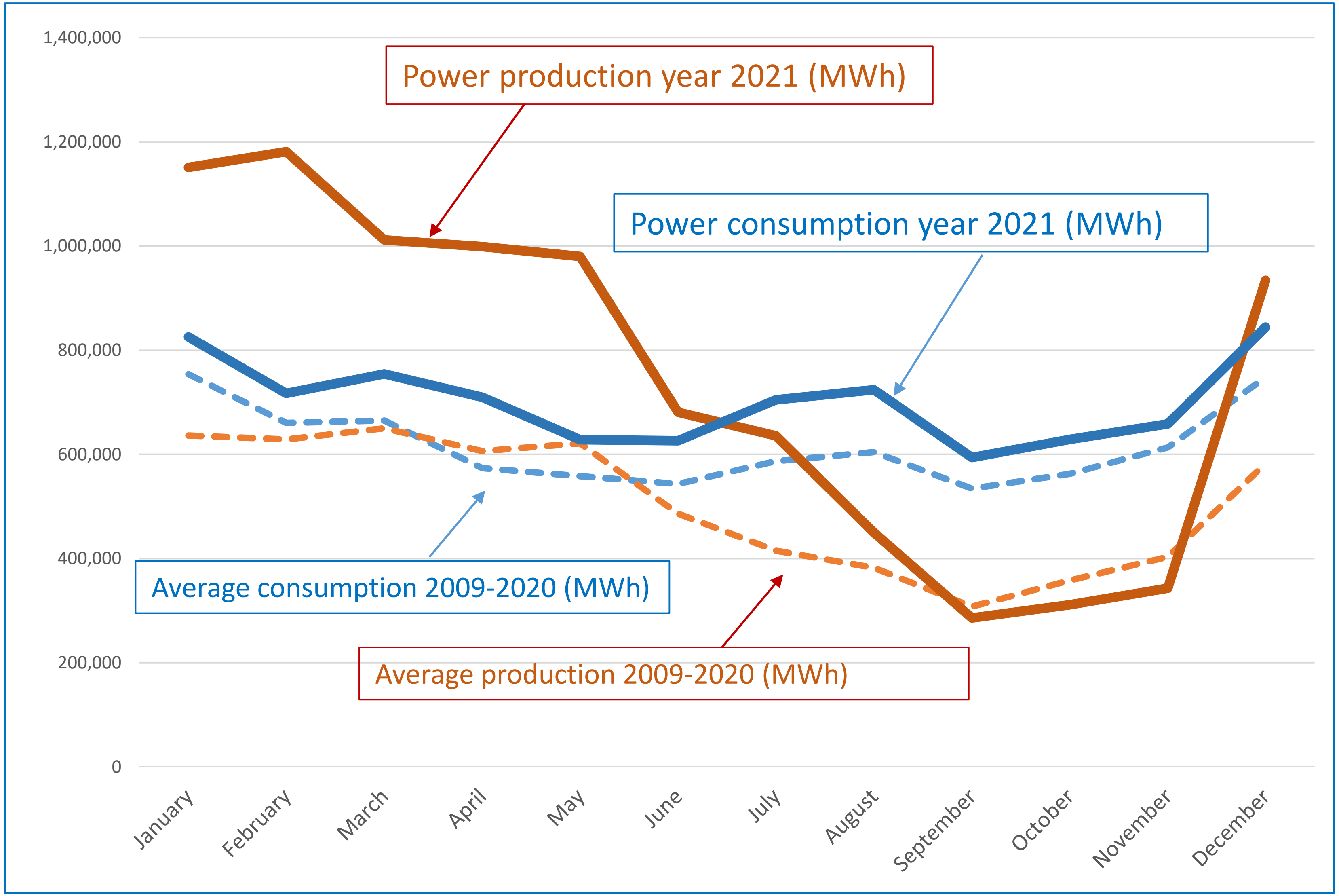
- **Historical average monthly production vs. consumption. Particularities of year 2021**
  - Production meets or exceeds consumption during rainy season (March-Apr-May) when electricity prices are low due to similar rainfall in the whole region
  - Consumption exceeds production during summer (dry and hot months in the whole region) -> high import electricity prices particularly during second half of year 2021



The latest energy crisis and its impact on Albanian power sector

2021 – why the highest domestic production was associated with high cost of electricity imports?

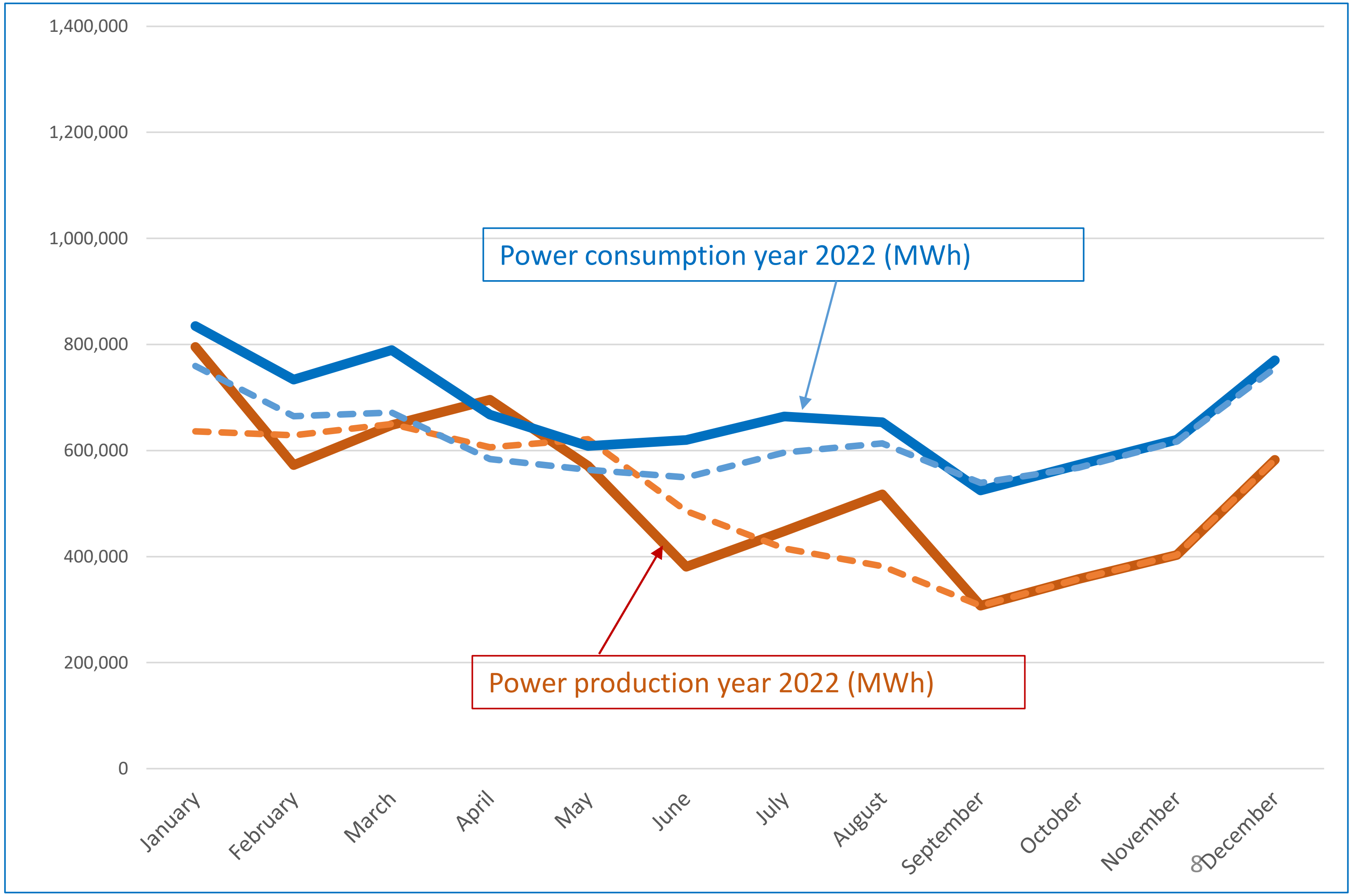
- **Historical average monthly production vs. consumption. Particularities of year 2021**
  - Production meets or exceeds consumption during rainy season (March-Apr-May) when electricity prices are low due to similar rainfall in the whole region
  - Consumption exceeds production during summer (dry and hot months in the whole region) -> high import electricity prices particularly during second half of year 2021
  - Management of Drini river cascade could be improved



The latest energy crisis and its impact on Albanian power sector

2022 – performance so far and prediction

- **Historical average monthly production vs. consumption. Particularities of year 2022**
  - On average, production meets or exceeds consumption during rainy season (March-Apr-May) when electricity prices are low due to similar rainfall in the whole region
  - Apart from April, consumption in 2022 exceeds production during the entire year
  - For 2022, last 3 months of consumption and generation are estimated as being the same with the historical average.



The latest energy crisis and its impact on Albanian power sector

Financial impact of the crisis (2021 – 2022)

- High financial pressure on OSHEE sha and Government of Albania.
- 95% of the electricity purchased in the unregulated market for year 2021 corresponds to August-December 2021

Period	Quantity (MWh)	Average price (€/MWh)	Value excluding VAT (€)
2021	1,305,688	189.80	**≈ 248,000,000**
January - September 2022	1,167,973	313.24	**≈ 366,000,000**
TOTAL	**2,473,661**	**248.08**	**≈ 614,000,000**

Electricity imports purchased by public companies, January 2021- September 2022

- Electricity imports during 2021-2022 constitute 3.4% of the Albania's GDP (2021)

Resumée of the energy crisis so far and challenges;

- **What happened?**
  - By early April 2022 the power system was close to collapse while the situation continues to remain fragile
  - Huge expenses for electricity imports

- **Who suffered the most?**
  - Consumers in the liberalized market (Large and SME's)
  - Consumers supplied by the Last Resort Supplier (FMF)
  - Universal Service Supplier (FSHU), as no change is made to the regulated prices of households and consumers connected to LV
  - The additional costs of Universal Service Supplier (tariff customers) have been subsidized by the Albanian Government

- **Has the situation being resolved?**
  - The rainfalls of late April and of these last days of November were a generous help for the domestic generation
  - Security of Supply still remains a big issue

- **The challenges;**
  - **Increase of power generation capacities**
  - **Reduce dependence from hydro and diversify**
  - *A balance need to be found between **Security – Affordability – Sustainability!***

3. Looking into the future
Short term measures;

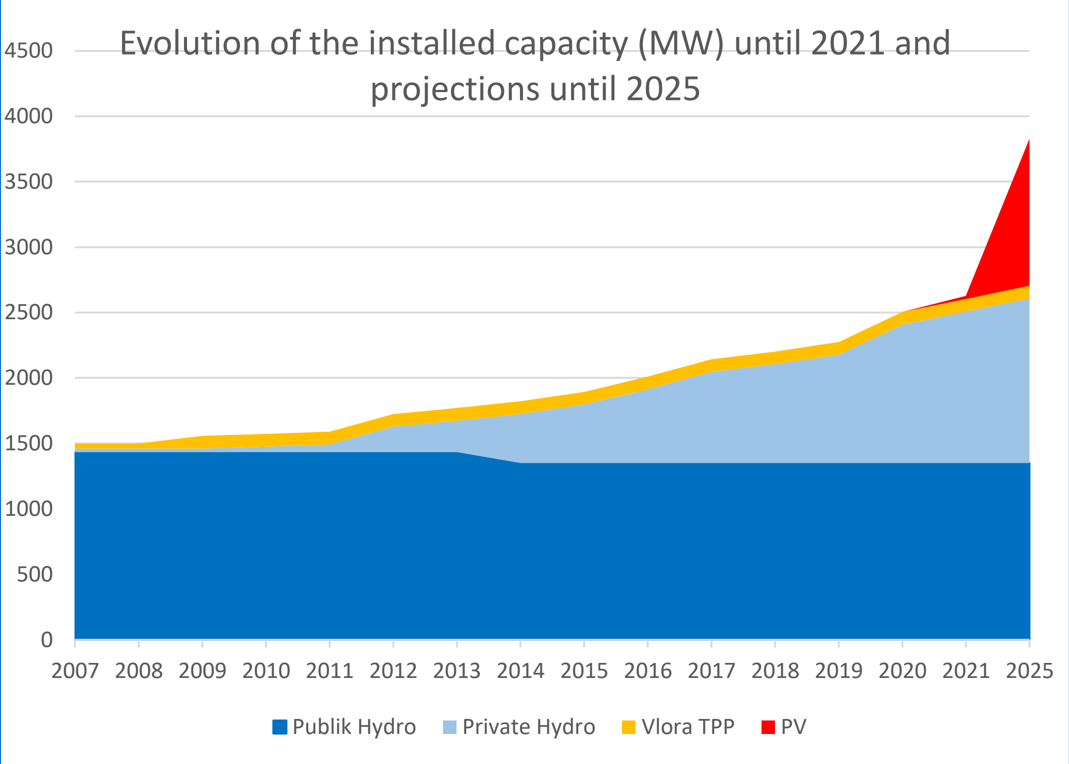
- Two floating diesel generators (114 MW) anchored in Vlora harbor
- Discouraging power consumption;
  - 800 kWh limit for households with a tariff of 8 Eurcents/kWh. If exceeded then tariff increased 4.5 times. Implementation has not started yet.
  - Reduction of electricity consumption/bills for public administration (-15%)
  - Campaign for the installation of subsidized solar water heaters for residential use (1-st phase 2000, 2d phase 20,000)
  - “Windfall tax”

Looking into the future
Mid to long term Integrated plan of actions;

- **Gas to power and Vlora FSRU** - Diversification of the generating portfolio by building baseload thermal power production capacities with natural gas
  - Putting Vlora power plant (97 MW) into operation using natural gas
  - Building additional 350 MW CCGT capacity to serve Albania and region's needs
  - SSLNG/CNG technology – appropriate for the emerging gas markets in Albania, Kosovo, Montenegro
  - TAP entry/exit point in TAP CS Seman, Fier + Gas pipeline Fier - Vlora
- **Energy Efficiency**
- **Market liberalization and market integration** (market coupling, ALPEX,)

Looking into the future
Mid to long term Integrated plan of actions;

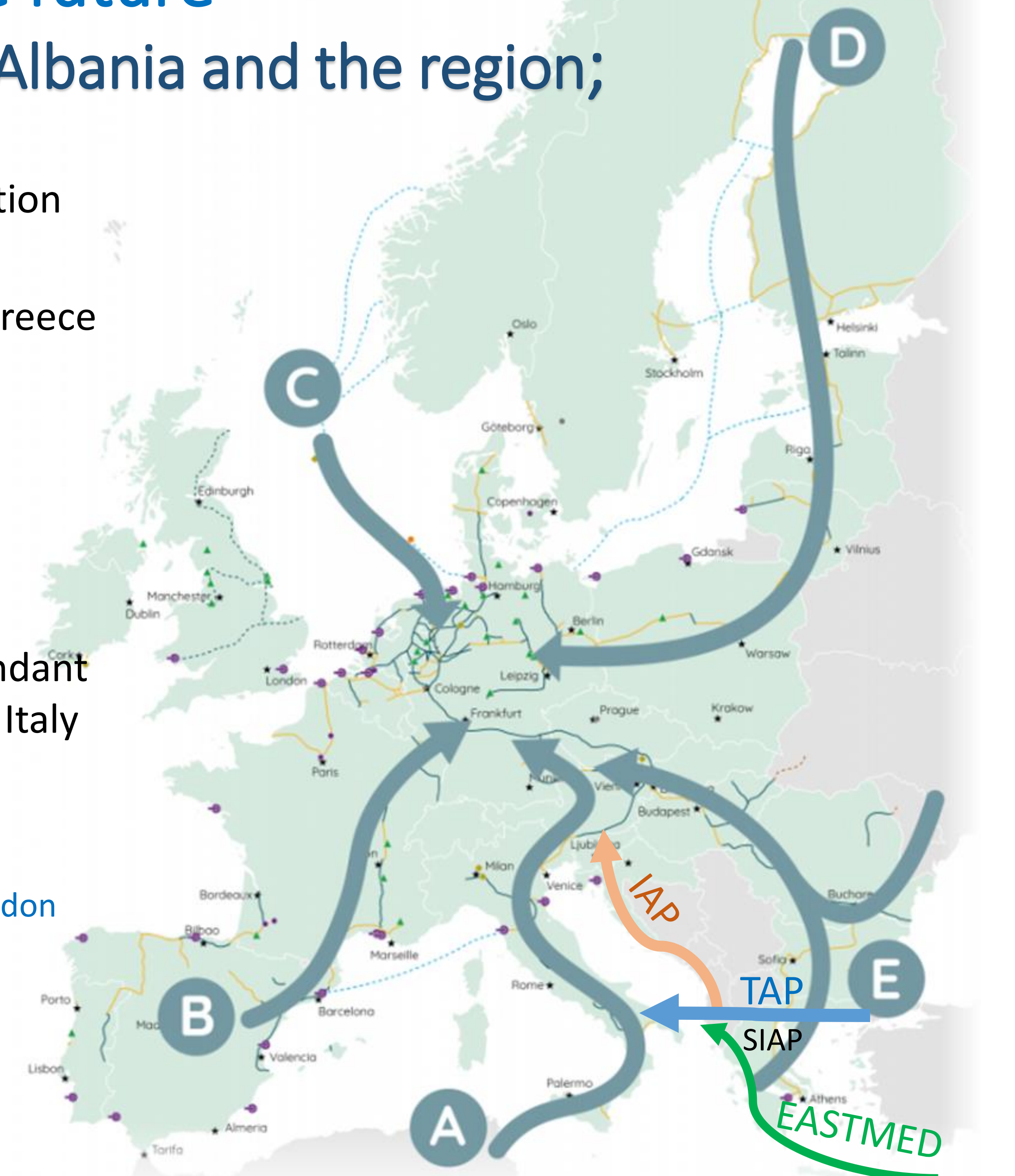
- **RES** - acceleration of new generation capacities for PV and wind by simplifying procedures
  - **2007-2021 (Hydro)**
    - 1,505 MW (2007) -> 2,605 MW (2021)
    - 224 MW are expected to start operation during 2022-2023 period
  - **2021 – 2025 (PV)**
    - PV several projects under way;
      - 145 MW expected to start prod during 2022-23
      - 180 MW in principle approval to be connected to HV
      - 797 MW have obtained preliminary approval
  - **Beyond 2025 (PV + wind)**
    - Wind tender (100-150MW) opened and first results expected by 2023
  - **By 2030** if all is constructed, CAGR will be 3.9% (if HPP Skavica (250 MW) included than CAGR is 4.5%)
- **Interconnection and transmission capacity** needed to cope with the upcoming increase of RES



Looking into the future

Gas has a special role to play for Albania and the region;

- **TAP already operational** and willing to contribute to H_2 transportation (White Dragon)
- **Gas Underground Storage in Dumre** salt domes to benefit Italy, Greece and wider region
- **Promising discovery by Shell in Shpirag,** central Albania
- **IAP,** next to TAP will enable access to central European gas and H_2 markets
- **EastMed,** besides Leviathan gas, can be used to transport the abundant Greek and other western Balkan countries future H_2 production to Italy and central EU markets
- **Momentum is for IAP, EastMed + SIAP**
    - SIAP (Southern IAP) a shorter and more economic alternative than IGI Poseidon
    - Huge CCUS capacities in Albania in the existing depleted oil field
    - Access to EU and all western Balkan market and central EU
    - A new alternative of H_2 flows to EU



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THANK YOU!

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