



“Update on the Latest Developments in the Albanian Power Sector”

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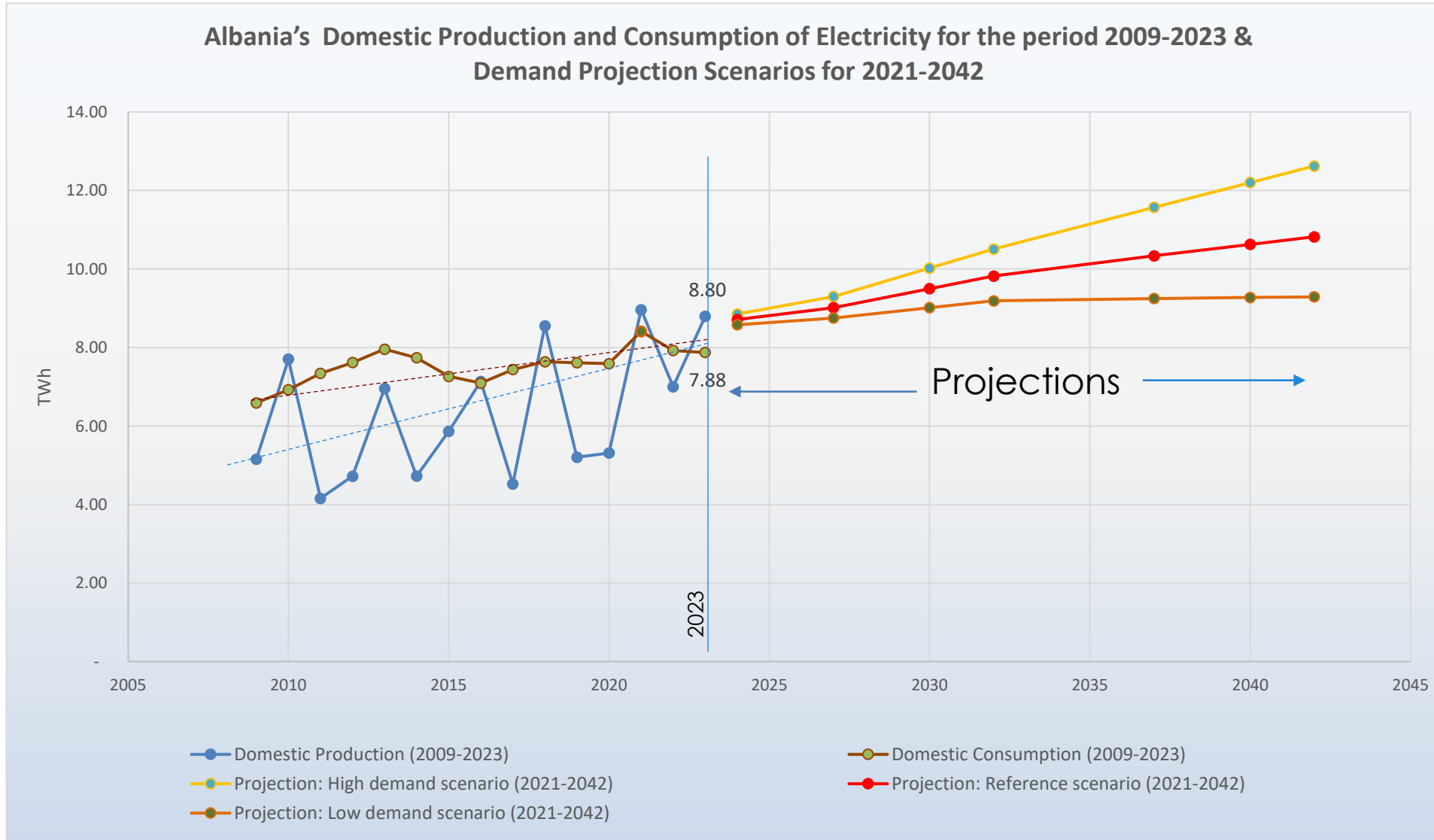
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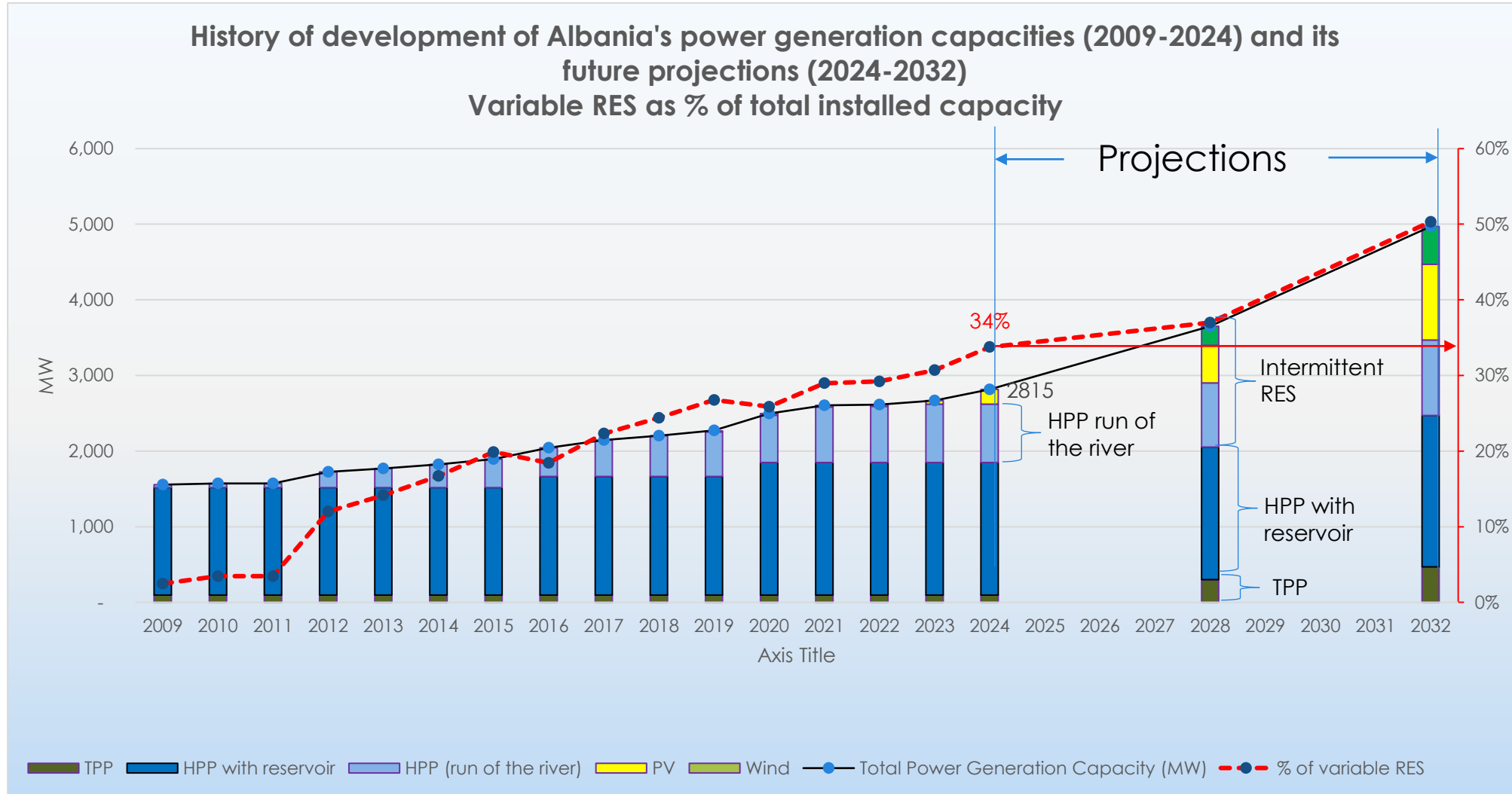


Albania's Domestic Production and Consumption of Electricity for the period 2009-2023 & Demand Projection Scenarios for 2021-2042



Source: ERE annual report for year 2023 and OST "Study on the Albania electricity demand forecast 2021-2042"

Albania's Power Generation Capacities



(*) data for year 2024 corresponds to the period January – April 2024

Source: Chart is prepared by SEA Consulting based on data obtained by ERE annual reports and OST

State of Approval of New Power Generation Projects in 2023

MAIN PROJECTS:

- **PV parks: “Blue 1” and “Nova Solar”**
Capacity: 127.6 = 57.6 + 70 MWp
Location: Hoxhare, Fier
expected to start production in 2024
- **Three eolic parks**
Capacity: 222.48 MW
Investor: winners of the July 2023 Wind Power Auction
- **300 MW PV Auction** in process
- **Skavica HPP**
Capacity: to be defined. Feasibility study under preparation
Location: in the upper part of Drini Cascade
Investor: KESH Company.

Potential for new hydro PP is reduced

Big difference indicating;

- High level of interest from investors and
- Very slow approval process

GENERATION TYPE	Application Stage	No of Projects	Capacity (MW)
HPPs	Prior Opinion		
	Approval in Principle	5	64
	Connection Agreement	3	39
PVs	Prior Opinion	63	5,027
	Approval in Principle	8	273
	Connection Agreement	2	130
WPPs	Prior Opinion	41	4,336
	Approval in Principle	5	295
	Connection Agreement		
TOTAL	Prior Opinion	104	9,363
	Approval in Principle	18	632
	Connection Agreement	5	169

Main Challenges of the Albanian Power System

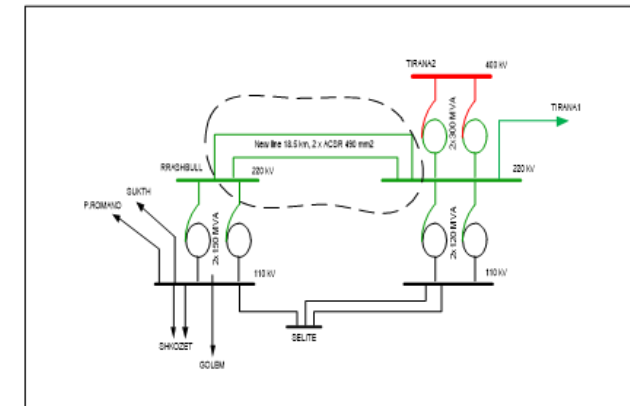
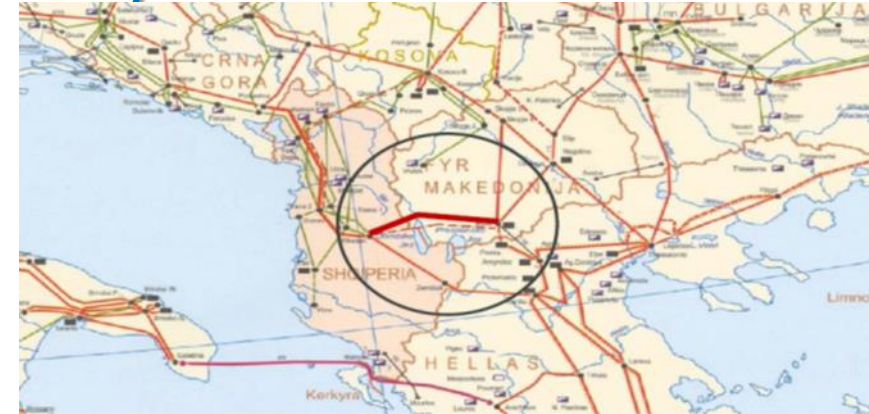
- Increasing share of variable RES (currently at 34%)
- Increasing demand for storage and balancing sources
 - Pumping storage project ideas;
 - KESH in Drini river cascade
 - Statkraft in Devoll river cascade
 - Natural gas fired thermal power plants
 - Vlora TPP, Terna+Gener2 TPP in Roskovec, etc ?
 - Battery storage although no real proposal has been made yet
 - Room to consider also blue hydrogen, other ...
- Strengthening of domestic transmission and distribution capacities
- Strengthening of interconnection capacities with the region
- Regulation to consider storage and balancing capacities as part of new generation project(s)

Main Challenges of the Albanian Power Transmission System

- Aging and obsolete infrastructure
 - World Bank study (2018) estimates the average age of the transmission lines in Albania at 35 years and the network losses at 2.4% versus the regional average at 1.9%
- Operational Challenges at the domestic 400 kV network
 - No internal ring therefore N-1 criteria is not yet fulfilled
- Low level of automation and digitalization
 - Lack of wide adequate monitoring, control and communication systems that would enable a more efficient and secure management of the network particularly at 110 kV substations and some generation units.
- Exposure of the transmission network to seasonal and climate variability due to high dependence on hydropower generation

Main Projects of the Albanian TSO (under implementation)

- 400 kV Transmission Line Albania – North Macedonia (Fier - Elbasan - Qafe Thane)
 - Status of progress = 50%
 - Completion time end of 2026
- Double Circuit OHL Tirana 2 - Rrashbull and 110 kV Tirana Ring
 - Status of progress = 50%
 - Completion time end of 2026
- TSO-DSO Interaction
 - Several projects under way and planned



Main Projects of the Albanian TSO (new interconnections)

1. New 400 kV OHTL Fier (Albania) - Arachtos (Greece)

- Total Project Costs estimated at around 104 € million.
- Lead Financial Institution kfW.
- In progress for submission as a candidate project in TYNDP 2024 of ENTSO-E.

2. Three Interconnection Lines with Montenegro

- Reconstruction of 220 kV OHTL Vau Dejes (AL) – Podgorica (MN) and expansion to 400/220 kV of SS Vau Dejes.
- New 110 kV Interconnection line Velipoje (AL) – Ulqin (MN).
- New 400 kV Line Koman - Lastva

3. Two Interconnection Lines with Kosovo

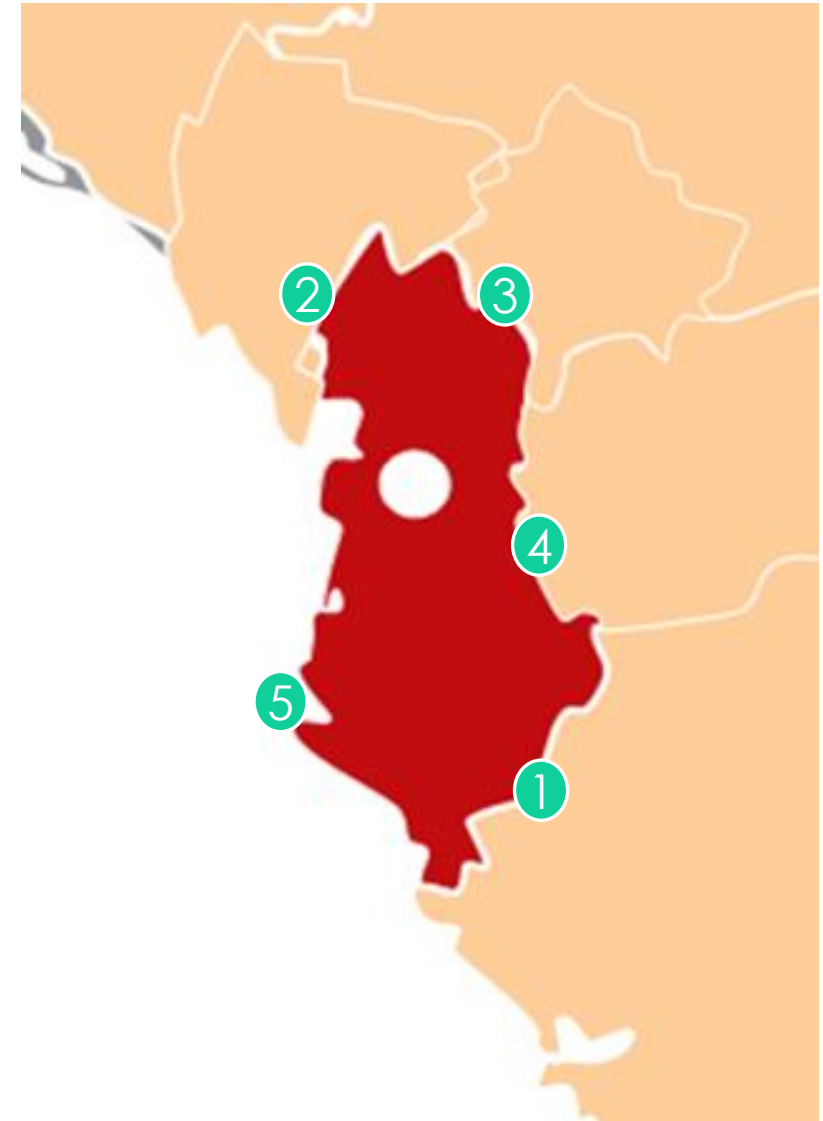
- New 110 kV Interconnection line B.Curri (Albania) – Decan (Kosovo).
- New 400 kV Line Fierze (Albania) – Prizreni 2 (Kosovo)

3. New 110 kV Line with North Macedonia

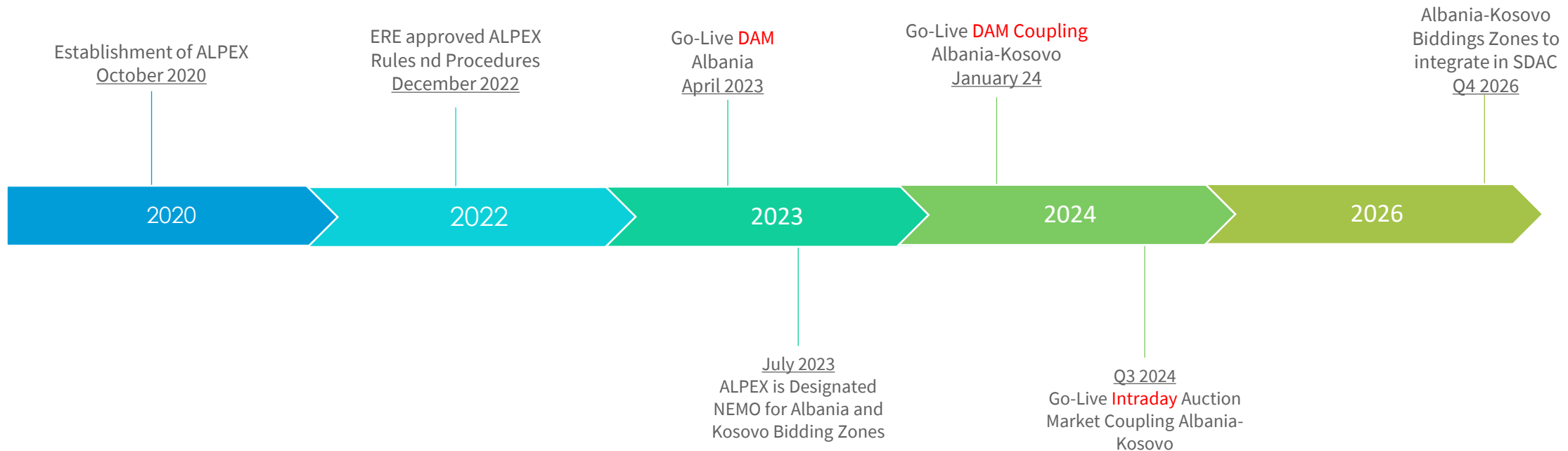
- The project is at the concept-idea stage, but should be further addressed as part of a preliminary feasibility study.
- Estimated value of the project amounts to about €5 million.

3. New subsea interconnection line with Italy

- Concept idea stage
- Subsea HVDC interconnection line
- Transmission capacity 500 MW
- SS Vlorë/Babice (AL) to Brindizi (IT)
- Estimated length of 85 km



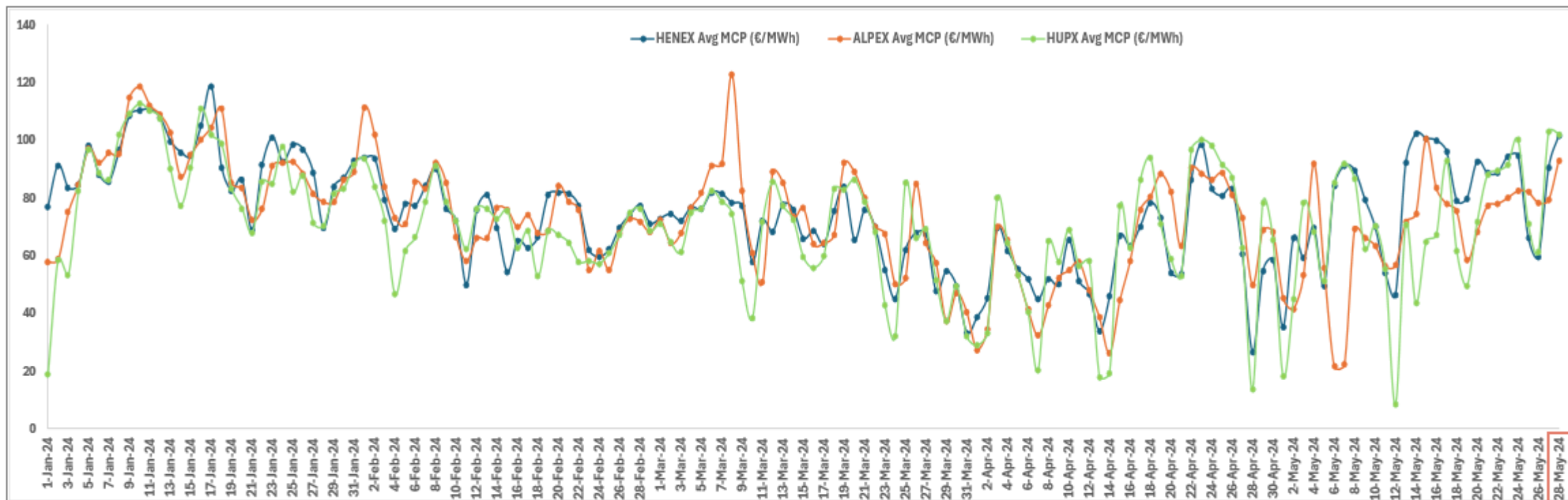
An important achievement in the Albanian and Kosovo power markets



Performance 2023-2024

	2023	Jan - April 2024
	<u>12 April 2023</u> Commencement of operations in ALPEX DAM	<u>01 February 2024</u> Commencement of DAM Coupling Albania – Kosovo <u>3 April 2024</u> Full member of Europex Association
Total Traded Volumes:	827,541 MWh	649,115 MWh
Average MCP:	€ 100.15	€ 73.29
Invoiced Buy/Sell:	€ 167,702,808	€ 93,673,970
Exchange Members:	17	25
General Clearing Members	1	4

Performance 2024



	ALPEX	HENEX	HUPX
Baseload Price (€/MWh)	73.29 €	74.72 €	70.42 €
Daily Average MAX - 2024	↑ 122.65 €	↑ 118.54 €	↑ 112.53 €
Daily Average MIN - 2024	↓ 21.61€	↓ 26.53 €	↓ 8.35 €

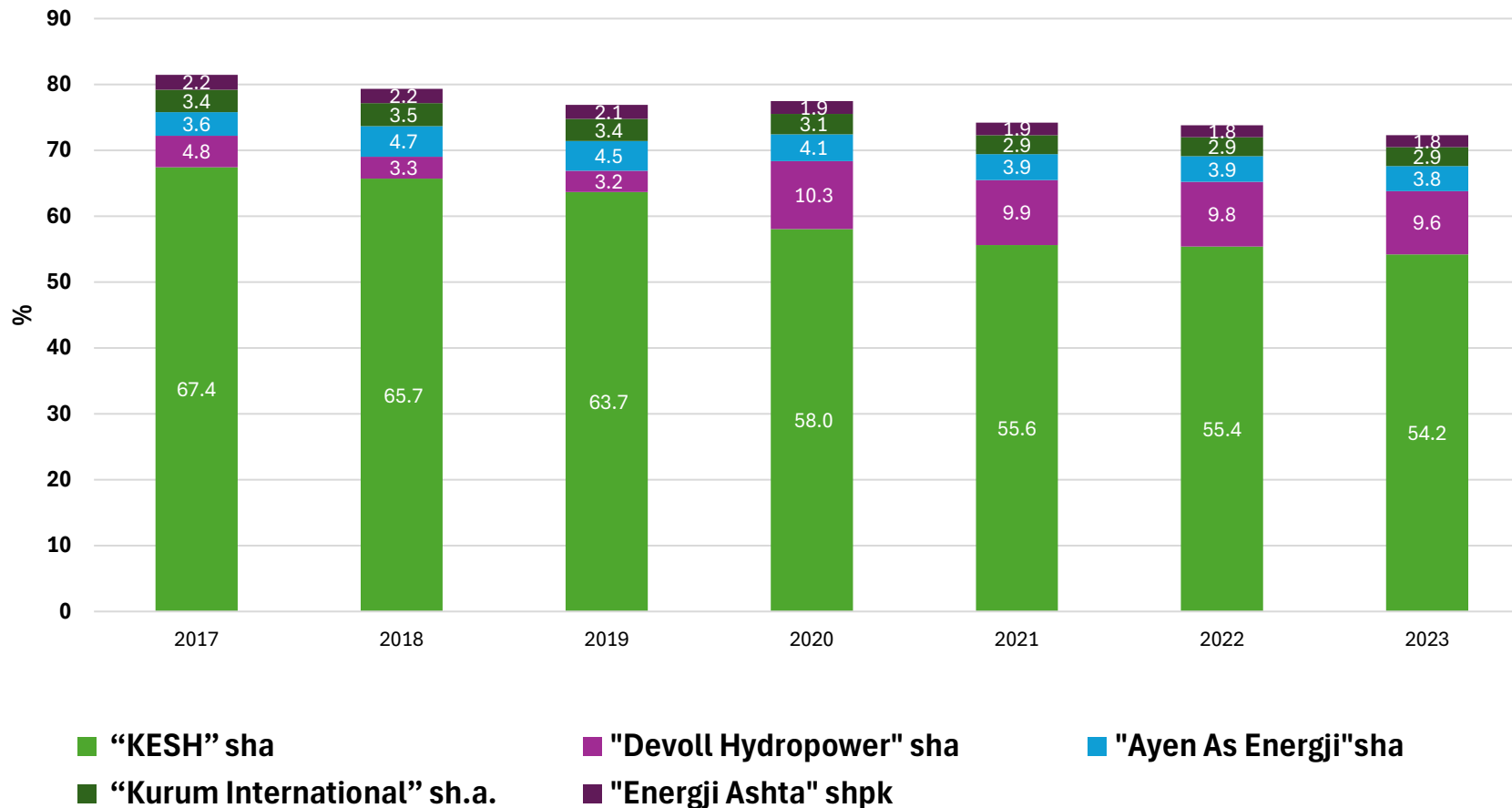
Main indicators of the evolution of the electricity market concentration in Albania

SEA Consulting has carried out an assessment of the concentration of the electricity production market in Albania by calculating the 3 most widely used indicators:

- 1) C5 = the market share held by the 5 largest generators of capacity and of production.
- 2) Companies owning a share of both capacity and production greater than 5%.
- 3) The Herfindahl-Hirschman index.

C5 – the share of generation capacity held by 5 largest generators.

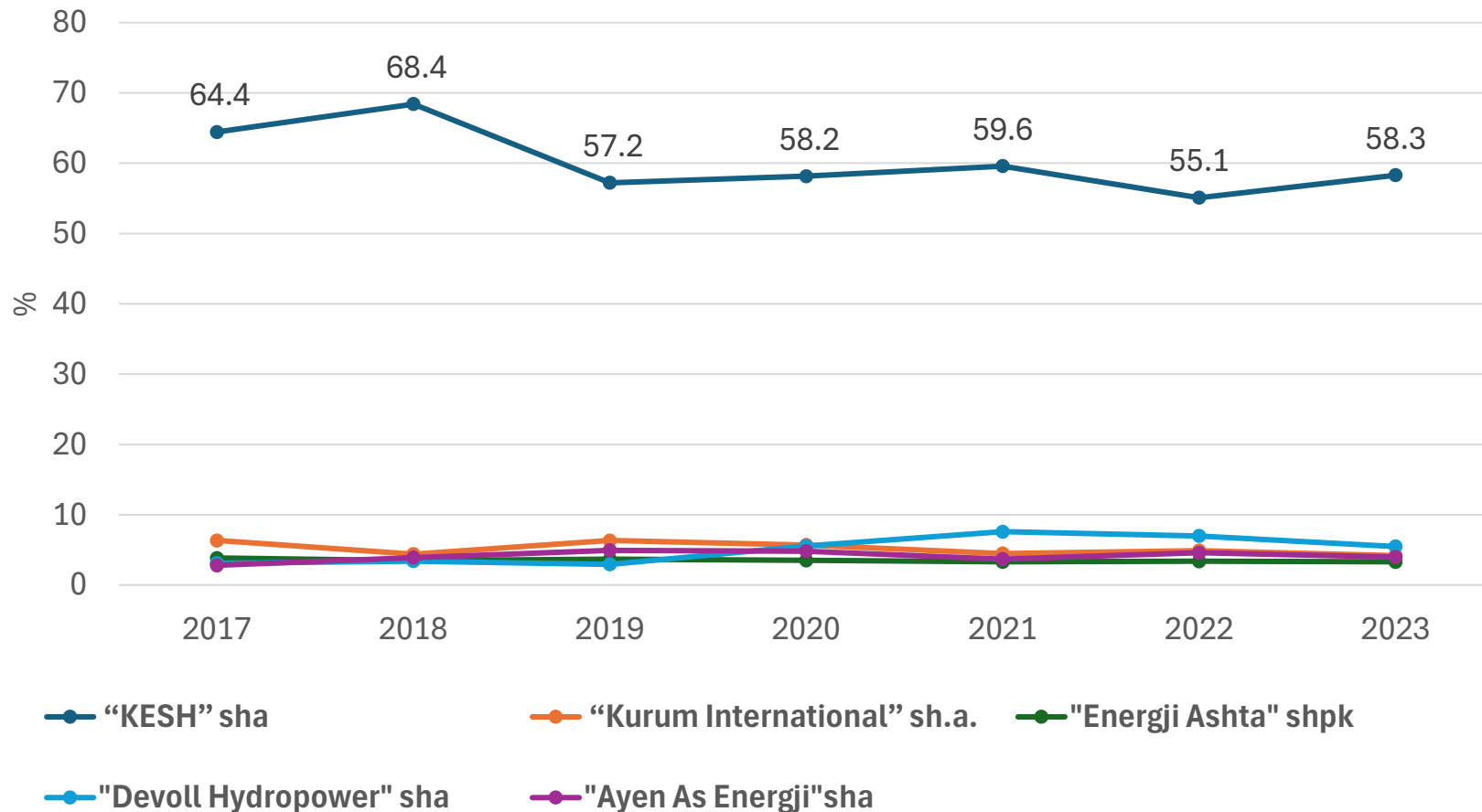
Share of generation capacity of the main 5 players over time



- KESH remains the dominant player with more than 54% but its share has been constantly decreasing over time
- Important new entrants like “Devoll Hydropower” are taking terrain getting close to nearly 10%
- New PV plants and wind are expected to change very soon the share of generation capacities

C5 – the share of power production held by 5 largest generators.

Share of power production of the main 5 players over time



- Like in the case of generation capacities, **KESH** remains the dominant electricity producer with an average of above **55%**
- “**Devoll hydropower**” and other smaller producers show a growing tendency
- **New players** including **PV** (Voltalia and others) and **wind** are expected to have also an impact in the near future domestic electricity production

Companies owning a share of generation capacity/power production greater than 5%.

	2017	2018	2019	2020	2021	2022	2023
Companies owning a share of generation capacity greater than 5%.							
"KESH" sha (%)	67.4%	65.7%	63.7%	58.0%	55.6%	55.4%	54.2%
"Devoll Hydropower" sha (%)				10.3%	9.9%	9.8%	9.6%
Total Generation Capacity (MW)	2,145	2,204	2,274	2,495	2,604	2,614	2,669

Companies owning a share of power production greater than 5%.							
"KESH" sha (%)	64.4%	68.4%	57.2%	58.2%	59.6%	55.1%	58.3%
"Kurum International" sh.a. (%)	6.3%	-	6.4%	5.7%	-	-	-
"Devoll Hydropower" sha (%)	-	-	-	5.6%	7.6%	7.0%	5.5%
Total Electricity Produced (GWh)	4,523	8,552	5,206	5,313	8,962	7,003	8,796

During the period 2021- 2023 only 2 companies, "KESH" sh.a., and "Devoll Hydropower" sh.a. had shares higher than 5% regarding both; generation capacity and electricity production.

Herfindahl-Hirschman Index

- Herfindahl-Hirschman Index (HHI) is a key general indicator of market concentration
- HHI is calculated as the sum of the square of the market share for all market participants:

$$HHI = \sum(\text{market share})^2$$

- So, it amplifies the companies with the largest market shares.
- If the entire market is owned by a single firm the index reaches a maximum of 10,000 points (100%²).

Herfindahl-Hirschman Index

According to the Regulation of the **Council of the European Union** (Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03)),

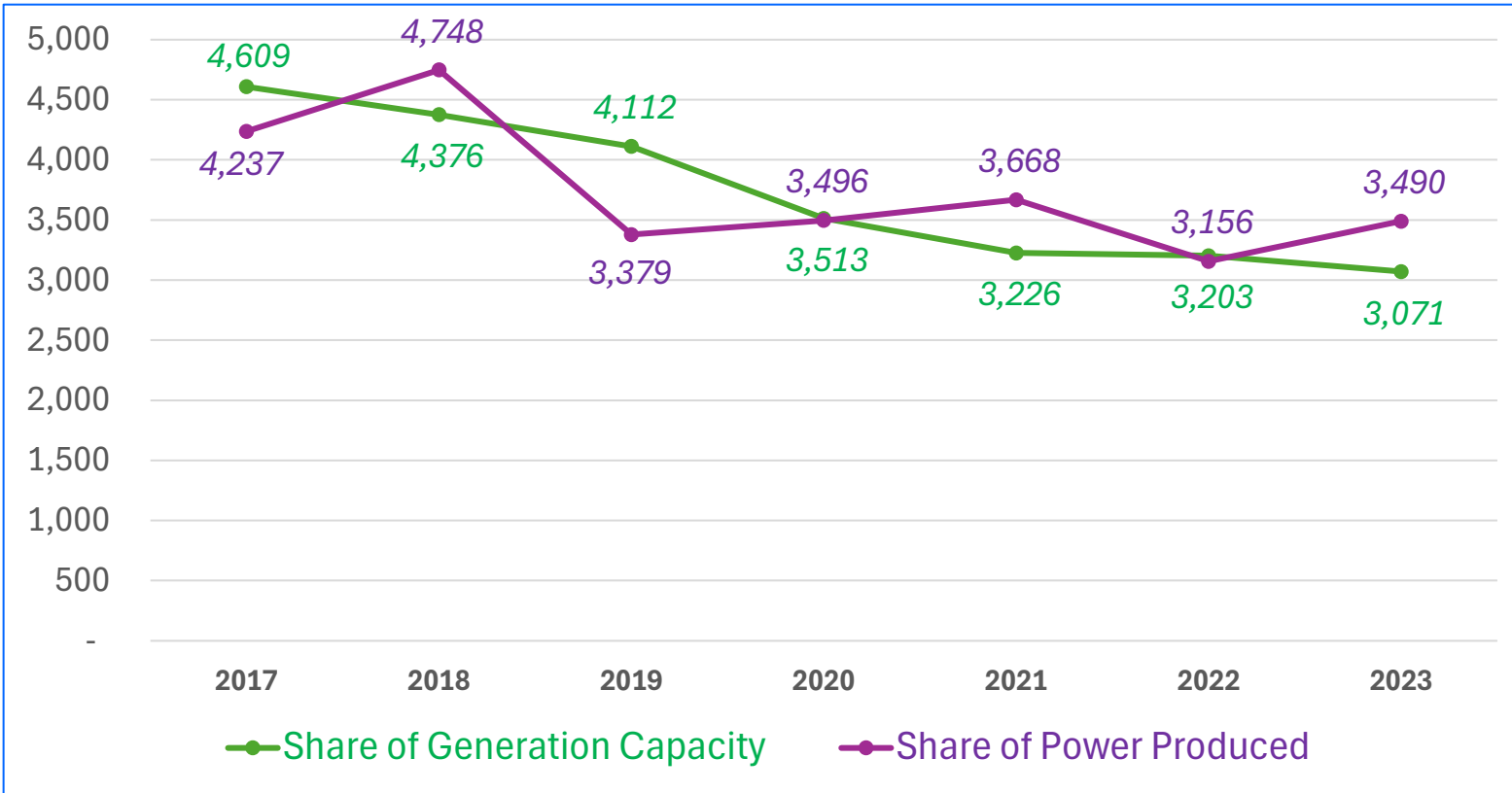
- when the HHI index is **below 1000**, the concentration **does not pose a risk** of restriction of competition.
- when the HHI index is **between 1,000 and 2,000**, problems related to horizontal competition **may not be identified**.

According to the **US Department of Justice** (Horizontal Merger Guidelines), based on their experience, US agencies generally classify markets into three types:

- i. Decentralized markets [**not concentrated**]: HHI **less than 1,000**.
- ii. **Moderately concentrated** markets: HHI **between 1,000 and 1,800**.
- iii. **Highly concentrated** markets: HHI **greater than 1,800**.

Herfindahl-Hirschman Index in electricity production in Albania

Herfindahl-Hirschman Index (HHI) in electricity capacity / production in Albania 2017-2023
(data source ERE, Annual Reports):



- HHI indicates a **highly concentrated** market (HHI > 3000).
- But the **trend is constantly decreasing** due to new entrants.
- The last divestiture from KESH, (the dominant generator that was also the only generator) occurred in 2012 and was relatively modest (76.7 MW).
- The lowest level of HHI calculated according to the share of generating capacity that companies own in the country is always in the last year (HHI 2023 = 3.071).

New entrants remain essential for increasing competitiveness in electricity generation in the country !



THANK YOU!

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