# Recent Developments in the Hungarian EV Battery Sector

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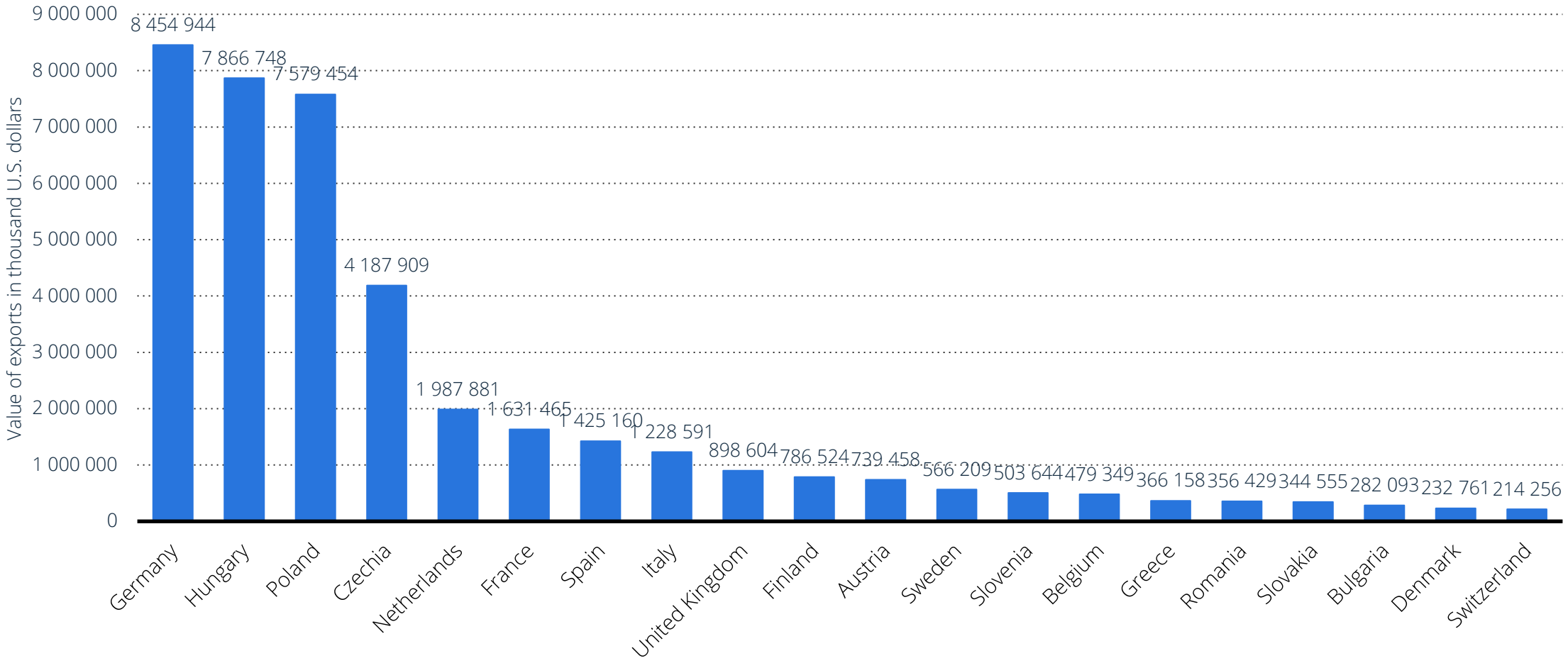
# Strategy, aims

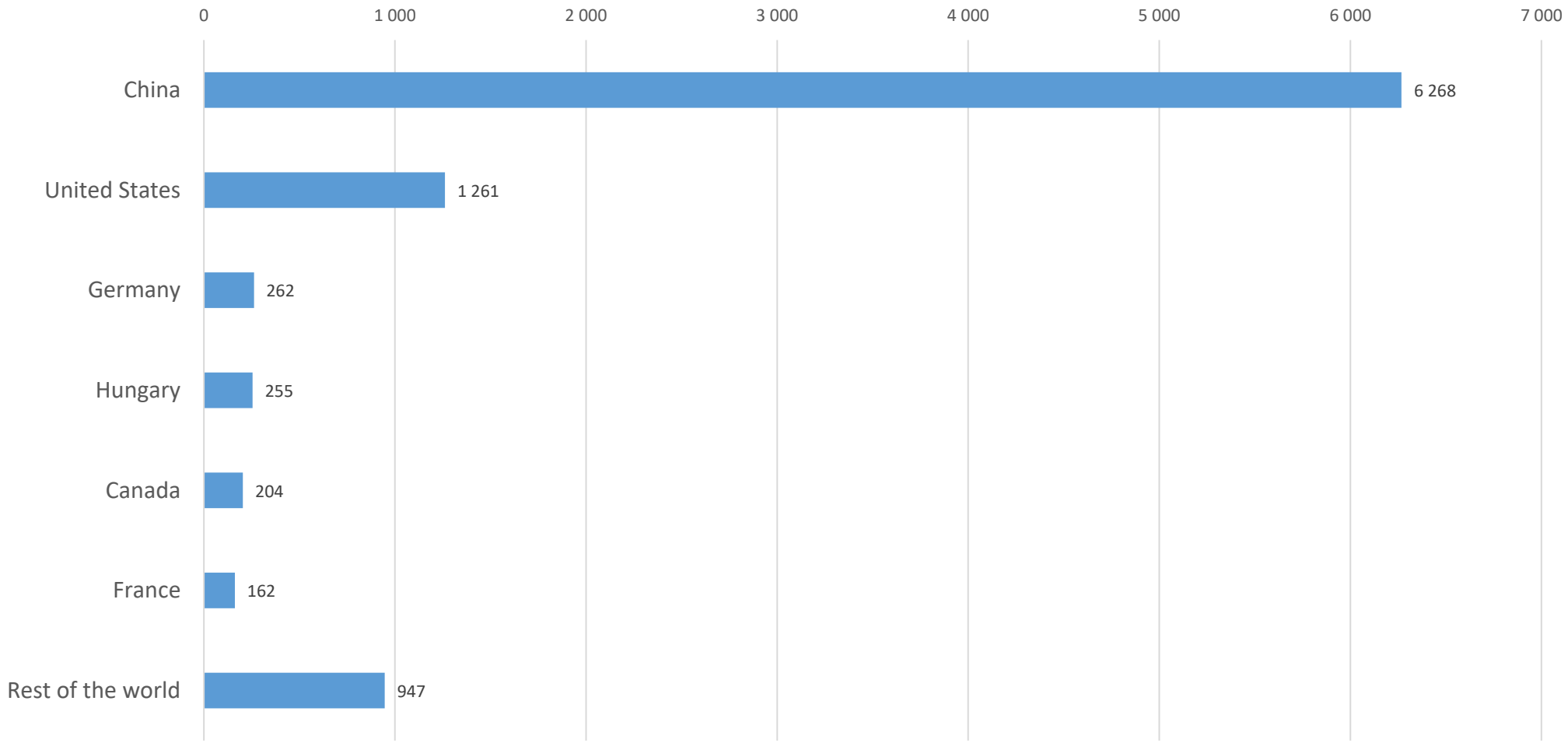
- National Battery Strategy – accepted in 2021, published in 2022. No strategic environmental assessment – although it would have been obligatory. No coordination with water management.
- Aim: 300 + GWh capacity (huge, compared to other countries)
- Tools: attract South Korean, Chinese firms. EUR 15 bn investment
- Direct state aid (10-12% of the invested sum or more) + Indirect aid – infrastructure building (altogether around EUR 4 bn)
- Chain reaction – more and more supplier plants are coming
- Recycling companies (illegal deposits)

# Export value of battery cells in Europe in 2024, by leading country (in 1,000 U.S. dollars)




**Note(s):** Europe; 2024; Includes separators, plates, and other parts. Does not include spent cells.
Further information regarding this statistic can be found on page 8.
**Source(s):** Trade Map; ID 1611223

# Projected global lithium-ion battery capacity 2030, by country



# Companies working, built and planned

Except mining, **all segments of the value chain** are or will be provided **by foreign** producers in Hungary: first South Korean (Samsung, SK, SungEel, etc) lately Chinese firms (CATL, Sunwoda, Eve Power, Huayou Cobalt, etc.)

| Battery manufacturing related function | Number of plants | Direct state aid EUR mn. | Existing and prospective workplace |
|---|---|---|---|
| Raw material suppliers | 14 | 400 | 3935 |
| Part components manufacturers | 10 | 40 | 1963 |
| Cell, module manufacturers | 6 | 1405 | 19 438 |
| Battery assembly | 5 | 50 | 1000 |
| Recyclers | 4 | 22 | 456 |
| Hazardous material store | 3 | - | |
| **Total** | **42** | **1917** | **26 792** |

# Problems with resources

- **Energy**: nuclear,  solar – boom, fossil (gas) for furnaces, high necessity of the plants for constant electricity. Paks 2

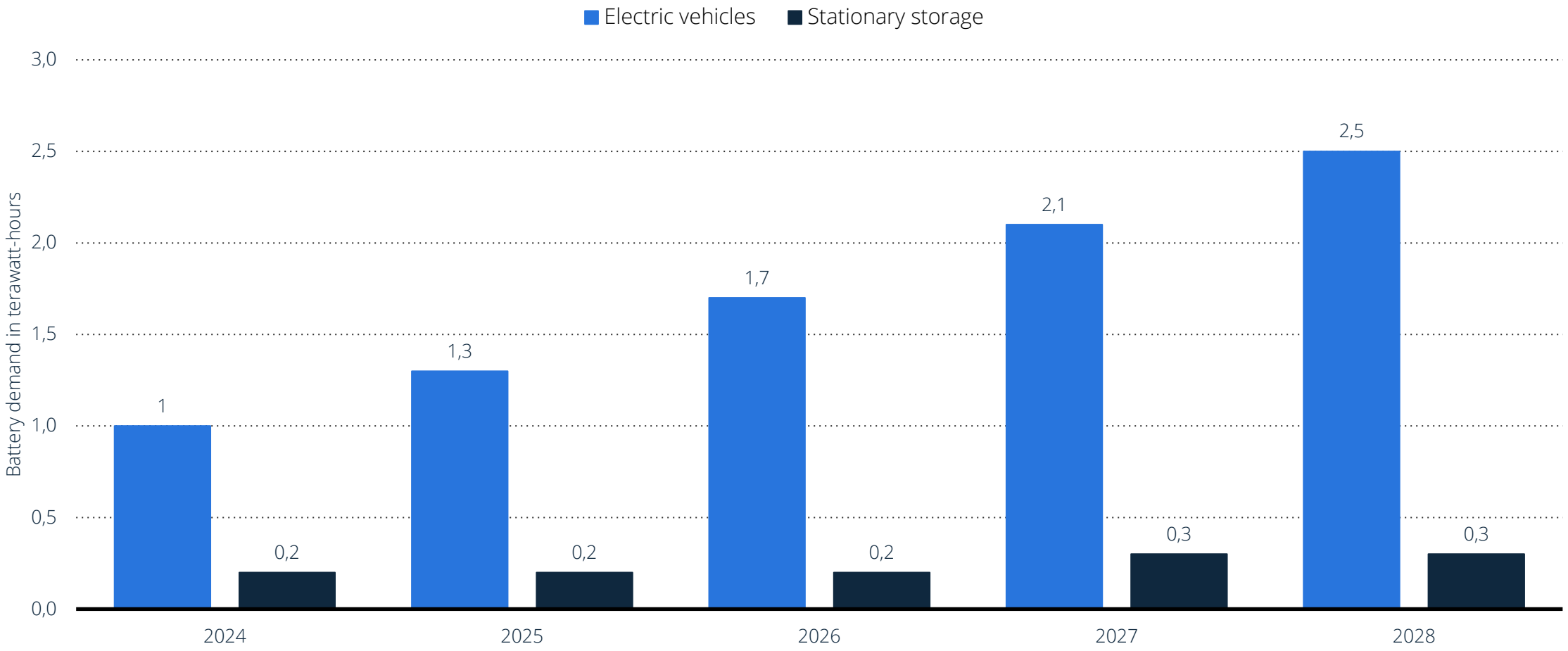
- **Labour**: not enough, high competition for the same small labour pool, Asian guest workers, regulation, recent layoffs

- **Water**: the greatest battery cluster in a dry area with no river. CATL and EVE try to use cleaned wastewater mixed with Tisza river water (brought from distant place). Technical problems, expensive.

# Demand problems

- Bad figures for industry, especially for battery production: - 46% decline between 2024 March and 2025 March
- No demand, factories are waiting, lay off workers. Long-term contracts with OEMs
- Battery cell factories – profit has decreased
- Expected recovery – end 2025, production for export
- Energy storage – needs also batteries

# Projected lithium-ion battery demand worldwide from 2024 to 2028, by application (in terawatt-hours)




**Note(s):** Worldwide; 2024; Excludes consumer electronics, includes battery EV and plug-in hybrid EV.
Further information regarding this statistic can be found on page 8.
**Source(s):** Bloomberg; ID 1488191

# Suppliers, value chain

- Battery sector: low value-added (19%, below manufacturing average)
- BYN – NMP regenerating plant – Heves (but local protest)
- KunlunChem electrolyte plant – Szolnok (local protest)
- Recycling companies
- Hungarian government – „100 (150) new factories” in 2025 program
  - Nothing is transparent

# Lax and old regulation – some changes

- Increasing fees for polluters (max EUR 5 m)
- Open list of outstanding pollutants
- Andrada – „strange” recycling plant. As a trick from the authorities, in March 2025 the firm received a permission (without informing the municipality) as a “metal waste handler” to begin activity. Avoid environmental use permit - 5 tons – 4.996 tons. Location is an old warehouse, not suitable. The local municipality submitted a lawsuit against the County authority because the permission violates several laws and regulations, and the permission was quickly withdrawn. However, Andrada submitted rapidly a new request for a new permission.
- EU regulatory changes – black mass hazardous. Flexibility, EPR

# Environmental effects

- Normal functioning:
  - Noise , emissions, dust, vapour, NOX, etc.
  - Huge amount and variety of hazardous chemicals and waste (polluted filters, clothes, toxic sludge, scrap batteries, etc).
  - PFAS (per- and polyfluorinated alkyl substances) released during functioning + recycling. “forever” materials, slowly cumulating in human body or in the environment. Li-ion battery factories damage the the aquatic fauna with that (Rensmo et al, 2023).
- Irregular functioning (Korean firms): procedural, construction-related, fire protection problems, occupational health and safety, environmental issues. Black powder on the roof, nickel found in the soil near Samsung SDI
- Chinese firms: many not yet functioning, Halms – pollution of water, Semcorp – fire of filters

# Citizens’ protests

- In autumn 2023, groups formed an umbrella organisation called AKÁRTEIS (Association for the Justice of Accumulator Damaged Settlements)
- Civil EU Presidency – Battery conference with presenters from EU DG too
- In March 2025, a major step of increased solidarity was the cooperation of eight mayors and cities against the – once already banished, but later returned - battery recycling plant (Andrada) in Sóskút.
- Government labels citizens as “foreign-funded extremist, pressure groups” and „members of the Brussels and Soros network”

# THANK YOU FOR YOUR ATTENTION!

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