Energy for Sustainable Growth: Exploring Potential Cooperation in Various Forms between Greece and the Arab World

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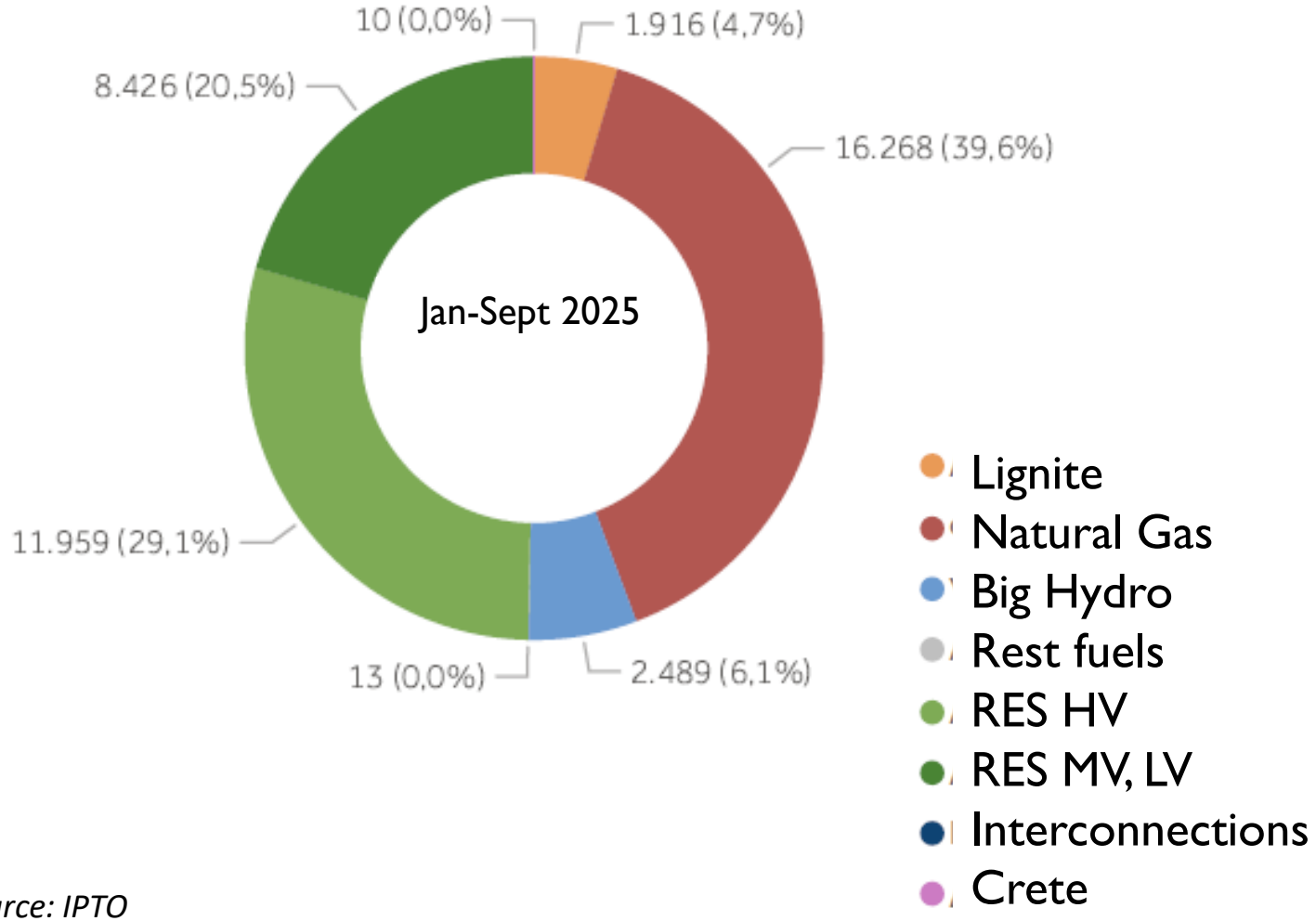
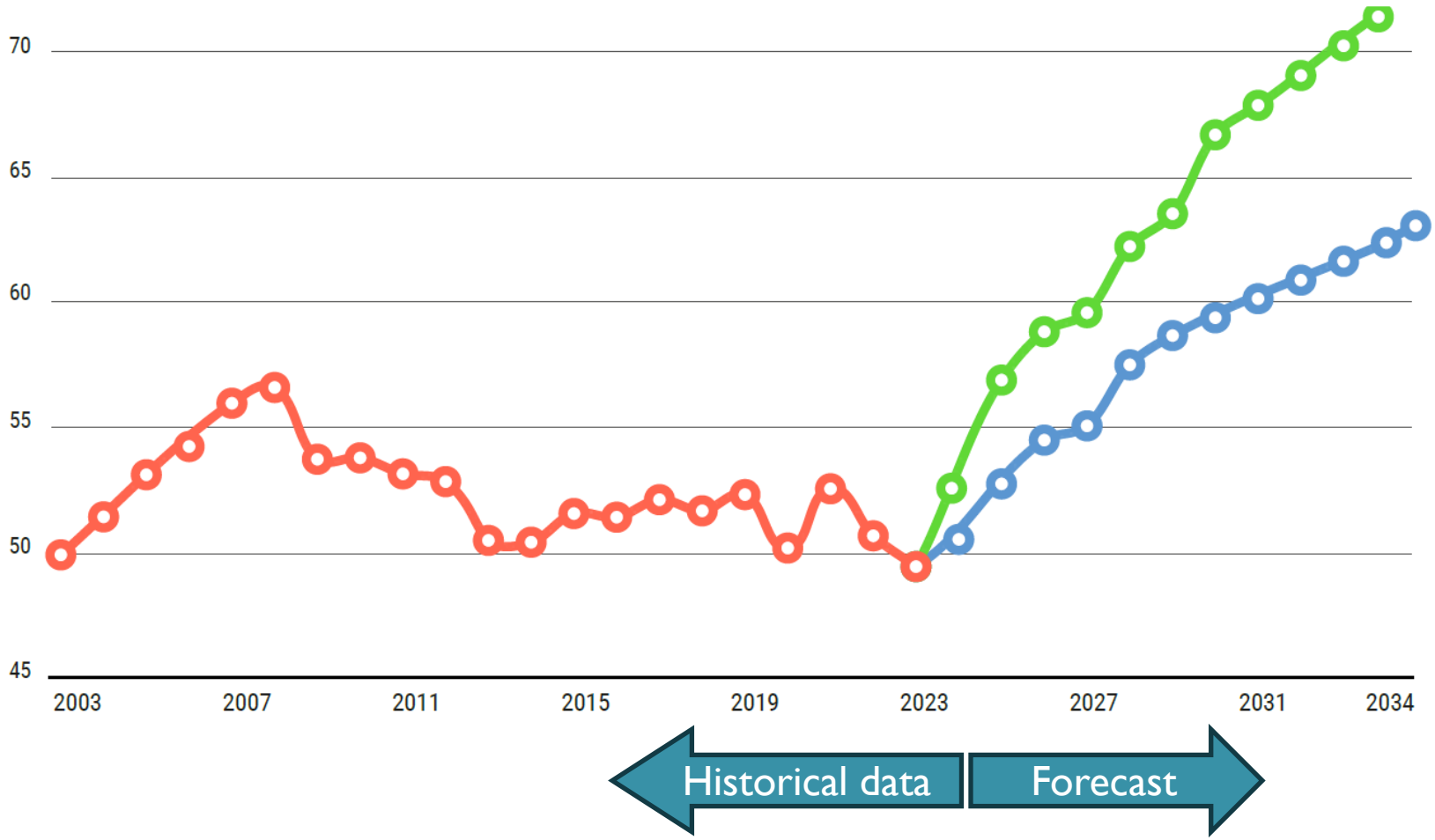
RES ~56% in Greece in Energy Terms



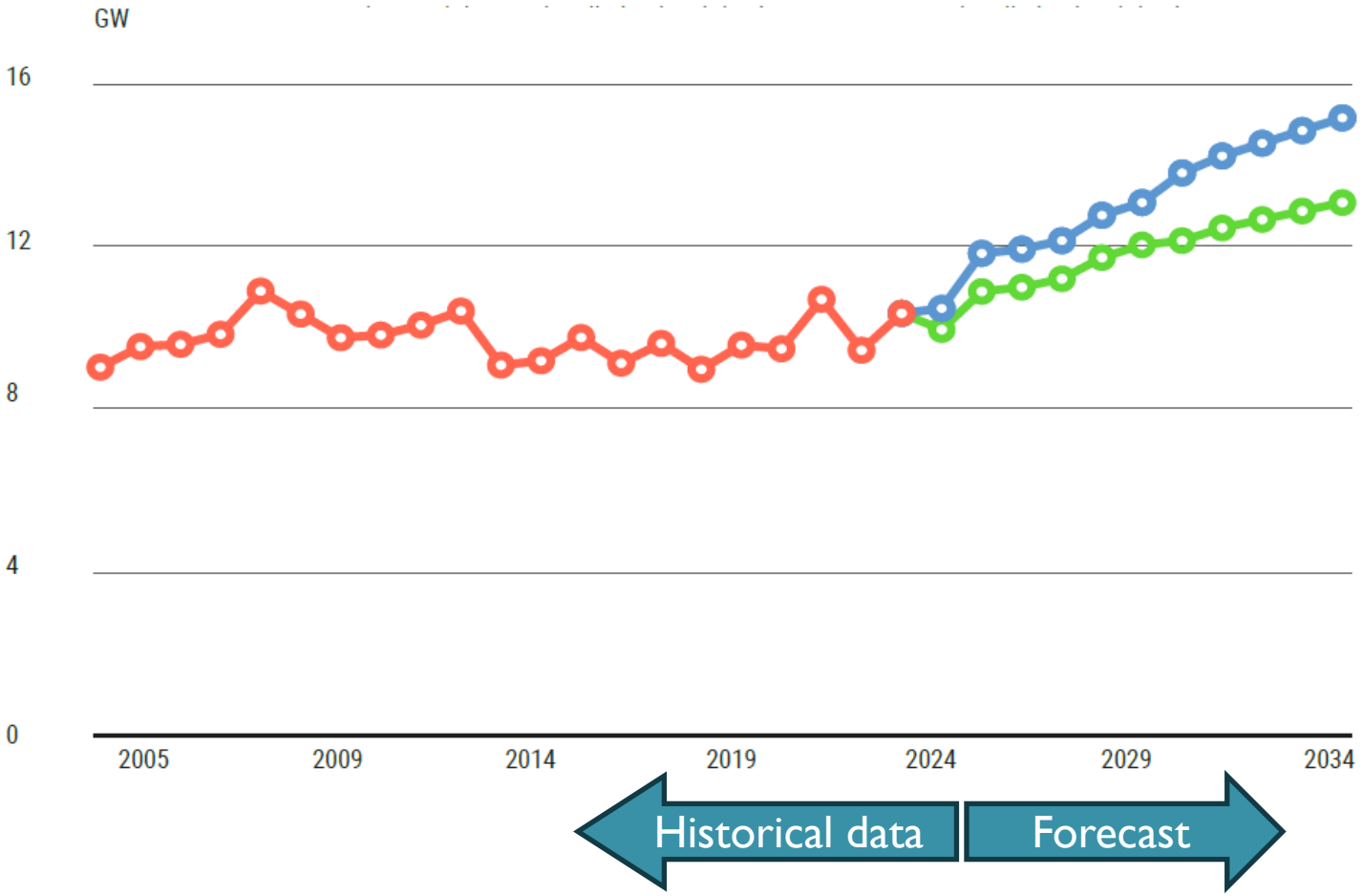
Source: IPTO

Electricity Demand in TWh in Interconnected Grid since 2003



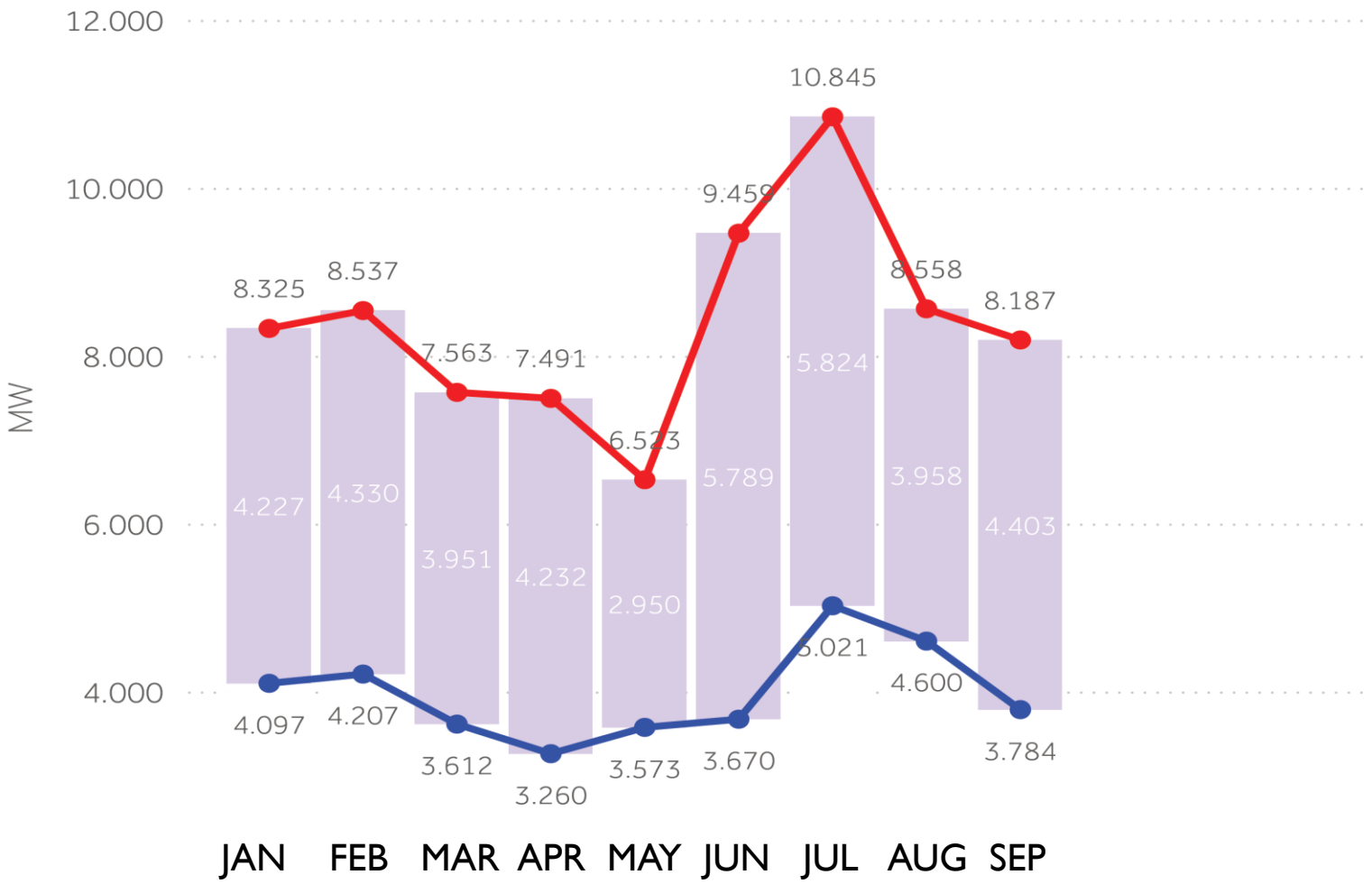
Source: IPTO

Power Demand in GW in Interconnected Grid since 2005



Source: IPTO

Power Demand in MW in Interconnected Grid - 2025

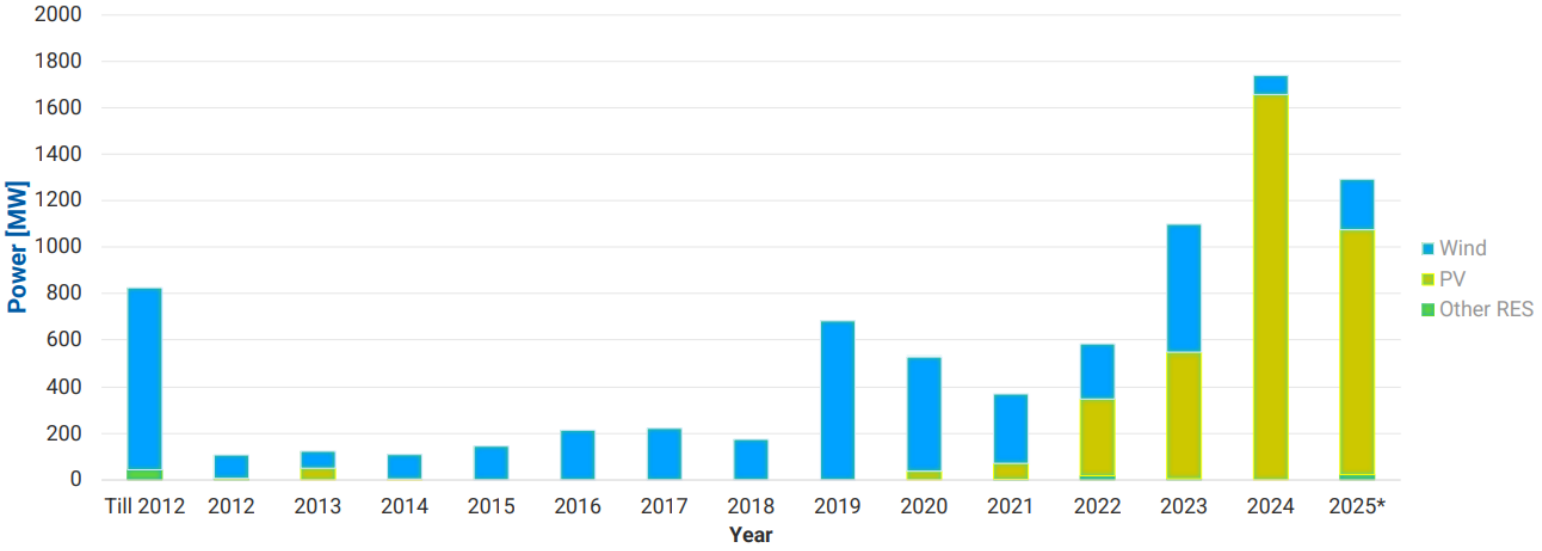


Source: IPTO

PVs and RES in Greece

Electrification

IPTO RES Electrification and current Status

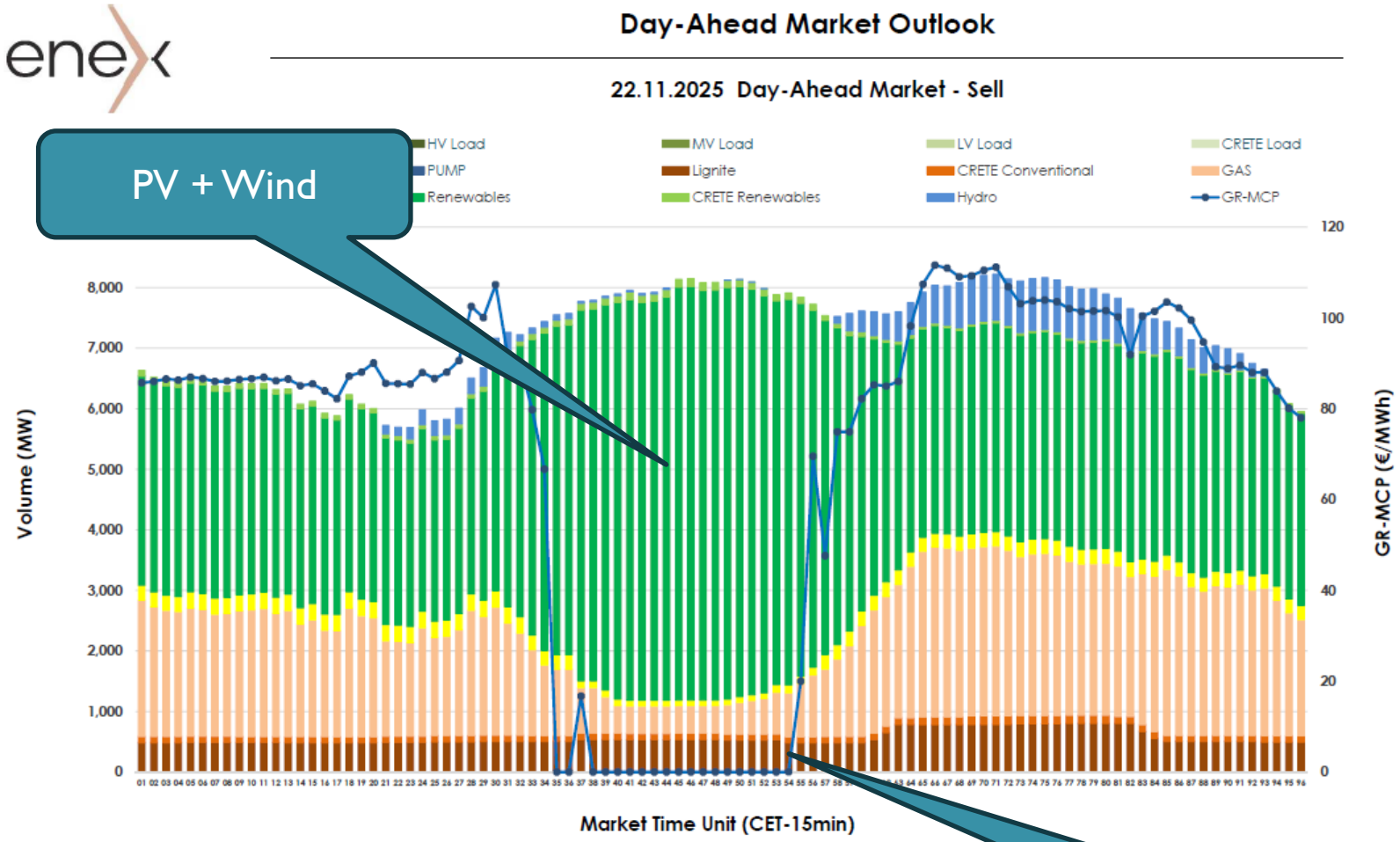


RES in Operation

Category	Installed Power [GW]			
	Total	Wind	PV	Other
Transmission (IPTO)	**8,1**	4,3	3,7	0,1
Distribution (HEDNO) *Estimation*	**9,0**	1,2	7,2	0,6
Total	**17,1**	**5,5**	**10,9**	**0,7**

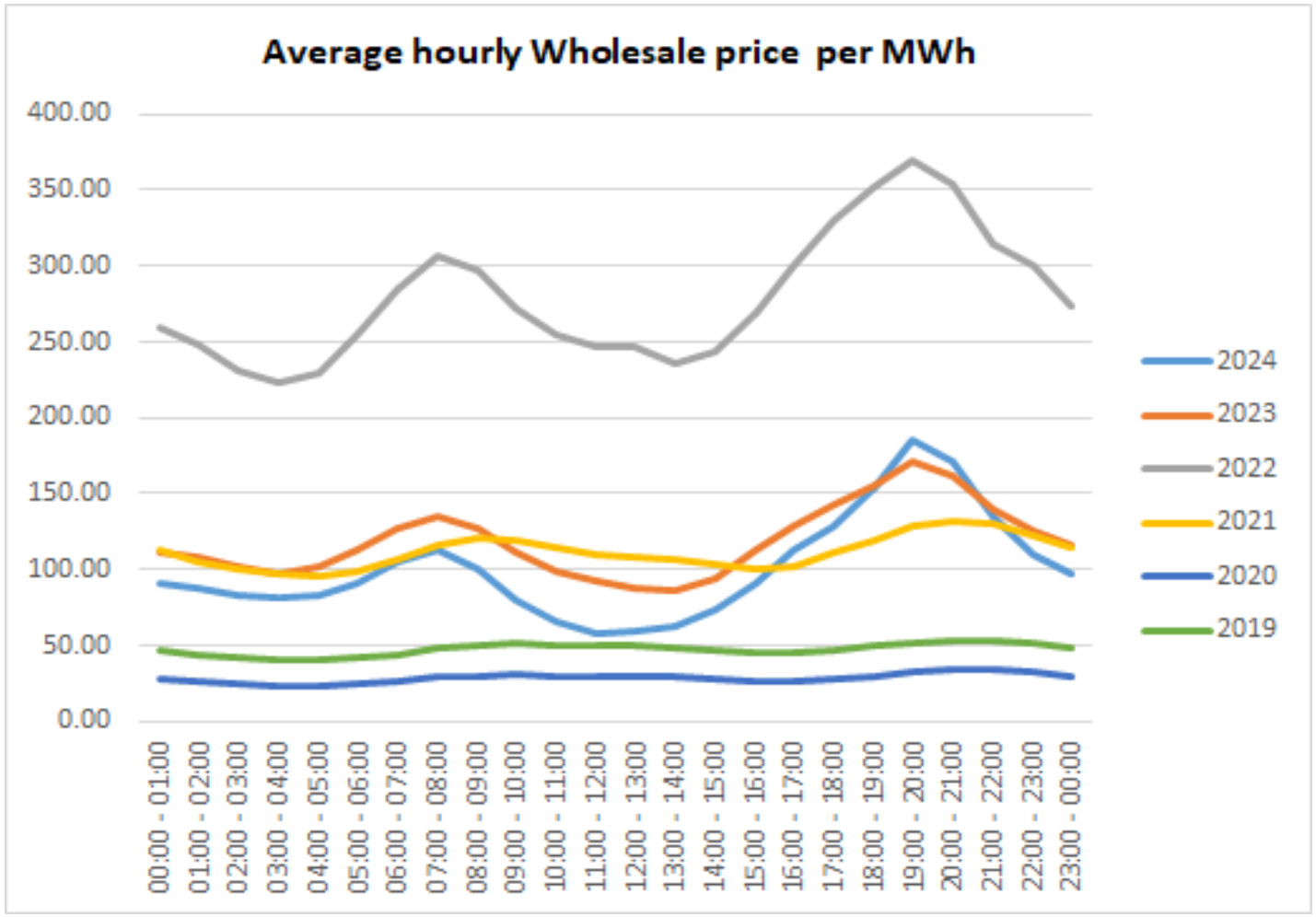
Source: IPTO

Dominance of RES in Wholesale market with lots of zero prices and significant price arbitrage

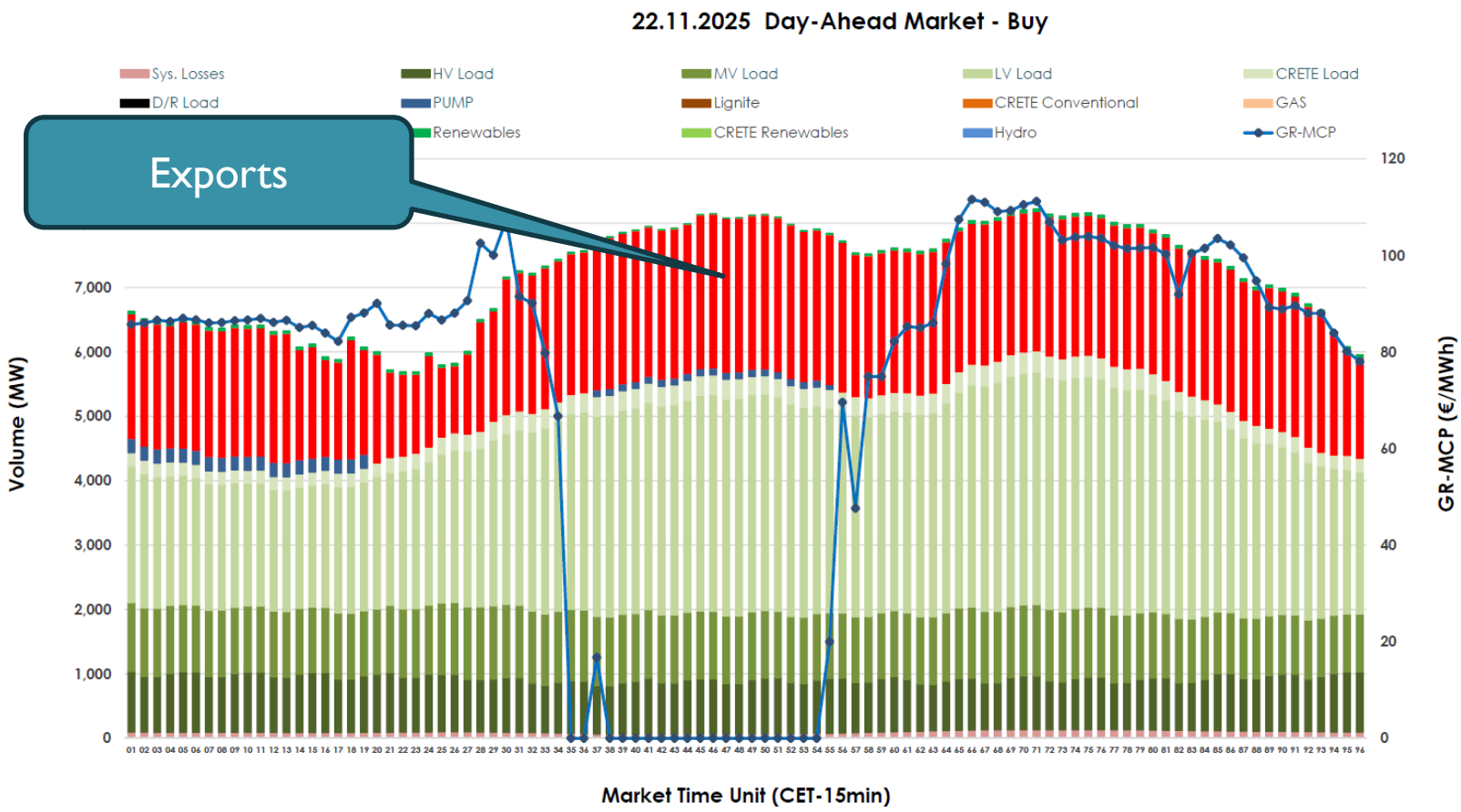


Source: ENEX

The intraday fluctuation of wholesale (MCP) price in day ahead market (DAM)

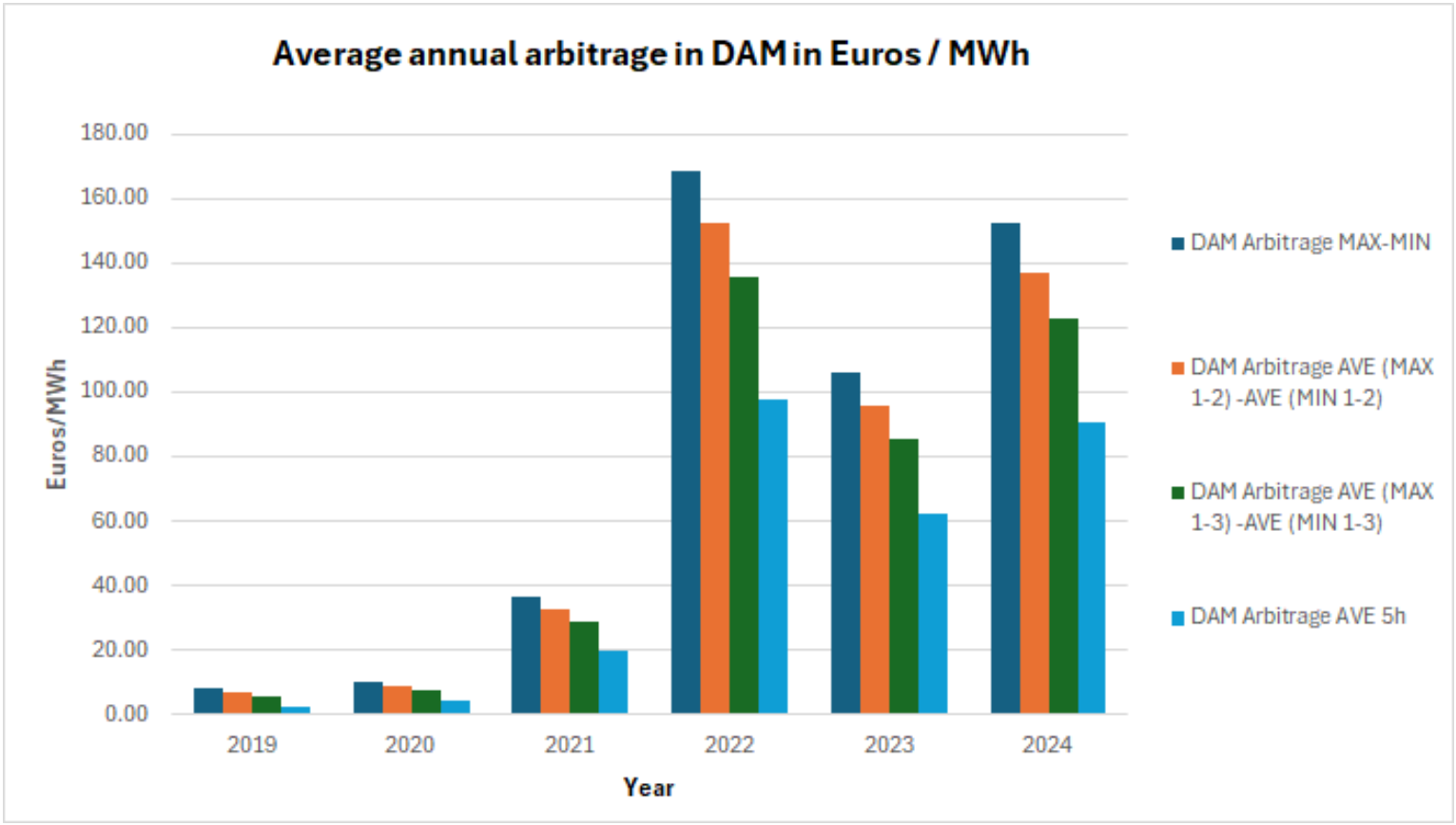


Greece has become a net electricity exporter due to high RES penetration

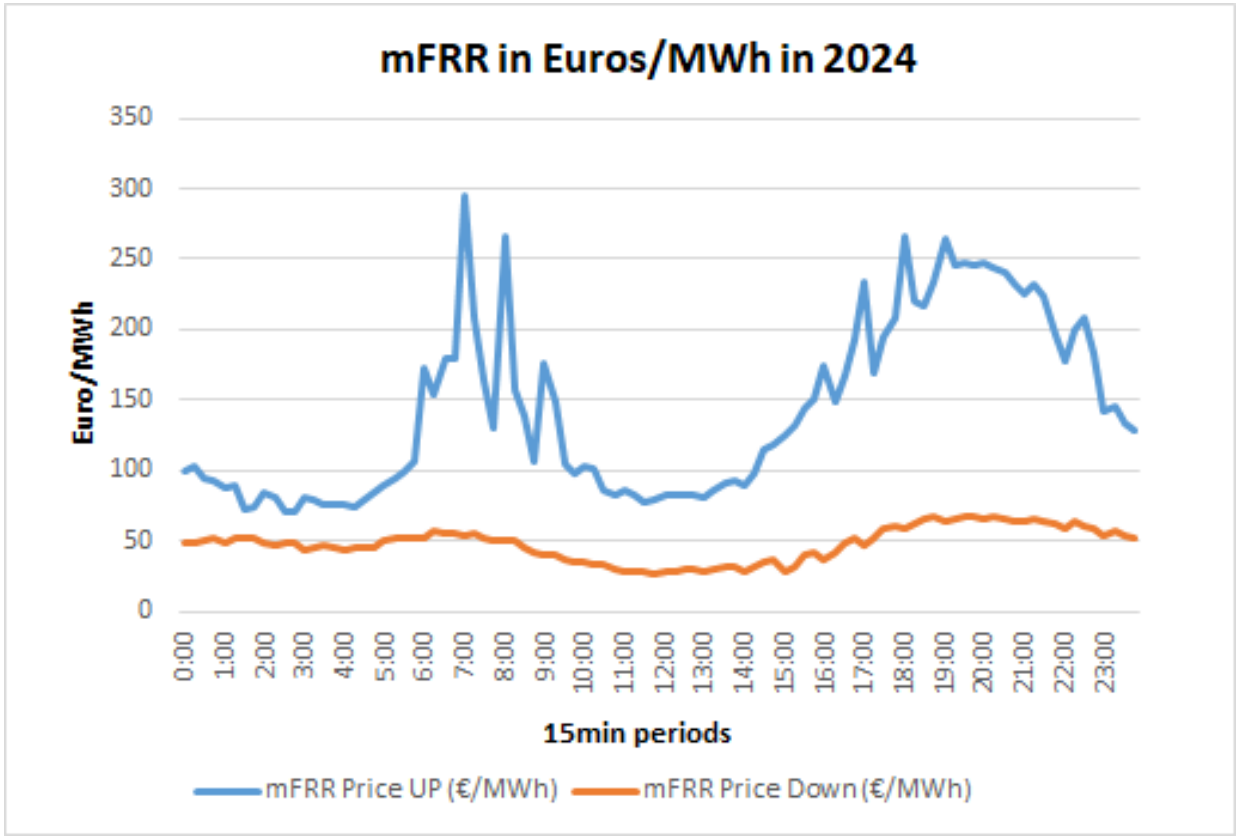


Source: ENEX

Growing arbitrage in day ahead market (DAM)



Profit potential for BESS projects in Balancing markets



Challenges and opportunities

- For new PV projects there are no tariffs or public state operation supporting mechanisms. Remuneration is based solely on wholesale market or/and PPAs directly with big consumers.
- Greece has set an ambitious target for battery energy storage projects (BESS) towards 2030, namely 5.6 GW. Investment interest for BESS is even higher and mature projects asking for connection terms exceed 10 GW.
- Only 0.9 GW of BESS are under public state operation supporting mechanism, while the rest are merchant.
- High arbitrage in wholesale prices due to RES, “promises” good profits for early merchant BESS entrants. Later-on cannibalization presents a challenge.
- BESS merchant remuneration should combine activity in balancing markets as well.
- Vertical players combining production and retail at a balanced mixture, enjoy best protection against wholesale market risks (curtailments, low or negative prices etc), since they practically sell their electricity production to final consumers at retail prices ~150 euros/MWh, hence offering much higher margins.
- Vertical players are neutral against negative wholesale prices (they just reverse cashflow that in any case equals to zero when the mixture between production and retail is balanced in real time terms), while for simple producers consist the ultimate barrier that oblige them to stay out of the market or incorporate BESS to their RES, out of feed in tariff, projects.

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المنتدى الاقتصادي العربي – اليوناني الرابع عشر

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Thank you!

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