

PPC Group completes construction of 2.13 GW photovoltaic projects in Northern Greece– Rapid progress in energy storage projects

- *The largest cluster of photovoltaic projects in Europe, with an **average annual production of 3,150 GWh**-capable of covering nearly **6% of the annual demand** of the Greek interconnected system*
- *Their operation meets the annual needs of approximately **750,000 households** and prevents more than **1,500,000 tons of CO₂ emissions annually***
- ***Energy Storage:** Construction of two battery storage stations in Meliti and Ptolemaida completed, while the Amyntaio station is progressing rapidly-pumped storage units are also advancing.*

Construction works for PPC Group's photovoltaic plants in Amyntaio and Ptolemaida in Northern Greece, **have been completed**. Utilizing former lignite mine areas, the Group has developed photovoltaic stations with a total capacity of 2,130 MW, **capable of generating 3,150 GWh annually**. This corresponds to nearly **6% of the country's annual electricity consumption** and meets the needs of approximately 750,000 households. The operation of these photovoltaic stations will prevent more than 1.5 million tons of CO₂ emissions annually.

At the same time, PPC Renewables, a wholly owned subsidiary of PPC Group, has completed the construction of **two electrochemical energy storage stations in Ptolemaida and Meliti** and is advancing the construction of a third BESS station in **Amyntaio**. In parallel, PPC has already secured the necessary regulatory approvals for two pumped storage units in Kardia and South Field.

Konstantinos Mavros, Deputy CEO for RES of PPC Group, stated: *"In a volatile geopolitical, economic, and energy environment, Renewable Energy Sources constitute a high-value domestic asset that ensures the country's energy independence. Greece represents a true success case study, as from 2019 to today, in less than seven years, the share of thermal generation has decreased from 67% to 50%, with PPC Group playing a crucial role in this achievement. Western Macedonia in Northern Greece is becoming the country's new green energy hub, hosting the largest photovoltaic cluster in Europe, developed on former lignite mine sites, alongside storage units that ensure optimal use of generated energy and contribute to system stability."*

2.13 GW Photovoltaic Parks Completed in Western Macedonia

Within the planned timelines, PPC Group completed photovoltaic projects with a total capacity of 2,130 MW, capable of covering the needs of approximately 750,000 homes and businesses. Key projects include:

- **"Phoebe" photovoltaic plant (550 MW):** Located near Pontokomi, with estimated annual production of 880 GWh, covering approximately 196,000 households and preventing nearly 440 kt of CO₂ emissions annually. Its output corresponds to 1.8% of Greece's interconnected system production.



Figure 1: Part of a 550 MW photovoltaic facility located near the Agios Dimitrios Power Plant.

- **Amyntaio photovoltaic complex (940 MW):** Developed in cooperation with RWE across Rodonas, Filotas, Lakkia, and Perdikkas. Estimated annual production of 1,500 GWh, covering approximately 298,000 households and preventing more than 750 kt of CO₂ emissions annually.
- **"Helios Velos 1" photovoltaic plant (200 MW):** Located near Ptolemaida, with estimated annual production of 320 GWh, covering approximately 71,000 households and preventing nearly 160 kt of CO₂ emissions annually.
- **"Exochi 7" photovoltaic plant (80 MW):** Estimated annual production of 122 GWh, covering approximately 27,000 households and preventing nearly 61 kt of CO₂ emissions annually.
- **"Akrini" photovoltaic plant (80 MW):** Estimated annual production of 122 GWh, covering approximately 27,000 households and preventing nearly 61 kt of CO₂ emissions annually.

Additionally, ten smaller photovoltaic stations in former lignite areas generate solar energy, covering the needs of thousands of households and preventing thousands of tons of CO₂ emissions annually.



Figure 2: Section of a 171 MW photovoltaic plant located in a former deposition area of the Western Macedonia Lignite Center.

Engaging local communities in **Kozani and Florina**, PPC Group following its commitment during the presentation of its investment plan for Western Macedonia in April 2025, **launched a Bond in March 13 2026, amounting to €5 million**, giving exclusively residents the opportunity to participate alongside PPC in the investments it implements in the region while **enjoying a high and stable return**.

Residents can participate until April 17 2026. Nominal value of each bond €100, with a minimum participation limit of five bonds and a maximum of 250 bonds. Guaranteed annual return of 8%, with the investor's initial capital increasing by 40% (before taxes) within 5 years.

Energy Storage: The Next Step for PPC Group

The development and integration of large-scale photovoltaic plants into the electricity system will be supported by energy storage systems (electrochemical and hydro-based), which absorb surplus generated energy and release it when electricity demand exceeds RES generation, while also contributing significantly to grid stability.

To date in Western Macedonia, PPC Renewables **has completed the construction of the BESS stations in Ptolemaida (near Kardias Power Plant) and Meliti (near Meliti Power Plant)**, with a total installed capacity of **98 MW and storage capacity of 196 MWh**.



Figure 3: Battery array of the Meliti I Electrochemical Energy Storage Station.

Near the Amyntaio Power Plant, construction works are already underway for another electrochemical energy storage station with a **capacity of 50 MW and 200 MWh**, meaning it can supply electricity to the grid for up to four hours. The project is expected to be completed in the coming months.



Figure 4: Battery array of the Ptolemaida IV Electrochemical Energy Storage Station. The Kardia Power Plant can be seen in the background, along with the location of the lower reservoir of the future pumped storage station.

At the same time, **two major pumped-hydro storage projects** are maturing in former mining areas of PPC Group, having already secured the necessary regulatory approvals.

The first pumped storage project is being developed at the Kardias mine, following the decommissioning of the cooling towers of the old units. It will have a generation capacity of **320 MW for eight hours**, using the bottom of the former mine as the lower reservoir.

Similarly, in the South Field mine, the Group is planning a pumped storage unit with a capacity of **240 MW for 12 hours**, with an investment cost of €310 million.

Pumped-hydro storage projects are a modern, large-scale energy storage technology that mitigates the intermittency of renewable energy sources and contributes to grid stability in a fully sustainable manner. A typical pumped storage system includes two water reservoirs at different elevations and hydroelectric turbines. Electricity generated during low-demand periods is used to pump water from the lower reservoir to the upper one, where it is stored as potential energy. When demand increases, water is released back down through turbines, generating electricity.

In practice, PPC utilizes its inactive mines, which are ideal for this use due to their elevation differences and ability to be converted into water reservoirs.



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